County of Riverside

Volume 1: Draft Program EIR No. 521

State Clearinghouse No. 2009041065 • Part 1 of 2

RIVERSIDE COUNTY
PLANNING DEPARTMENT

February 2015

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Draft GPA 960 / Public Draft EIR 521: May 1, 2014
Recirculated Draft GPA 960/Recirculated Public Draft EIR 521: February 21, 2015
Proposed GPA 960 / Final EIR 521: _____
Adopted GPA 960 / Certified EIR 521: _____

RIVERSIDE COUNTY GENERAL PLAN UPDATE PROJECT

General Plan Amendment No. 960

ENVIRONMENTAL IMPACT REPORT No. 521

VOLUME 1, PART 1 of 2: DRAFT EIR No. 521

(SCH No. 2009041065)

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February 2015

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Section 1.0

Summary

Section 1.0 Summary

NOTE TO THE READER:

The County of Riverside is recirculating Draft Environmental Impact Report No. 521 (DEIR No. 521) for public review from February 21, 2015 through April 6, 2015 in accordance with the California Environmental Quality Act, Section 15088.5. Correlative changes were made to Draft General Plan Amendment No. 960 (GPA No. 960) and the Draft Climate Action Plan. The revised GPA No. 960 and CAP documents are made available for public reference.

The documents were previously circulated from May 1, 2014, through June 30, 2014. The circulation garnered a substantial amount of comments from government and regulatory agencies, interest groups, and Riverside County citizens, which resulted in the aforementioned changes. Additionally, several changes to the documents occurred in order to more accurately reflect the existing conditions of the County, and to further analyze impacts associated with the GPA No. 960. The following is a summary of the changes that occurred to the documents:

Draft General Plan Amendment No. 960:

- *Data corrections to the Lakeview Nuevo Area Plan to reflect the removal of Specific Plan 342.*
- *Removal of the Lakeview Mountains Policy Area from the Lakeview Nuevo Area Plan.*
- *Addition of language clarifying the Wine Country Community Plan (GPA No. 1077) in relation to the Southwest Area Plan.*
- *Addition of language clarifying Airport Land Use consistency and Mixed Use Planning Areas.*
- *Addition of Policy S 1.4 requiring the County to implement the County of Riverside Multi-Jurisdictional Hazard Mitigation Plan.*
- *Addition of Policy OS 4.9 discouraging development within watercourses and areas within 100 feet of riparian vegetation.*
- *Minor modifications to text and policies as a result from comments received during the circulation of the draft document.*

Draft EIR No. 521:

- *The Draft EIR was updated to better reflect the existing conditions within the County.*
- *Several analysis sections of the Draft EIR were further refined in order to reflect changes associated with the updated background information. These sections included Air Quality, Greenhouse Gas, Biological Resources, Transportation and Circulation, Water Resources, and Cumulative Impacts.*
- *All analysis sections were updated where relevant to maintain consistency with any changes made in the Draft General Plan Update and Draft Climate Action Plan.*

Draft Climate Action Plan:

- *The Draft Climate Action Plan was updated with new implementation measures.*

The recirculated documents better account for the changing environment in Riverside County and more accurately address future conditions. Although comments submitted during the previous comment period do not require a written response, it should be noted that these comments are part of the administrative record and were taken into consideration while drafting the revised document. Any comments made during the May 2014 circulation of the documents will be included in the administrative record; however they will not be addressed in the Response to Comments. Per Section 15088.5(f)(1) of the CEQA Guidelines, only those comments submitted in response to the recirculated Environmental Impact Report will receive a formal written response in the Response to Comments as a part of the Final EIR.

In order to clearly display all of the changes that have been made during the General Plan Update Process, text has been formatted to show changes made in each step of the process. This includes:

- Black Text: General Plan text prior to GPA No. 960 is noted in black text.
- *Red Text: Textual changes proposed as part of the May 2014 previously circulated document are shown in red text.*
- *Blue Text: Textual changes made to the documents after the May 2014 circulation are shown in blue text.*

The color coding of the edits allows the reader to distinguish more clearly between the original General Plan text, the previously proposed May 2014 revisions (red) and the new February 2015 proposed revisions to GPA No. 960, EIR No. 521 and the Climate Action Plan.

1.1 Background on the General Plan Update Project

Starting in the late 1990s, the County of Riverside entered into a highly innovative and progressive planning effort known as the "Riverside County Integrated Plan" (RCIP) to create a comprehensive vision for anticipating and addressing the competing needs of growth and development, transportation and regional circulation, environmental protection and resource conservation within Riverside County over the next 20 to 50 years. The result of this landmark effort was the October 2003 adoption of an entirely new General Plan that replaced the aging plan that had become a pastiche of disjointed elements, policies and maps. The RCIP effort also encompassed creation of the Community Environmental and Transportation Acceptability Program (CETAP) for planning and coordinating provision of regional transportation systems and development of Multi-Species Habitat Conservation Plans (MSHCPs) to protect valued natural resources within Riverside County.

A key innovation of the 2003 RCIP General Plan was the introduction of "Foundation Components," a set of five broad, major land use categories that capture the overarching patterns of lifestyle within Riverside County's unincorporated communities: Open Space, Agriculture, Rural, Rural Community and Community Development. These Foundations are then supplemented at the local (Area Plan) level by a series of "land use designations" (LUDs) that describe specific types of land use with associated building density or intensity ranges, such as "Rural Residential," "Recreation," Commercial Retail" and so on. Chapter 1 of the 2003 RCIP General Plan describes the relationship thusly:

> *Land use mapping at the General Plan level, such as in the Land Use Element, depicts [five] "Foundation" Components, while Area Plans use a streamlined, consistent set of land use designations that fall under the umbrella of the Foundation Components.*

Accordingly, the countywide map of land use, Figure LU-1 in the Land Use Element (Chapter 3), delineates only the five Foundation Components. As detailed in the General Plan Certainty System (Administration Element, Chapter 10), the significance of these foundation components is that General Plan Amendments proposing a change of land use designation from one Foundation Component to another can only be entertained by the County at eight-year intervals, except in specific extraordinary circumstances and for Agriculture Foundation Amendments, which have slightly different standards. Changes that "downgrade" a land use, say from Commercial Retail to Open Space–Conservation, for example, are also allowed outside of the Certainty System cycle. For a full list of the General Plan's Foundations and LUDs, see Table 3.0-C in this EIR, or refer to the Glossary (Section 8.0).

In this way, the General Plan establishes its ground-breaking "Certainty System," which through the use of the proscribed Foundations and LUDs mentioned above, provides clarity regarding the interpretation and use of the General Plan in ongoing decision making and seeks to sustain the General Plan's policy direction over time. It does so while still recognizing that circumstances will change, imperfections in the General Plan will be discovered and events will occur that require changes. As outlined in General Plan Chapter 10 (Administration Element), the Certainty System takes State of California guidelines that limit (generally to four) the number of amendments to the General Plan each year and strengthens them further by identifying specific amendment categories and a time frame within which each can be considered for amendment to the General Plan. This to achieve, in the word of the General Plan (Chapter 1), "the absolute necessity to maintain a high level of confidence in the Plan and enable people affected by it to have reasonable expectations regarding how the [General] Plan will impact them. The Certainty System serves the needs of those who value a rural lifestyle, farmers who have invested in their operations and developers who want to ensure return on their investments. The System also ensures that open space is preserved in the County [of Riverside] for the benefit of all."

Another noteworthy feature of the 2003 RCIP General Plan is the formalization of 19 Area Plans which encompass virtually all of unincorporated western Riverside County, as well as the Coachella Valley, Desert Center and the Palo Verde Valley. (The two key remaining areas, March Air Reserve Base and the far eastern portion of the desert, are addressed directly in the Land Use Element (Chapter 3) of the General Plan, rather than any Area Plan.) Area Plans consist of a land use map and other illustrative materials relevant to the area, as well as specific policy direction required to provide guidance unique to each area. The Area Plans incorporate a streamlined land use designation (LUD) system representing a full spectrum of categories that relate to the natural or economic characteristics of the land in Riverside County. This system consolidates and replaces over 200 classifications in the previous General Plan. And, as noted above, these LUDs fall into the five basic Foundations, providing a measure of certainty for the future as envisioned by the RCIP General Plan and its Area Plans.

To ensure that the policies and plans of the General Plan remain adequate and appropriate for the continuing implementation of the Riverside County Vision, the Administration Element of the Plan includes provisions for methodically revisiting the document five years after its adoption in 2003 and every eight years thereafter. In 2008, this comprehensive review process was initiated for the first time. Through it, the County of Riverside has examined how implementation of the General Plan has proceeded and worked to determine what, if any, refinements are necessary or desirable to ensure the General Plan continues to reflect the Vision for Riverside County's future and remains a viable and efficient tool for implementing that Vision. The resultant areas identified for revision form the basis of this project, General Plan Amendment No. 960 (GPA No. 960). The proposed project covers updates on a variety of issues throughout the General Plan's Elements and Area Plans. Where necessary, a number of General Plan Appendices, such as Appendix E, "Socioeconomic Buildout Assumptions and Methodology," Appendix F, "Population and Employment Forecasts," and others have also been updated. The proposed changes are summarized briefly below. A full description of the proposed scope of the project is provided in Section 3.0 (Project Description).

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LOS ANGELES COUNTY

SAN BERNARDINO COUNTY

MOHAVE COUNTY, AZ

ORANGE COUNTY

RIVERSIDE COUNTY

LA PAZ COUNTY, AZ

PACIFIC OCEAN

SALTON SEA

SAN DIEGO COUNTY

IMPERIAL COUNTY

YUMA COUNTY, AZ

Data Source: Riverside County (2013)

Highways

City Boundary

Waterbodies

Figure 1.1

December 16, 2013

Miles

0 12.5 25

REGIONAL LOCATION
RIVERSIDE COUNTY

Path: \\agency\gtmagis\Projects\Planning\Cindys\PurpleMapGallery\Fig1.1 RegionalLocation.mxd

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1.2 Summary of the Proposed Project, GPA No. 960

The Riverside County General Plan serves as a blueprint for the future of Riverside County. It describes how the County of Riverside anticipates and plans for future growth, development and environmental management programs over the long term. It is intended to act as a "constitution" for public and private development, and to serve as the foundation for growth and land-use-related decision-making within unincorporated Riverside County. Most of unincorporated western Riverside County, the Coachella Valley region and parts of eastern Riverside County are divided into 19 Area Plans to provide more detailed land use and policy direction regarding local issues, such as land use, circulation and open space. The General Plan is meant to express the community's goals with respect to the man-made and natural environments, and to set forth the policies and implementation measures needed to achieve those goals for the welfare of those who live, work and do business in Riverside County. The following discretionary actions will be submitted to the Board of Supervisor as part of the proposed project:

- Adoption of General Plan Amendment No. 960 amending various General Plan maps, Elements, policies and appendices.

- Certification of Program Environmental Impact Report No. 521 pursuant to the California Environmental Quality Act (CEQA).

If GPA No. 960 is approved, it is expected to be used by a number of public agencies in connection with a variety of additional future discretionary decisions, as well as for other planning and long-range forecasting and coordination purposes. EIR No. 521 may also be used as a Program EIR for the review of any resultant implementing projects occurring under GPA No. 960. Such actions may include approval, initiation, funding or contribution to any policies, public facilities or other programs intended to implement the portions of the General Plan, as amended by GPA No. 960. Other actions would also include the eventual processing by the County of Riverside of development-level land use proposals (e.g., specific plans), as well as project-level review and approval of land use maps, such as tract and parcel maps, plot plans, conditional use permits, public use permits and other discretionary Riverside County actions related to land use implementation. Changes to zoning or other ordinances, as well as the proposal of new ordinances, may also result from the adoption of GPA No. 960.

The project, GPA No. 960, encompasses the General Plan components listed in Table 1.0-A (Proposed Components of GPA No. 960), below. For each item listed, existing policies were examined and assessed against current conditions. Where needed, policy or program changes were developed to provide the guidance necessary for the planned level of intensity and growth expected in Riverside County. As a result of this process, the following General Plan changes were included in GPA No. 960:

Table 1.0-A: Proposed Components of GPA No. 960

Proposed Project Component	Brief Description
I. GENERAL PLAN ELEMENTS	
1. Land Use Element	
Incidental Rural-Commercial Land Use Policy	New policy to allow incidental rural commercial use to occur in Rural and Rural Community Foundation Land Use Components. Proposed uses must adhere to the development standards of the Rural Commercial Zone.
Rural-Community Foundation Sphere of Influence Accommodation Policy	New policy to allow parcels within a city sphere of influence and the Rural Community Foundation Component to be moved into the Community Development Foundation (outside of normal cycle) if strict criteria and policies are met.

Proposed Project Component	Brief Description
Rural Village Overlays and Study Area Revisions	Revisions to existing RVOs and RVSAs to reflect outcomes of spatial analysis to determine appropriate land use patterns. (Including the Chiriaco, El Cariso, Meadowbrook, Good Hope, Sky Valley and Aguanga areas, as well as the San Jacinto Agriculture-Potential Development Study Area. See Area Plan list for specific sites and more details.)
Policy Area Revisions	Revisions to existing policy areas to reflect spatial analyses for determining appropriate land use patterns and other revisions to provide clearer direction. (Including the Anza Valley and Lakeland Village areas. See Area Plan list for specific sites and details.)
Airport Land Use and Airport Influence Area Compatibility Revisions	Amend policies on airports and land use compatibility to comply with California State statues. Update LUDs surrounding three airports (Blythe, Riverside Municipal and Flabob) to improve consistency with ALUC safety zones and plans.
Open Space Foundation Component Amendments	Exempt Foundation Component amendments into Open-Space Foundation from the Certainty Cycle to facilitate preservation of dedicated open space.
Expanded Day Care Facilities Policies	Expand intent of GPA No. 883 to address day care services for a wider spectrum of users, i.e., from child to senior care. Remove policies better suited to inclusion in as Riverside County Planning Dept. Standard Operating Procedures for day care facilities.
Chocolate Mountain Aerial Gunnery Range Military Policy	Add policy to address land use compatibility with the military base and the surrounding area; add corresponding policies to the Noise Element and the Eastern Coachella Valley Area Plan.
Update Land Use Element Figures, Tables, Policies and Text	Update these items to reflect current data. Includes Figure LU-1 (Land Use) changes to land use designations and deletion of Figure LU-7 (March Air Reserve Base Land Use Plan). Corresponding Area Plan items changed as needed.
2. Circulation Element	
Update County Circulation Plan and Text	Update General Plan circulation network (Figure C-1) to reflect results of Riverside County's newly developed transportation traffic model (RIVTAM) and improve consistency with proposed land uses across Riverside County. Also reflected in Area Plan level maps. Various text and polices revised accordingly.
Revised Traffic Level of Service Standards	Update Figure C-3 (Link/Volume Capacity/Levels of Service for Riverside County Roadways) to expand level of service (LOS) categories, as proposed by Transportation Department.
Revised Trails Map, Policies, Trails Sections and Text	Comprehensively update countywide bikeways and trails map (Figure C-7) to reflect current trails plans and provide policy direction to better facilitate trail construction and maintenance. Associated Area Plan items updated accordingly.
Update Circulation Element Figures, Tables, Policies and Text	Update these items to reflect current data. Includes revisions to Figure C-6 (Airport Influence Areas) and others. Corresponding Area Plan items changed as needed.
3. Safety Element	
Update Geological Data	Update Safety Element figures, tables, text and polices to reflect new available geological and seismic data, including Figure S-3 (Generalized Liquefaction) and Figure S-4 (Earthquake-Induced Slope Instability Map) which were revised per new information for the USGS Murrieta 7.5' quadrangle, as well as from other sources. Corresponding Area Plan items changed as needed.
Update Flood and Dam Inundation Data	Update Safety Element figures, tables, text and polices to reflect new available hydrological data from the U.S. Army Corps of Engineers and Riverside County Flood Control and Water Conservation District, including Figure S-9 (100-Year Flood Hazard Zones) and Figure S-10 (Dam Failure Inundation Zones), particularly in the Prado Basin, as well as from other sources. Corresponding Area Plan items changed as needed.
Update Fire Hazards Map and Policies	Update Safety Element figures, tables, text and polices to reflect new available fire hazard data from the California State and Riverside County Fire Department (CalFire), including Figure S-11 (Wildfire Susceptibility), as well as from other sources. Corresponding Area Plan items changed as needed.
Update Various Safety Element Figures, Tables, Policies and Text	Update these items to reflect current data. Includes Figure S-12 (Hospital Locations) through Figure S-22 (Rail Facilities and Pipeline Locations), among others. Corresponding Area Plan items changed as needed.
4. Multi-Purpose Open Space Element	
Energy Conservation Policies	Update to reflect current regulatory environment and policies regarding energy conservation and efficiency.
Water Conservation Policies	Revise/add policies to conserve water resources in Riverside County through new water-efficient landscaping practices (and Riverside County Ordinance No. 859).

Proposed Project Component	Brief Description
Watershed and Arroyo Policies	Revise/add policies to protect arroyos and watersheds. Includes corresponding changes to the Land Use, Safety and Circulation Elements as well.
Update Multi-Purpose Open Space Element Figures, Tables, Policies and Text	Update these items to reflect current data. Includes Figure OS-2 (Agricultural Resources) update per recent State of California farmland data, Figure OS-5 (Mineral Resources) to reflect latest mineral designations issued by the State of California, deletion of Figure OS-6 (Relative Archeological Sensitivity of Diverse Landscapes) and the addition of two new figures (OS-3a and OS-3b) depicting forestry resources. Corresponding Area Plan items changed as needed.
5. Air Quality Element	
Climate Action Plan and Greenhouse Gas Reduction	Add text and policies that address greenhouse gas reduction regulations and climate change in order to establish greenhouse gas reduction goals and provide coordination with the proposed Climate Action Plan (CAP).
Update Air Quality Element Figures, Tables, Policies and Text	Update these items to reflect current air data and regulations. Corresponding Area Plan items changed as needed.
6. Administration Element	
Revised Review Standards	Make revisions as necessary to reflect appropriate General Plan implementation.
7. General Plan Appendices	
Appendix A-1: Glossary of Terms and Acronyms	Update terms and acronyms.
Appendix B-1: General Planning Principals	Incorporate revisions to the General Planning Principals established by the 2003 General Plan update.
Appendix E-1: Buildout Assumptions & Methods	Revise and update land use build out assumptions used to develop build out data (population, housing, jobs, etc.) for the General Plan.
Appendix F-1: Population and Employment Forecasts	Revise population and employment forecast of Riverside County to reflect consistency with the SCAG model and provide data to make General Plan consistent.
Appendix I-1: Noise Element Data	Include technical noise data developed specifically for GPA No. 960.
Appendix K-1: Implementation Program	Update Implementation Program to reflect GPA No. 960 changes and additions.
Appendix L-1: Riverside County Airport Land Use Compatibility Plans	Include the current airport land use compatibility plans.
II. AREA PLANS	
Lake Elsinore Environs Policy Area (*aka* Lakeland Village) (Elsinore Area Plan)	Update mapped LUDs to reflect latest FEMA 100-year floodplain maps. Revise LUDs where necessary to eliminate split (two or more) LUDs on a single parcel.
El Cariso Rural Village Study Area (Elsinore Area Plan)	Delete existing study area as a result of the parcel-specific land use analysis made of the area. Region found not ripe for significant urbanization in near future.
Various Revisions to Land Use Plan, Policy Areas and Overlays within Area Plans	Revise mapped Land Use Designations, new city boundaries, policy area boundaries, overlays and make other land use changes within these Area Plans: Eastvale, Jurupa, Highgrove, Temescal Canyon, Elsinore, Lake Mathews/Woodcrest, Lakeview/Nuevo, Mead Valley, Southwest, Sun City/Menifee (mostly in City of Menifee now), Harvest Valley/Winchester, Reche Canyon /Badlands, San Jacinto Valley, Pass, REMAP, Western Coachella Valley, Eastern Coachella Valley, Desert Center, Palo Verde Valley and Figure LU-6 (Eastern Riverside County Desert Areas Land Use Plan).
Various Updates to Figures, Tables, Polices and Text (Various Area Plans)	Updates of various Area Plan figures (including hazard maps and resource maps), tables, policies and texts, as needed for consistency with changes made in the General Plan Elements (as described above).
III. PARCEL-SPECIFIC MAPPING (LUD) CHANGES	
Criteria 1 (R-M not warranted)	Correct technical mapping errors. Correctly designate mountainous areas and provide for missing land use designations.
Criteria 2 (OS-CH to other)	Open Space – Conservation Habitat designation applied to private properties
Criteria 3 (PF incorrect)	Public Facilities designation applied to non-public facility lands.
Criteria 4 (Remove OS-C)	Open Space – Conservation designation applied inaccurately.
Criteria 5 (Remove OS-R)	Open Space – Recreation designation applied inaccurately.
Criteria 6 (Private to OS or PF)	Parcels changed to Open Space or Public Facility designations to reflect uses.

Proposed Project Component	Brief Description
Criteria 7 (Adjust minimum parcel sizes)	Applications in process prior to 2003 General Plan Adoption and approved in the first year.
Criteria 8 (Executive directives)	Changes being made as a result of executive direction.
RCA-Acquired (Conserved) Lands	Apply OS-CH to lands acquired by the Western Riverside Regional Conservation Authority.
ALUC Compatibility Adjustments	Proposed LUD changes to reflect adopted updates to ALUC plans.

Footnotes:
1. "LUD" stands for Land Use Designation, the General Plan's method of denoting acceptable land uses for parcels.

Note: The Southwest Area Plan was amended through the adoption of GPA 1077: Wine County Community Plan, however the Wine County Community Plan and Temecula Wine County Policy Area are a separate project and as such are not included in GPA 960. Refer to Appendix Q of the General Plan for the Wine County Community Plan text.

Source: Riverside County Planning Department, project application materials, 2011.

1.3 Summary of the Public Review and Deliberation Process

As established by the Board of Supervisors, the comprehensive review process for the General Plan was organized and performed by the Planning Department of the Transportation and Land Management Agency in conjunction with public input at several levels. In addition to the various CEQA consultations conducted as part of this project, a new General Plan Advisory Committee was appointed by the Board to represent the various interests of the public and interested parties throughout Riverside County. Both the CEQA and GPAC processes were used to solicit public input and to identify areas of public controversy and the concerns of a variety of public agencies and interested parties. The CEQA process is described below. Additional information regarding the public hearings, GPAC activities and Tribal consultation performed pursuant to SB 18, and similar efforts, is provided in Section 3.0 (Project Description).

A. CEQA Notice of Preparation (NOP) Comments

Once the County of Riverside determined that the potential for significant impacts existed with the proposed project and that preparation of an Environmental Impact Report (EIR) was necessary, a Notice of Preparation (NOP) was prepared and distributed pursuant to requirements of CEQA. The NOP was issued for a 30-day comment period on April 13, 2009, to the State Clearinghouse, responsible agencies and other interested parties. The NOP and Initial Study were also posted (and remain) online at the Riverside County Planning Department's website at ***http://planning.rctlma.org/***.

The objective of distributing the NOP was to solicit public comment to aid in identifying the full range and scope of issues of concern so that these issues might be fully examined in the EIR. Thirty comments responding to the NOP were received during the comment period from the agencies/ entities listed below. Their comments are summarized in Section 2.2. The Initial Study, NOP, distribution list and NOP comments received by the County of Riverside are included in EIR Appendix A-1.

- Morongo Band of Mission Indians
- City of Chino Hills
- South Coast Air Quality Management District
- California Emergency Management Agency, Disaster Assistance Programs Branch

- City of Colton
- City of Loma Linda, Community Development Department, Planning Division
- Mojave Desert Air Quality Management District
- Coachella Valley Archaeological Society
- City of Riverside (2 letters)
- California Department of Transportation (CalTrans), Division of Aeronautics
- U.S. Dept. of Homeland Security, FEMA Region IX
- Riverside Transit Agency
- Southern California Association of Governments
- Friends of the Northern San Jacinto Valley
- Cathedral City
- California Public Utilities Commission, Rail Crossing Engineering Section,
- Imperial Irrigation District
- U.S. Marine Corps
- Orange County Transportation Authority
- Sierra Club
- California Public Utilities Commission
- Center for Biological Diversity
- Riverside County Airport Land Use Commission
- City of Colton
- Riverside County Flood Control and Water Conservation District
- Riverside County Waste Management Department
- California Regional Water Quality Control Board, Santa Ana Region
- California Department of Toxic Substances Control
- Metropolitan Water District of Southern California

B. Scoping Sessions

In compliance with State CEQA Guidelines, the County of Riverside has taken steps to optimize opportunities to participate in the environmental process. During the preparation of the Draft EIR, various federal, state, regional and local government agencies, as well as other interested parties were contacted to solicit comments and to disseminate information to them and the public regarding the proposed project. This effort also included two public scoping meetings held to solicit public comment on the project EIR. The first meeting was held on April 27, 2009, at Riverside County's Planning Department branch in Palm Desert. The second was held on May 4, 2009, at the County of Riverside Administrative Center in Riverside. Public comments, questions and statements made at these meetings have been considered and incorporated into the proposed project and this EIR where appropriate. A summary of the discussions held at the scoping meetings is provided in Section 2.2.3.

C. Public Hearings and Other Public Meetings

As part of the preparation of the project and its EIR, there have been a number of public hearings, workshops and meetings providing opportunities for public comment and participation. In particular, there were extensive public participation opportunities at the GPAC meetings. Through this forum the County of Riverside received over 70 letters discussing various issues concerning the General Plan and GPA No. 960. The list below summarizes the public meetings, workshops and hearings held to address the project. Detailed descriptions of each of these are provided in Section 3.0.

Board of Supervisors Hearings and Workshops:

- **April 8, 2008:** The Board approves creation and membership for the 2008 General Plan Advisory Committee.
- **October 21, 2008:** The Board formally initiates the proposed project as GPA No. 960.

Planning Commission Hearings and Workshops:

- **July 9, 2008:** A public workshop was conducted for the Riverside County Planning Commission to discuss the components being considered for updating the General Plan.
- **October 1, 2008:** The Planning Commission makes a recommendation to formally initiate GPA No. 960.
- **June 24 and August 19, 2009:** Planning Commission workshops were held to discuss various components of the project for which GPAC had concluded discussion and finalized recommendations. The Planning Commissioners provided feedback that further shaped the proposed project. Staff then incorporated these recommendations into the project description, the General Plan and its associated documents, and prepared Programmatic EIR No. 521 to analyze the project.
- **[Dates to TBD], ~~2014~~ *2015*:** Planning Commission hearings were held [details to be added here for Final EIR.]

General Plan Advisory Committee (GPAC) Meetings:

- **October 2008 to October 2009:** During this period, GPAC meetings were held roughly every six weeks. At these meetings, sections of the proposed project (generally proposed General Plan revisions, deletions or additions) were discussed and committee members voted on a group recommendation to go to the Planning Commission and BOS for consideration.

- **June 13 and August 1, 2013:** The remaining proposed draft GPA No. 960 updates (including the Air Quality, Safety and Circulation Elements) were presented to the GPAC. The draft Climate Action Plan (CAP) was also presented. The GPAC reviewed and discussed these documents, heard public comments and ultimately made recommendations to staff.

D. Public Review of the Draft Program EIR

The revised General Plan document prepared for GPA No. 960, the associated Draft Program EIR No. 521, including all of its appendices and technical studies, were distributed according to the distribution list included in Appendix EIR-1. It was also posted on the Riverside County Planning Department website at ***http://planning.rctlma.org/***. In addition, a CD-ROM of these documents was also made available for review at the following County of Riverside facilities and the library locations listed in Section 2.3.D.

County Administrative Center Riverside
4080 Lemon Street
Public Counter, 2nd Floor
Planning Department, 12th Floor
Riverside, California 92501-3634
Hours of Operation: 8:00 am to 5:00 pm
Monday through Friday

Desert Permit Assistance Center (Palm Desert)
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During a 60-day Draft EIR public review period, this Program EIR was distributed to responsible and trustee agencies, other affected agencies and interested parties, as well as to parties who requested a copy of the Draft Program EIR in accordance with PRC Section 21092(b)(3). In addition, the Notice of Completion of the Draft EIR (NOC) has been distributed as required by CEQA and forwarded to those who formally requested notices concerning information pertaining to either the Draft EIR or the GPA No. 960. Written comments on this Draft Program EIR should be addressed to:

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1.4 Issues to Be Resolved and Areas of Potential Controversy

A. Areas of Potentially Significant Impacts

Pursuant to Section 15123(2) of the State CEQA Guidelines, a summary section must address areas of controversy known to the Lead Agency (the County of Riverside), including issues raised by agencies and the public. In addition, pursuant to Section 15123(3) of the State CEQA Guidelines, a summary section must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects identified. Accordingly, each of these issues is discussed, below. For impacts and mitigation, see Table 1.0-B (Summary of Proposed Project Impacts and Mitigation) at the end of this section.

The Initial Study (Environmental Assessment No. 41788) prepared for GPA No. 960, the General Plan Update Project, identified potential environmental impacts related to the following issues:

- Land Use and Planning
- Population and Housing
- Aesthetics and Visual Resources
- Agricultural and Forestry Resources*
- Air Quality*
- Greenhouse Gases (added subsequent to NOP)
- Biological Resources
- Cultural and Paleontological Resources
- Geology and Soils
- Hazardous Materials and Safety
- Hydrology and Flooding
- Mineral Resources
- Noise*
- Parks and Recreation
- Public Facilities (including Utilities and Service Systems)
- Transportation and Circulation*
- Water Resources*

- Cumulative Impacts*

Based on the Initial Study, it was determined that potential impacts associated with the aforementioned issues required further evaluation in the Program EIR for GPA No. 960. Greenhouse gas reduction, a topic newly added to the State CEQA Guidelines in 2010, was also identified to be addressed. The Initial Study also determined that an evaluation of potential cumulative impacts resulting from development accommodated by the General Plan changes resulting from GPA No. 960 would be included in the EIR. The topics marked with an asterisk ("*") include one or more impacts found to be significant and unavoidable in the EIR. See Section 4.0 and Section 5.0 (Additional Required CEQA Topics) of the EIR for full details.

B. Topics of Generating the Most Public Interest and Areas of Controversy

A number of comment letters were received during the NOP period, from both public agencies and concerned members of the public. Numerous public comments and testimony were also presented (or submitted) at the various workshops and meetings held prior to circulation of the Draft EIR (see list under Section 1.3 C, later in this section). For a summary of the NOP comment letters received by the County of Riverside, see Subsection 2.3 in Section 2.0 (Introduction). A brief summary of comments received at the two formal public scoping meetings is also presented under Section 2.3. In broad strokes, the various comments received indicated the following general areas of interest, concern or controversy.

1. Open Space Preservation

Many of the comments presented by members of the public, particularly at GPAC meetings in 2008-2009, as well as in 2013, focused on concern for preservation of open space areas, both generally and specifically (around the San Jacinto Wildlife Preserve, for example). These comments were considered by Riverside County Planning Department staff while preparing the revisions to the General Plan, in particular to the Land Use and Administration Elements. These comments also informed the discussion and analyses performed in EIR No. 521, in particular for Section 4.4 (Aesthetics and Visual Resources) and Section 4.8 (Biological Resources), among others.

2. Greenhouse Gas Emissions, Carbon Reduction and Global Climate Change

As a field of newly emerging science and regulation, particularly by the State of California, this topic brought comments from several public speakers and agencies. Concerns tended to focus on whether or not the County of Riverside would be able to reduce greenhouse gas emissions and how it would be accomplished. Comments also noted the need for a variety of "green" policies – that is, actions to institutionalize a conservation-based approach to energy and resource use, which includes reducing, reusing and recycling in a number of areas. Intense interest was also focused the preparation of a "Climate Action Plan," either as part of the General Plan or a separate stand-alone document, to fully establish Riverside County's plans for addressing greenhouse gases, carbon reduction and climate change. These comments were considered by Riverside County Planning Department staff while preparing the extensively revised Air Quality Element, as well as a proposed Climate Action Plan. These comments also informed the discussion and analyses performed in EIR No. 521, in particular for Section 4.7 (Greenhouse Gases), Section 4.6 (Air Quality) and Section 4.10 (Energy Resources), among others.

3. Local and Regional Traffic

A perennial concern for how any proposed changes to the General Plan would affect local and regional traffic levels and circulation patterns was expressed by several speakers and comments. Members of the public tended to focus on traffic and circulation issues closest to their home communities; public agencies, particularly municipalities in and adjacent to Riverside County, tended to focus on the potential traffic effects to their jurisdictions and on interagency coordination. These comments were considered by Riverside County Transportation Department staff while conducting the extensive countywide traffic modeling, as well as while preparing proposed roadway network revisions and General Plan Circulation Element changes. These comments also informed the discussion and analyses performed in EIR No. 521, such as for Section 4.8 (Transportation and Circulation) and Section 4.7 (Greenhouse Gases), among others.

4. Development Capacity of the County

An issue raised and discussed intensely at the GPAC meetings in 2008-2009 was how to plan for the appropriate level of build out (future development) for the County of Riverside. That is, determining how unincorporated Riverside County should look in 50-plus years when the developable land in the county has been "built out." The amount of houses, businesses and industry permitted within Riverside County in the future will directly affect the welfare and quality of life of those living, working and visiting in Riverside County. It also dictates that infrastructure and facility needs for those residents and workers – things like roads and highways, schools (and teachers), water supplies, parks and even landfills and sewer treatment plants to handle the inevitable wastes that arise from human habitation. It also directly affects the economic success of Riverside County residents and workers, as well as the commercial and industrial ventures themselves.

As part of the General Plan update process, Riverside County Planning Department staff developed a number of new development scenarios for areas slated for "additional study" under the 2003 RCIP General Plan. These were predominantly rural or other undeveloped areas in which future intensification was envisioned in 2003, but could not be planned explicitly due to time constraints. The various "Rural Village Overlay Study Areas" that result are an example. Each "study area" was examined to determine the future development level (if any) reasonable for the locale based on accessibility (roads), infrastructure (availability of water, sewer, etc.) and, in particular, its suitability relative to the surrounding area (existing neighboring uses and development patterns, habitat and environmental constraints, etc.).

Once formulated, Planning staff presented a number of possible regional development scenarios to the GPAC for discussion, refinement and direction. Consensus amongst the GPAC membership was used to direct the development scenarios ultimately incorporated into the proposed General Plan as part of GPA No. 960 (and analyzed in EIR No. 521). Accordingly, the General Plan Land Use Element, as well as details in the applicable Area Plans, was updated to reflect these results. These development proposals (or reductions) were also incorporated into the build out development scenarios analyzed and discussed in EIR No. 521, in particular for Section 4.2 (Land Use), Section 4.3 (Population and Housing) and Section 4.17 (Public Facilities), among others.

1.5 Summary of Alternatives, Environmental Impacts and Mitigation

One of the cornerstone functions of CEQA is that it "establishes a duty for public agencies to avoid or minimize environmental damage where feasible" (California Code of Regulations [CCR] Section 15021(a)). Accordingly the

CEQA State Guidelines (CCR Section 15021(a)(2)) specify that, "A public agency should not approve a project as proposed if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment."

The second part of this directive is met by Sections 4.2 through 4.19 of this EIR, which address a wide variety of environmental issues and include mitigation measures where feasible to lessen identified significant impacts. The first part of this directive, to identify "feasible alternatives" to the project, is addressed in Sections 6.2 through 6.4. Lastly, Section 6.5 provides a summary of the "environmentally superior alternative" and conclusions as to each alternative's ultimate feasibility compared to that of the proposed project, GPA No. 960, and the "preferred alternative" is selected.

A. Alternatives

Pursuant to CEQA, a range of possible alternatives was developed to reflect the stated project objectives and project significant impacts. The selection process is summarized in Table 6.0-A of Section 6.0 for the following basic alternative proposals.

Added Community Centers Alternative: This alternative addresses the effects of growth and development pressure by proposing to transfer development intensity planned for lands identified for future open space conservation into a series of additional community centers along transportation corridors. The overall number of residential units projected for unincorporated Riverside County would remain the same, but their locations, and possibly their densities, would change.

Agricultural Emphasis Alternative: This alternative addresses the effects of development pressure on agricultural resources by proposing a scenario in which removal of land from the Agricultural Foundation would only be allowed every eight years. Within the Eastern Coachella Valley Area Plan, future conversions would be limited to 50% of the proposed site; the remainder of the site would be required to be placed into permanent agricultural easements.

Reduced Rural Villages Alternative: This alternative would be similar to the changes to Rural Village Overlays (RVOs) proposed under GPA No. 960 in terms of eliminating RVO study areas (RVOSAs). However, it would also include additional reductions in development potential through the deletion of the two new RVOs proposed as part of GPA No. 960. Specifically, both the existing "Study Area" designations and the proposed new RVOs for the Good Hope and Meadowbrook areas would be deleted. Land uses would remain in their existing LUDs, with no alternative development potential added through the RVO overlay function. Unlike GPA No. 960, it would also omit several Policy Areas (either existing or proposed under GPA No. 960) that provide for future urbanization within specific areas, including in Anza in the hills of southern Riverside County and the Vista Santa Rosa region in the Coachella Valley, among others.

Green Economy Alternative: This alternative would entail revisions to the General Plan to encourage the development and utilization of the green (renewable) energy resources available in unincorporated Riverside County (e.g., wind, solar and geothermal). It would allow the transfer of development density/intensity from lands of high fire hazard into areas with alternative energy availability. The overall number of residential units and business uses (commercial and industrial) projected for unincorporated Riverside County would remain the same, but their locations, and possibly their densities, would change.

No Build/No Growth Alternative: This alternative is one type of "no project" scenario addressed by CEQA for comparison purposes. It would entail no growth occurring at all within unincorporated Riverside County (i.e., the County of Riverside would not approve any additional development applications). The only growth occurring

in Riverside County would be within its cities, which are assumed to build out according to their General Plans. As a result, the environmental baseline of Riverside County would be preserved in many areas, except where adversely affected by the growing demands of the cities within Riverside County (e.g., water use, traffic generation, land annexations, etc.).

No Project/Status Quo Alternative: This alternative is the key CEQA-mandated "no project" alternative called out in CCR Section 15126.6(e). For this EIR, the scenario assumes that GPA No. 960 is not adopted and that the existing RCIP General Plan (adopted in October 2003, and as amended through 2010), remains the guiding document dictating future growth within unincorporated Riverside County. Accordingly, this alternative can also be said to represent the "status quo."

B. Alternatives, Reduction of Significant Environmental Impacts and Environmentally Superior Alternatives

Build out of the General Plan, as it would be if updated pursuant to the proposed project, GPA No. 960, would have significant, unavoidable adverse impacts on: agriculture, air quality, noise, transportation and traffic, water supplies and growth inducement. There would also be a variety of other cumulatively considerable effects. As indicated in Table 6.0-A of Section 6.0, only one of the alternatives (Reduced Rural Villages Alternative) was found to address nearly all of the areas of significant project impacts and not result in any new (substantially greater) environmental impacts within unincorporated Riverside County. All of the other alternatives ha~~s~~*ve* substantial new and/or greater impacts, though most also had areas of substantially fewer impacts as well. The end results of each alternative's analysis are summarized below.

No Build/No Growth Alternative: This alternative, one of the "no project" scenarios addressed by CEQA for comparison purposes, would entail no growth occurring at all within unincorporated Riverside County (i.e., the County of Riverside would not approve any additional development applications). The only growth occurring in Riverside County would be within its cities, which are assumed to build out according to their General Plans. Although the No Build/No Growth Alternative does include some artificial assumptions in order to "preserve the physical environment," it is nonetheless included among the alternatives considered because of its utility in providing a clear examination of the effects of future growth in the cities within Riverside County, as well as the surrounding cities and counties. Though an admittedly extreme example, it specifically serves to paint a clear picture of how these areas' growth will themselves affect the unincorporated portions of Riverside County, even in the absence of any other unincorporated growth. Under this alternative, the environmental baseline of Riverside County would be preserved in many areas, except where adversely affected by the growing demands of the cities within Riverside County (e.g., water use, traffic generation, land annexations, etc.).

As noted in Table 6.0-A, this alternative would substantially lessen many of the significant environmental impacts associated with the project-updated General Plan. However, it would also result in significant impacts in relation to transportation system effectiveness (e.g., provide inadequate Levels of Service for roadways) and water resources (particularly due to increased demand on groundwater basins). It would also generate two new significant impacts within Riverside County in relation to inconsistencies with greenhouse gas reduction plans (particularly AB 32) and energy efficiency plans (particularly Title 24). Lastly, it would also escalate growth pressures within adjacent cities and counties; some of which could cause significant new (or worsened) impacts in these jurisdictions, for example increased strain on existing community services and facilities. See Section 6.4.A for full details.

Taken together, the substantial reduction in significant impacts associated with this alternative would make it appear to be the environmentally superior alternative addressed under CEQA. However, Section 15126.6(e)(2) of

the State CEQA Guidelines notes, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

No Project/Status Quo Alternative: As noted above, CEQA specifies analysis of a no-project alternative that would be "reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with the available infrastructure and community services." (See State CEQA Guidelines, Section 15126.6(e).) Accordingly, the No Project/Status Quo Alternative examines the environmental effects associated with abandoning the proposed project, GPA No. 960, and 'doing nothing,' that is, allowing unincorporated Riverside County to continue to develop as planned under the existing Riverside County General Plan. Again, as with the first alternative, analysis of this alternative provides a look at the environmental cost of maintaining the status quo. As such, this alternative serves as a lens for highlighting the environmental implications for approving (or denying) the proposed project.

As noted in Table 6.0-A, this alternative would not substantially lessen any of the significant environmental impacts associated with the project-updated General Plan, mainly because this alternative, which represents build out of the existing General Plan, would result in more people, houses, jobs, economic land uses, vehicle miles traveled and related effects. Specifically, General Plan build out with implementation of project (GPA No. 960) changes would result in ~~a reduction of~~ roughly 2-6% fewer people, homes, jobs and economic land uses as compared to the existing General Plan. Accordingly, analysis predicts significant impacts largely in line with those forecast for the project-updated General Plan, except with a number of new significant impacts, including some substantially greater than those of the project. These new substantial impacts include: changes to existing visual character, increased greenhouse gas emissions, effects to biological resources outside of areas under an adopted MSHCP and inefficient use of energy. See Section 6.4.B for full details.

Because this alternative would have substantial environment effects in several key areas, including four new significant impacts, it is not deemed the environmentally superior alternative.

Agricultural Emphasis Alternative: Between 2000 and 2006, Riverside County loss roughly 30% of its existing agricultural lands to conversions made in the face of increasing development pressure. Although agriculture is Riverside County's largest industry in terms of dollars, agricultural decline continues as urban uses encroach upon agriculture operations and economic pressures (including the price of water supplies) make conditions ever more tenuous for Riverside County's farmers and ranchers. Not surprisingly, one of the significant impacts of build out of either the existing or updated General Plans is loss of agricultural lands to non-agricultural uses and encroachment of non-agricultural uses into agricultural areas. This alternative is proposed as a means for addressing (lessening) this significant impact by preserving existing farmlands and increasing overall agricultural uses within unincorporated Riverside County by roughly 250,000 acres. In addition, it also addresses cumulatively significant wildfire hazards by shifting roughly 25,000 future homes in remote, wildfire-prone rural areas to more accessible urban/suburban regions.

Overall, as indicated in Table 6.4-E, the Agricultural Emphasis Alternative would cause slightly more significant environmental impacts in the growing urban and suburban portions of unincorporated Riverside County, while substantially reducing many (but not all) impacts associated with spatial effects in the rural portions of Riverside County. In several key areas, this alternative would avoid, minimize or reduce impacts found significant under the proposed project to less-than-significant levels. These include: conversion of state-designated farmlands and encroachment or conflicts with existing agricultural uses; exposure of people or structures to wildland fire risks; and, facilitation of environmental effects due to the encroachment of development into isolated or remote areas.

With its greatly reduced rural development footprint, it would also avoid cumulatively significant cumulative impacts to archeological and paleontological resources, hazards (particularly in interface and wildland areas),

demand for fire protection services and effects on water resources and groundwater basins. The smaller development footprint means cumulative effects on existing hydrology and stormwater drainage systems would also be less than significant. This alternative would also avoid significant growth-inducing effects resulting from facilitating encroachment into isolated or remote areas. However, because this alternative restricts agricultural conversion, it would hinder (reduce) significant growth-inducing effects by creating (rather than removing) obstacles to population growth within Riverside County.

Lastly, this alternative would also result in several substantially greater (worse) environmental impacts, including: greatly increased demand for water, both imported and local (groundwater); increased demand for energy (electricity and natural gas) due mainly to increased agricultural uses (particularly water pumping) and ag-related economic uses (dairies, commercial, industrial, etc.); and, increased energy use and increased off-road equipment and vehicle operations associated with agricultural uses, contributing to substantial cumulative greenhouse gas emissions. And, lastly, environmental impacts associated with the need for new or expanded water infrastructure. Except for the greenhouse gas emissions, however, none of these cumulatively significant impacts are new as compared to those of the project-updated General Plan.

Taken together, this alternative adequately addresses four of the seven areas of significant effects associated with the proposed project, including having substantial improvements over the project in terms of both agricultural impacts and on-road vehicle traffic levels. It would also, however, be associated with three areas of more severe environmental impacts, including increased water demand and increased cumulative impacts in several areas. Although an improvement over the project in some ways, this alternative would not be the environmentally superior alternative due to the severe limitations and significant environmental impacts that would result in conjunction with the greatly increased water demand under this alternative. For these reasons, this alternative was not deemed the environmentally superior alternative.

Added Community Centers Alternative: Sprawling patterns of suburban growth in car-centric Southern California tend to result in increased traffic, noise and air pollution as vehicle travel increases within the far-flung new communities. Even with the advanced planning called for under the existing or project-updated Riverside County General Plans, impacts due to traffic and circulation, as well as attendant air quality and noise impacts, will be significant and unavoidable. This alternative is proposed as a means for addressing (lessening) this significant impact through the incorporation of an increased number of Community Centers. As defined under the existing General Plan, community centers are purposefully designed to provide land uses and activities designed in an "integrated fashion to create a dynamic urban environment that acts as the center of activity for the surrounding area." To accomplish this, community centers are designed to accommodate "a variety of residential densities, non-residential intensities and public spaces...integrated in a manner that promotes pedestrian activity and minimizes the dominance of the automobile."

Rather than increasing the overall build out of unincorporated areas, this alternative would represent (as compared to the existing and proposed GPA No. 960) a more concentrated pattern of development intensity. To accommodate these increases, development intensity within reserve areas for the two MSHCPs would be redistributed into community centers throughout Riverside County. Thus, under this alternative the overall size of the development footprint within unincorporated Riverside County would decrease, but the overall residential density would nearly double because of increases in lands designated as community center (CC) or mixed use planning area (MUPA) through overlays.

In total, roughly 1,200 acres of additional CC/MUPA were assumed for western Riverside County along the I-15 and Interstate 215 in the Perris Valley, in particular. In addition, 2,400 acres of CC/MUPA were placed out in eastern Riverside County, which has traditionally seen lower growth overall than to the west due to its more remote location relative to the job centers of Greater Los Angeles and Orange County. In total, roughly 21,600

new high- to very high-density dwelling units plus 10,500 medium-high to high-density units would be added throughout Riverside County, accommodating an increase of 12,600 people. With an equal amount of retail-commercial and associated commercial services added as well, over 90,000 additional jobs would be created.

Overall, as indicated in Table 6.4-H, the Added Community Centers Alternative would enable increased growth in urban cores while lessening some the significant effects associated with the proposed project. It addresses nearly all of the significant environmental impacts identified for the project and greatly reduces a number of effects, particularly spatial impacts, as a result of the reduced development footprint.

Some, but not all, of the project's significant cumulative impacts would be lessened under this alternative, however these effects are offset by the localized increases that would result within the urbanized Community Centers proposed. Specifically, due to the increase in housing, population, jobs, traffic and associated economic activity, this alternative would result in substantial individual and/or cumulative impacts in a number of areas, including greenhouse gas emissions and traffic congestion. Also, because of the disproportionate effects of growth in urban areas, this alternative would also have substantially greater impacts on existing parks and recreational facilities and cause growth effects triggering the need for additional facilities. It would also have growth-inducing effects on Riverside County, its cities and the surrounding communities, cities and counties. In all other areas, significant impacts either individually or cumulatively would be generally similar to those associated with build out of the General Plan pursuant to the project, GPA No. 960.

Taken together, this alternative addresses six of the seven areas of significant effects associated with the proposed project. However, it only substantially lessens or avoids significant impacts for one of the seven (agriculture); for air quality, noise and growth inducement, this alternative's impacts are generally similar to those of the project, although an improvement in many ways over the project, because of the absolute limiting effect of the finite water supply availability, as well as the increase in greenhouse gas emissions and traffic congestion. For these reasons, this alternative was not deemed the environmentally superior alternative.

Green Economy Alternative: In the past decade, modern society has become increasingly focused on the need to use the planet's resources wisely and efficiently. In particular, in conjunction with AB 32, California's Global Warming Solutions Act of 2006, the State of California has initiated a number of plans to reduce greenhouse gas emissions, including an initiative directing California to be obtaining a third of its electricity through alternative "green" methods by 2020. This legislative mandate has helped fuel the impetus for the growing green energy industry in the state. With its expansive open desert noted for 360 days of sunshine a year (in Blythe), bracketed by the famously windy San Gorgonio Pass to the north and the geothermal hot springs around the Salton Sea to the south, Riverside County offers unparalleled opportunities for green alternative energy generation.

Accordingly, this alternative aims to capitalize on Riverside County's renewable energy opportunities for wind, solar and geothermal by creating green economy jobs and improving the jobs-housing balance within Riverside County. It would accomplish this by proposing density transfers in which half the remaining rural residential (OS-RUR) lands are reallocated to Public Facilities (PF) to accommodate green energy generating land uses, such as commercial wind and solar energy generation, as well as geothermal or biomass, as opportunities arise. A portion (10%) of the remainder would also be allocated to additional light industrial (LI) land uses to provide additional related and ancillary services, manufacturing and other complimentary uses. Lastly, another 50% would be shifted to open space-conservation (OS-C) to provide buffers around energy uses and also to reduce the number of residences in remote, fire-prone areas (i.e., OS-RUR designated properties in interface/wildlands).

The result of this shift would greatly increase the jobs available within Riverside County, ideally allowing more residents to work in closer proximity to their homes, rather than commute to distant cities or counties. This would improve traffic on the region's freeways and main arteries, as well as greatly reducing the air pollution and

traffic noise generated in our communities. In addition to reducing energy generated from non-petroleum sources, this alternative would also aid in reducing greenhouse gas emissions by reducing commuter travel. (Vehicle trips are the number one source of greenhouse gas emissions in California.) Through these means, the Green Economy Alternative addresses a number of significant, unavoidable impacts associated with the project, in particular those resulting related to air pollution, noise, traffic and energy consumption within unincorporated Riverside County.

Overall, as indicated in Table 6.4-J, the Green Economy Alternative seeks to provide the planning needed to help California, and the country, transition from the existing, petroleum-based economy to a new, cleaner green economy based on alternative energy generation and related industries. Despite the decreased reliance on fossil fuels, however, the analysis herein finds that this alternative would have environmental impacts of similar severity to those forecast for build out of the General Plan as updated per GPA No. 960. In certain areas, in fact, as summarized in Table 6.0-A, this alternative would have substantially greater significant impacts driven mostly by the large increase in jobs created in Riverside County.

While it would reduce certain *regional* impacts (such as greenhouse gases and, possibly, traffic congestion), it would do so at the expense of substantial increases in cumulative environmental impacts within Riverside County itself. In particular, key areas adversely affected are those associated with the increased number of commuters heading into Riverside County for work: increased traffic and congestion (due to increased vehicle miles traveled within Riverside County), higher ambient noise levels (increased due to roadway traffic noise), increased localized and regional air pollution and greenhouse gas emissions. This alternative would also result in specific new significant impacts to viewsheds and aesthetics (including scenic highways) and to roadways and intersections where additional traffic volumes would cause LOS ranges to be exceeded above and beyond those already identified by either the existing General Plan or for this proposed project (i.e., those addressed in Section 4.18). Lastly, even though not new significant impacts, water-related impacts to domestic and groundwater supplies would also be substantially greater under this alternative.

Taken together, this alternative only addresses four of the seven areas of significant effects associated with the proposed project. Although an improvement in many ways over the project, because of the increase in jobs and the improved jobs-to-housing balance, there are substantially greater adverse effects associated with greenhouse gases, traffic and aesthetics. Even though this alternative meets all of the project objectives, it does so at the expense of greater environmental effects. For all of these reasons, this alternative would not be deemed the environmentally superior alternative.

Reduced Rural Villages Alternative: This alternative was conceived to address the significant effects of continued urbanization by limiting the plans designed to accommodate it in the General Plan. Accordingly, this alternative proposes to address environmental effects stemming from population growth by limiting the planned RVOs, and other overlays and policy areas to be incorporated into the General Plan as a result of GPA No. 960. Specifically, this alternative proposes to eliminate the two RVOs proposed under this project (Good Hope and Meadowbrook), leaving the areas with only their existing underlying rural LUDs. To counter urbanizing effects beyond the RVOSAs, this proposal also includes deleting other proposed urbanization changes from GPA No. 960, such as the Northeast Business Park Overlay, most of the Lake Elsinore Environs Policy Area (i.e., Lakeland Village) changes and also existing and proposed policies for the Anza and Aguanga areas in southern Riverside County. In addition, areas of potential future urbanization or intensification in association with the Coachella Valley, specifically Chiriaco Summit and Vista Santa Rosa, would also be eliminated under this alternative.

Overall, as indicated in Table 6.4-L, the Reduced Rural Villages Alternative would likely cause slightly fewer significant environmental impacts within the unincorporated portions of Riverside County as a result of the small (1-4%) decrease in the number of houses, people, jobs and economic uses proposed. These slight reductions

mean that impacts associated with this alternative would be largely the same or substantially similar to those forecast for build out of the General Plan as amended pursuant to the project, GPA No. 960.

Particularly as a result of fewer vehicle miles traveled in Riverside County, impacts associated with traffic, noise and air quality would be lower under this alternative. A lower population at build out would also mean that risks to people, such as from seismic, flood, air travel and hazardous material use, for example, would be slightly lower. Impacts resulting from the presence of people, such as demand for parks, schools, landfills, hospitals and other public services, as well as for water, wastewater treatment, electricity, roads and other infrastructure, would also be correspondingly reduced. In most cases, however, incremental impacts in these areas would still be cumulatively substantial.

Lastly, this alternative does not adequately address significant adverse effects to agriculture because the reduced potential for urbanizing development in key locations would contribute to an increase in development within areas that would otherwise remain rural and undeveloped, particularly within wildland and interface portions of Riverside County. Nor does it provide adequate plans for handling future urbanizing growth pressures and, as a result, would tend to lead to sprawling growth within the rural portions of Riverside County, particularly within the Rural Community Foundation.

In terms of environmental impacts, this alternative was found to substantially lessen traffic impacts because of the reduced urban areas allowed. It was also found to successfully address, though not substantially lessen, impacts in six areas of significant effects associated with the proposed project. It was not found to cause any new significant impacts or substantially increase any already expected to be significant pursuant to project analyses. Although a slight improvement over the project, because of the reduced urban development accommodated under this alternative, it would induce significant growth within cities and adjacent counties as a result of the unmet growth pressures within the unincorporated areas.

Nevertheless, notwithstanding these impacts outside unincorporated Riverside County, this alternative does reduce, either slightly or substantially, a majority of the significant adverse impacts associated with the project (i.e., build out of the General Plan pursuant to GPA No. 960). For this reason, this alternative is considered the environmentally superior alternative.

C. Preferred Alternative

Although the environmentally superior alternative was identified above, the ultimate suitability of the alternatives must still be weighed against their ability to successfully achieve the stated project objectives. While CEQA notes that not all of the objectives need be attained, per CCR Section 15126.6(a)), the alternative selected must still "feasibly attain most of the basic objectives of the project" while also avoiding or substantially lessening the significant effects of the project. Accordingly, each of the alternatives was examined relative to these standards and the stated project objectives to determine whether any among them is the preferred alternative (instead of the proposed project, GPA No. 960) for achieving build out of the General Plan. These conclusions are summarized below.

No Build/No Growth Alternative: In terms of the project's stated objectives, this alternative does not satisfy several (see Table 6.0-A). It would not provide a suitable plan for further progress within Riverside County since it posits no growth and no development. Nor would it address new needs, since it pushes all new growth into the cities where Riverside County's General Plan does not apply. It would provide updated technical data, simply by definition, but would not provide any updated land uses within Riverside County (since no further development would be permitted). And, most particularly, it does not further the Riverside County Vision in any way since it does not permit or promote any continued progress within Riverside County. Thus, in total, this alternative

meets only one of five of the objectives of the project and it, therefore, is not considered an acceptable means for achieving the stated project objectives. For all of these reasons, despite being found environmentally superior to the proposed project, the No Build/No Growth Alternative is not deemed the preferred alternative.

No Project /Status Quo Alternative: In terms of meeting project objectives, this alternative does not satisfy several. It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. It does not address the updated regulations (e.g., AB 32 and greenhouse gas reduction planning). Thus, this alternative does not address new-needs objective. It would provide updated technical data, simply by definition. Lastly, it does not further the Riverside County Vision in any way since it does not enhance or extend the continued progress within Riverside County. Since this alternative meets only one of five of the objectives of the project, it is not considered an acceptable means for achieving the stated project objectives. For all of these reasons, the No Project/Status Quo Alternative is not deemed the preferred alternative.

Agricultural Emphasis Alternative: In terms of the project's stated objectives, this alternative does not satisfy several. It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. It would provide updated technical data, simply by definition and would likewise address updated regulations, such as AB 32 and Title 24, for similar reasons. It would not, however, fully comply with AB 32 due to the substantial increase in greenhouse gas emissions associated with this alternative. Nevertheless, this alternative could be said to adequately meet the address new needs objective. It does not, however, further the Riverside County Vision in regards to growth since the restrictions on agricultural conversion would significantly hinder (not enhance or extend) continued progress within Riverside County. Overall, this alternative only meets two of five of the objectives of the project, thus it is not an acceptable means for achieving the stated project objectives. For all of these reasons, the Agricultural Emphasis Alternative is not deemed the preferred alternative.

Added Community Centers Alternative: In terms of the project's stated objectives, this alternative would satisfy all but one. It would provide a suitable plan for further progress within Riverside County, since it provides for additional urban development in Riverside County. It would provide updated technical data, simply by definition. It also would address the updated regulatory environment, even though it would require CAP revisions to reduce to the additional greenhouse gas emissions associated with this alternative. Nevertheless, it could still be said to adequately meet the new-needs objective. It also may further the Riverside County Vision by allowing higher growth in certain urban cores, extending or enhancing continued progress within Riverside County. The only objective not met is that it does not include any LUD updates, and thus does not address the updated land use objective. In total, although this alternative meets four of the five objectives of the project, it does so while increasing growth and localized urban impacts beyond that of the proposed project or existing General Plan. Thus, this alternative is not deemed the favored means for achieving the stated project objectives. For all of these reasons, the Added Community Centers Alternative is not deemed the preferred alternative.

Green Economy Alternative: In terms of the project's stated objectives, this alternative appears to satisfy all of them. It provides a suitable plan for further progress within Riverside County, particularly in terms of increasing jobs availability. Even though it does not update the RVO study areas identified in 2003 for future planning specifications, it provides an alternate plan for future development and would also provide LUD updates, thus it does addresses the updated land use objective. It would provide updated technical data, simply by definition. And, despite increased greenhouse gas emissions, it would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning). Thus, it would adequately meet the address-new-needs objective. Lastly, it would further the Riverside

County Vision, since it proposes to greatly increase jobs in the region, helping to balance a region that traditionally has more homes than jobs, while preserving open space and the quality of life for Riverside County residents. This new economy would serve to enhance and extend the continued progress within Riverside County. In total, although this alternative meets all of the five objectives of the project, it does so while increasing growth and localized urban impacts beyond that of the proposed project or existing General Plan. For all of these reasons, the Green Economy Alternative is not deemed the preferred alternative.

Reduced Rural Villages Alternative: In terms of the project's stated objectives, this alternative does adequately meet 60% of them. It would provide LUD updates and thus addresses the updated land use objective. It would also provide updated technical data, by definition, and would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons. Thus, it would meet some of the objective for meeting new needs. It would not, however, provide future planning necessary to address and accommodate the new needs related to urbanizing growth pressures on rural areas located near urban fringes. As such, it also would not accommodate further progress within Riverside County. Rather than providing plans to handle future demand for urbanizing uses within unincorporated Riverside County, this alternative actually limits further progress in terms of future development necessary to meet population growth forecast for Riverside County. Similarly, it also would not further the Riverside County Vision, as its limits on urbanization in growing rural-fringe areas would limit, rather than enhance or extend, continued progress within Riverside County. However, because of the limitations on future urbanization inherent in this alternative, it only meets two of five of the project objectives (40%). For this reason, despite being environmentally superior, this alternative would not be an acceptable means for achieving the stated project objectives. For all of these reasons, the Reduced Rural Villages Alternative is not deemed the preferred alternative.

D. Conclusions

As the result of the data and analyses presented in Section 6.0, it was determined that two alternatives exist that would be environmentally superior to the proposed project in terms of providing a scenario for guiding ultimate build out of the Riverside County General Plan. One, however, was the No Build/No Growth Alternative, which met only a single project objective. The second environmentally superior alternative was the Reduced Rural Village Alternative. While not without significant adverse environmental impacts, this alternative addresses the widest gamut of project impacts with the fewest new significant impacts. It would not, however, meet more than two of the stated project objectives.

Thus, as a result of this alternatives analysis, it was determined that the proposed project, GPA No. 960, remained suitable as the preferred project. It would achieve all of the stated project objectives while minimizing, to the extent feasible, the significant, unavoidable environmental impacts. Further, certain beneficial aspects of the alternatives analyzed have been incorporated into the proposed project. Specifically, GPA No. 960 proposes to eliminate some of the Rural Village Study Areas in which future urbanization was found to be unsuitable, associated with too many adverse environmental effects and/or to be otherwise infeasible (for example, due to lack of water and infrastructure, topography, or seismic hazards). In this way, GPA No. 960 has incorporated impact-reducing aspects of the Reduced Rural Villages Alternative in order to ensure the most environmentally suitable project alternative goes forward for consideration by the decision-makers of Riverside County. For all of these reasons, the project, GPA No. 960, remains the preferred alternative for achieving build out of the Riverside County General Plan pursuant to the stated project objectives.

E. Impacts and Mitigation for GPA No. 960

For the proposed project, a summary of environmental impacts, mitigation measures and the level of significance after mitigation is provided in Table 1.0-B on the following pages. The information in this summary is presented in a matrix format and briefly summarizes each of the environmental impacts associated with future development accommodated by GPA No. 960, as well as the existing and proposed General Plan policies and any new CEQA-specific mitigation measures recommended to reduce or avoid each potentially significant environmental impact. Lastly, the levels to which the policies and mitigation measures are expected to reduce the potentially significant environmental impacts are also indicated. Specifics on each category of environmental concern can be found in the corresponding parts of Section 4.0 of the EIR. Further details on other CEQA issues, such as significant unavoidable and irreversible effects, cumulative effects and growth-inducing effects, among others, are addressed in EIR Section 5.0 (Additional Required CEQA Topics).

Table 1.0-B: Summary of Proposed Project Impacts and Mitigation

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
4.2 Land Use		
Impact 4.2.A - Physically Divide an Established Community: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. None of the proposed changes, however, are in a location or of an extent that would physically divide an established community. Thus, this impact would be less than significant. Moreover, compliance with existing regulatory programs, Riverside County ordinances and existing General Plan policies would further reduce the already insignificant impact to communities.	**General Plan Policies:** LU 1.1, 1.3, 1.5, 1.6, 1.8, 2.1, 3.1, 5.4, 7.6, 9.1, 9.4, 15.2, 21.4, 25.2, 28.6, 28.9, 30.3, 30.4, 30.6, 31.1, 31.2, 31.3 and 36.1; C 1.1, 1.2, 1.3, 1.4, 1.7, 3.11, 3.12, 3.17, 3.21, 3.30, 3.31, 4.1, 4.3, 4.6, 4.8, 4.9, 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 7.4, 7.6, 7.8, 8.5, 8.7, 15.3, 15.4, 20.9 and 20.10; OS 8.1, 17.1, 17.2, 17.3 and 18.1	Less than significant.
Impact 4.2.B - Conflict With Environmental Land Use Policies Intended to Avoid or Mitigate an Environmental Effect: The proposed project contains new and revised policies, maps and data intended to clarify and enhance, not conflict, with the Riverside County General Plan, Riverside County ordinances and other regulatory programs, including those items adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant. Moreover, compliance with existing regulatory programs and General Plan policies would further reduce the already insignificant impact.	**County Ord. No.s:** 448 and 576 **General Plan Policies:** LU 1.8, 5.4, 15.2, 15.8, 31.1 and 31.2; OS 17.1, 17.2, 17.3 and 18.1	Less than significant.
Impact 4.2.C - Conflict With Any Habitat Conservation Plan or Natural Community Conservation Plan: This impact is analyzed under Impact 4.8.6 of Section 4.8 (Biology). To summarize, this project does not include any General Plan changes that would preclude or hinder the Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) in effect within Riverside County. Additionally, future development accommodated by the proposed General Plan changes would be required to comply with all applicable HCP requirements and fully analyze, avoid and develop adequate mitigation for any significant biological effects prior to project approval or construction. As such, this project would not conflict with any applicable HCP or NCCP.	***See Impact 4.8.E.***	Less than significant.
4.3 Population and Housing		
Impact 4.3.A - Induce Direct or Indirect Population Growth: Future development consistent with the project would affect population growth both directly and indirectly. Overall, in terms of direct growth, the project's land use changes would serve to limit and slightly reduce the development capacity of Riverside County, yielding 1.4% less population growth than that projected for the existing General Plan. Projected reductions in dwelling units (- 2.0%) and, in particular, jobs, which would be reduced by 5.6%, would also indirectly limit population growth. Thus, overall growth rates associated with the project would not be increased over those proposed and planned for in the existing General Plan. Overall, the project represents a reduction in county capacity, yielding covers population growth forecasts, both compared to the existing General Plan and to current SCAG (2008 RTP) projections. Since the project's build out projections are for less population, housing and jobs than forecast under the existing General Plan and existing regional plans (SCAG RTP, etc.), project impacts on population growth, both direct and indirect, would be less than significant. Moreover, compliance with existing General Plan policies would further reduce the already insignificant impact associated with population growth.	**General Plan Policies:** LU 5.1, 5.2, 8.1 and 9.4; C 1.1, 1.4, 1.5, 2.4, 3.16 and 7.9	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Impact 4.3.B - Displace Residential Units: The project includes revisions to the existing General Plan that would affect the future development capacity of Riverside County. Future development pressure could result in redevelopment of existing uses, particularly in rural areas (e.g., agricultural lands and large-lot rural residential) and on under-utilized urban and suburban parcels. However, aerial analysis indicates that none of the areas proposed for land use changes under GPA No. 960 contain substantial numbers of existing houses whose loss would necessitate construction of replacement housing elsewhere. Thus, the project's effects on existing housing would be less than significant. Moreover, compliance with existing regulatory programs, including existing General Plan policies, would further reduce this already insignificant impact to housing inventory.	**General Plan Policies:** LU 8.1 and 9.4; C 2.4 and 7.9	Less than significant.
Impact 4.3.C - Displace People: The project includes revisions to the existing General Plan that would affect the future development capacity of Riverside County. In general, future development pressure could result in redevelopment of existing uses, particularly in rural areas (e.g., agricultural lands and large-lot rural residential) and on under-utilized urban and suburban parcels. However, none of the areas proposed for land use changes under GPA No. 960 contain substantial numbers of existing homes whose loss would displace substantial numbers of residents. Thus, the project's effects on residents would be less than significant. Moreover, compliance with existing General Plan policies would further reduce this already insignificant impact.	**General Plan Policies:** LU 8.1 and 9.4; C 2.4 and 7.9	Less than significant.
4.4 Aesthetics and Visual Resources		
Impact 4.4.A – Adversely Affect Scenic Vistas: Future development consistent with the changes proposed by GPA No. 960 would increase rural, suburban and urban uses in select portions of Riverside County, adversely affecting scenic vistas in some areas. Compliance with existing laws, regulatory programs, General Plan policies and existing Mitigation Measure 4.4.1A from EIR No. 441 help reduce potential impacts to scenic resources. Compliance with these, plus a new project-specific mitigation measure (4.4.A-N1) would ensure that future development accommodated by the project would have a less than significant impact on scenic vistas.	**Riverside County Ord. No.s:** 460 and 461 **Riverside County Policies:** Riverside County Design Guidelines **General Plan Policies:** LU 4.1, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 16.4, 16.5, 16.12, 19.1, 28.6, 28.10, 29.9, 30.8 and 31.5; C 5.3 and 19.1 **Existing EIR No. 441 Mit. Measures:** 4.4.1A **New Mitigation Measure 4.4.A-N1:** No development shall be approved for parcels without adequate legal access and adequate physical access. Adequate and accessible circulation facilities must also exist to meet the demand of the proposed land use.	Less than significant with mitigation.
Impact 4.4.B – Adversely Affect Scenic Resources Within State Scenic Highways: Future activities consistent with GPA No. 960 would increase development of rural, suburban and urban uses, potentially substantially damaging scenic resources in some areas. Compliance with existing regulatory programs, General Plan policies and existing Mitigation Measure 4.4.1A from EIR No. 441 would reduce potential impacts to scenic resources to less than significant.	**Riverside County Ord. No.s:** 348, 460 and 461 **Riverside County Policies:** Oak Tree Design Guidelines; Riverside County Design Guidelines **General Plan Policies:** LU 4.5; C 20.1; OS 9.3 and 9.4 **Existing EIR No. 441 Mit. Measures:** 4.4.1A.	Less than significant.
Impact 4.4.C – Adversely Affect Existing Visual Character: The existing visual character or aesthetic quality of some sites affected by the proposed project may be altered by future activities consistent with proposed GPA No. 960 land use changes. Compliance with existing regulatory programs, existing General Plan policies, existing Mitigation Measure 4.4.1A from EIR No. 441 and new project-specific Mitigation Measure 4.4.A-N1 would ensure that potential adverse impacts to visual character resulting from GPA No. 960 are less than significant.	**Riverside County Ord. No.s:** 348, 457, 460 and 461 **Riverside County Policies:** Riverside County Design Guidelines **General Plan Policies:** LU 4.1 and 14.8 **Existing EIR No. 441 Mit. Measures:** 4.4.1A **New Mitigation Measure 4.4.A-N1:** *(See Impact 4.4.A for text)*	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Impact 4.4.D – Cause Adverse Light and Glare Effects: Future development consistent with GPA No. 960 would introduce new sources of light and glare which would adversely affect day and/or nighttime views in some areas. Compliance with a variety of existing regulatory programs, including General Plan policies and existing measures from EIR No. 441, would ensure that light and glare impacts to views are less than significant.	**Riverside County Ord. No.s:** 348, 461, 655 and 915 **Riverside County Policies:** Riverside County Design Guidelines **General Plan Policies:** LU 4.1. and 14.6 **Existing EIR No. 441 Mit. Measures:** 4.4.2A, 4.4.2B, 4.4.2C, 4.4.2D and 4.4.2E	Less than significant.
Impact 4.4.E – Interfere with Nighttime Use of the Palomar Astronomical Observatory: Future development accommodated by GPA No. 960 would introduce new sources of light within 15-45 miles of the Palomar Observatory, which requires dark skies to function. New sources of light resulting from GPA No. 960 would also contribute incrementally to the overall skyglow of the region, which interferes with nighttime operations at the Observatory. Compliance with a variety of existing regulatory programs, including General Plan policies, Riverside County ordinances, Ordinance No. 655 (Regulating Light Pollution) in particular, and existing measures from EIR No. 441, would ensure that light impacts on operations at Palomar Observatory are less than significant.	**Riverside County Ord. No.s:** 348, 461 and 655 **Riverside County Policies:** Riverside County Design Guidelines **General Plan Policies:** LU 4.1 **Existing EIR No. 441 Mit. Measures:** 4.4.2A, 4.4.2B, 4.4.2C, 4.4.2D and 4.4.2E	Less than significant.
4.5 Agricultural and Forestry Resources		
Impact 4.5.A – Cause the Conversion of Designated Farmlands: The specific land use and policy changes proposed by the project, GPA No. 960, would adversely affect (i.e., result in the conversion of) only minimal amounts of State-designated Prime Farmland, Farmland of Statewide Importance and Farmland of Local Importance ("Farmlands") to a variety of non-agricultural uses. No Unique Farmland would be affected. Due to the very small areas involved, these impacts would be less than significant. Indirectly, the growth accommodated and facilitated by the project would result in additional development and infrastructure demand that would further conversion of designated Farmlands to urban uses and result in other changes in the existing environment leading to additional Farmland conversion. This indirect impact would be significant and unavoidable.	**Riverside County Ord. No.s:** 509 and 625 **General Plan Policies:** OS 7.1, 7.3 and 7.5; LU 20.1, 20.2, 20.4, 20.5, 20.6, 20.9 and 20.11	Significant and unavoidable.
Impact 4.5.B – Encroach On or Conflict With Existing Agricultural Uses: Future development pursuant to land use and policy changes proposed by the project, GPA No. 960, has the potential to result in conflicts with existing zoning, agricultural uses, lands subject to a Williamson Act contract or within a Riverside County Agricultural Preserve. It may also result in introduction of new urban uses within 300 feet of agriculturally zoned property. Indirectly, the growth accommodated and facilitated by the project would result in additional development and infrastructure demand that would further conversion of agricultural lands to urban uses, encroach on existing agricultural activities and mapped Farmlands, and result in other changes in the existing environment leading to additional Farmland conversion. This indirect impact would be significant and unavoidable.	**Riverside County Ord. No.s:** 509 and 625 **Riverside County Policies:** Resolution 84-526 - Rules and Regulations Governing Agricultural Preserves **General Plan Policies:** OS 7.1, 7.3 and 7.5; LU 20.1, 20.2, 20.4, 20.5, 20.6, 20.7, 20.8 and 20.11	Significant and unavoidable.
Impact 4.5.C – Adversely Affect Forest Lands and Forestry Uses: In Southern California, including Riverside County, climate and topography limit the types and locations of forest lands and their potential for commercial or industrial timber utilization. Accordingly, there are no existing or currently proposed zoning of forest land, timberland or Timberland Production Zones within Riverside County; and the project would not conflict with any of these. Woody biomass removal, a type of forestry utilized by utility companies and forest management agencies for fire safety purposes, occurs	**Riverside County Ord. No.:** 559 **Riverside County Policies:** Resolution 84-526 - Rules and Regulations Governing Agricultural Preserves **General Plan Policies:** OS 8.1, 8.2 and 9.4; LU 7.6 and 7.10	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
with Riverside County, but not within fixed locations. Nevertheless, forest lands do occur in scattered locations within Riverside County. Hence, future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in loss or conversion of forest land to non-forest uses or result in other changes in the existing environment which, due to their location or nature, could result in forest land conversion as well. Further, growth accommodated and facilitated by the project would indirectly result in additional development and infrastructure demand that would create additional potential for forest land conversion or encroach on incompatible uses. Compliance with existing and proposed regulations and policies would ensure forestry impacts are less than significant.		
4.6 Air Quality		
Impact 4.6.A – Cause Inconsistency With Air Quality Plans: As outlined in Section 4.3 (Population and Housing), future development associated with GPA No. 960 represents a reduction in county capacity and yields lower population growth forecasts, both compared to the existing General Plan and to current SCAG (2008 RTP) projections. Since air quality management plans (AQMPs) are developed using growth forecasts issued by the applicable regional association of governments (SCAG, etc.), a project that is consistent with the applicable growth forecast would generally be consistent with the AQMP. This is the case for GPA No. 960. Further, it includes a number of new policies and programs related to greenhouse gas reductions that would also improve air quality for a variety of criteria pollutants addressed in AQMPs. Compliance with existing regulatory programs, Riverside County ordinances and General Plan policies, as well as new ones included in GPA No. 960, would further reduce this impact by reducing conflicts with or obstruction of the AQMP. However, while the existing General Plan policies and new ones included in GPA No. 960 may reduce conflicts and obstruction of any AQMP, the combined emissions from all proposed General Plan development would exceed the SCAQMD and MDAQMD significance thresholds for criteria pollutants. Exceeding these thresholds has the potential to hinder the region's compliance with each AQMP. Therefore, this impact is significant and unavoidable.	**Riverside County Ord. No.s:** 706 and 726 **General Plan Policies:** LU 1.5, 2.1, 8.12, 11.1-11.4 and 13.1-13.4; C 1.2, 1.7, 4.1, 4.8, 9.2, 11.2, 11.4, 11.5, 11.7, 12.2, 13.1, 17.4 and 20.14; AQ 1.1-1.9, 2.3, 2.4, 3.2-3.4, 4.2-4.7, 5.1-5.4, 7.1-7.4, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 10.1-10.4, 11.3, 11.4, 13.1-13.3, 14.1, 14.2, 14.4, 15.1, 16.1-16.4, 17.1-17.5, 17.8-17.11, 22.1, 23.1, 24.1, 25.1, 26.1, 27.1, 28.1 and 29.1-29.3 **New Mitigation Measure 4.7.A-N1:** *(See Impact 4.7.A for text.)* **New Mitigation Measure 4.7.A-N2:** *(See Impact 4.7.A for text.)*	Significant and unavoidable.
Impact 4.6.B(1) – Cause Significant Construction (Short-Term) Air Emissions: Future development accommodated by the proposed project, GPA No. 960, would result in construction activities generating air quality emissions that may be quantified based on the level of daily disturbance. However, since GPA No. 960 would be implemented through many (perhaps thousands) of individual projects occurring throughout Riverside County over next roughly 50 years, the level of daily disturbance for GPA No. 960 cannot be calculated and, therefore, the associated construction emissions cannot be quantified. Although implementing projects may be individually consistent with air quality standards, because of the cumulative nature of air emissions, such projects may nonetheless cumulatively exceed an air quality standard. Thus, even with implementation of the regulations, existing policies and mitigation measures outlined herein that reduce emissions, it cannot be guaranteed that they would be cumulatively reduced to below applicable thresholds. Thus, this impact would be significant and unavoidable with respect to violations of air quality standards for construction activities.	**General Plan Policies:** AQ 1.1-1.4, 1.10, 2.1, 4.1, 4.7-4.10, 5.1, 15.1, 16.1, 16.3, 17.1, 17.3, 17.4, 17.6, 17.8 and 17.11 **Existing EIR No. 441 Mit. Measures:** 4.5.1A, 4.5.1B and 4.5.1C **New Mitigation Measure 4.6.B-N1:** The construction contractor shall ensure that all disturbed areas and stock piles are watered at least three times per day or soil stabilizers are applied as necessary to prevent visible dust plumes from these areas. Stock piles not in use may be covered with a tarp to eliminate the need for watering or other stabilizers. **New Mitigation Measure 4.6.B-N2:** All construction equipment shall have EPA rated engines of Tier 3 or better. **New Mitigation Measure 4.6.B-N3:** As soon as electric utilities are available at construction sites, the construction site shall be supplied with elec-	Significant and unavoidable.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	tricity from the local utility and all equipment that can be electrically operated shall use the electric utility rather than portable generators.	
Impact 4.6.B(2) – Cause Significant Operational (Long-Term) Air Emissions: Stationary and mobile sources would emit criteria pollutants based on the level of daily operation. Modeling results indicate that such emissions would be large, both for individual future projects and cumulatively due to the countywide scale of GPA No. 960. Even with the implementation of regulations, ordinances and existing and proposed General Plan policies, in addition to new mitigation measures, criteria pollutant emissions would not be reduced below regulatory thresholds. Thus, this impact would remain significant and unavoidable with respect to violations of air quality standards for operational activities.	**General Plan Policies:** LU 1.5, 2.1, 4.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4; C 1.2, 1.7, 4.1, 4.8, 9.2, 11.2, 11.4-11.7, 12.1-12.3, 13.1-13.3, 17.3, 17.4, 20.14 and 21.1; OS 12.1, 16.1-16.6, 16.8; AQ 1.1-1.11, 2.1, 2.3, 2.4, 3.1-3.4, 4.2-4.8, 5.1-5.4, 7.1-7.4, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 10.1-10.4, 11.3, 11.4, 13.1-13.3, 14.1, 14.2, 14.4, 15.1, 16.1-16.4, 17.1-17.5, 17.8-17.11, 19.1, 20.1, 22.1, 23.1, 24.1, 25.1, and 26.1 and 26.2 **New Mitigation Measure 4.7.A-N1:** *(See text in Impact 4.7.A.)* **New Mitigation Measure 4.7.A-N2:** *(See text in Impact 4.7.A.)* **New Mitigation Measure 4.6.B-N4:** All new development shall ensure that all interior and exterior architectural coatings used are low in reactive organic gases. **New Mitigation Measure 4.6.B-N5:** If hearths are included in new residential developments, they shall be energy-efficient natural gas appliances. No wood-burning hearths or stoves shall be permitted in new residential developments.	Significant and unavoidable.
Impact 4.6.C – Cause Cumulatively Significant Project Air Quality Impacts: Future development accommodated by GPA No. 960 would result in the emission of criteria pollutants for which the project is in non-attainment during both construction and operation of the new development. However, the exact location and level of activity for development projects under proposed GPA No. 960 is unknown and therefore cumulatively considerable increases to criteria pollutant levels cannot be quantified. Even with compliance with existing regulations and policies and the implementation of existing and new mitigation measures, the proposed project would result in significant and unavoidable cumulative impacts.	**Riverside County Ord. No.s:** 706, 726, 782 and 824 **General Plan Policies:** LU 1.5, 2.1, 4.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4; C 1.2, 1.7, 4.1, 4.8, 9.2, 11.2, 11.4-11.7, 12.1-12.3, 13.1-13.3, 17.3, 17.4, 20.14 and 21.1; OS 12.1, 16.1-16.6, 16.8; AQ 1.1-1.11, 2.1, 2.3, 2.4, 3.1-3.4, 4.1-4.10, 5.1-5.4, 7.1-7.4, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 10.1-10.4, 11.3, 11.4, 13.1-13.3, 14.1, 14.2, 14.4, 15.1, 16.1-16.4, 17.1, 17.5, 17.6, 17.9-17.11, 19.1, 20.10, 22.1, 23.1, 24.1, 25.1, 26.1 and 26.2 **Existing EIR No. 441 Mit. Measures:** 4.5.1A, 4.5.1B and 4.5.1C **New Mitigation Measure 4.6.B-N1:** *(See text in Impact 4.6.B.)* **New Mitigation Measure 4.6.B-N2:** *(See text in Impact 4.6.B.)* **New Mitigation Measure 4.6.B-N3:** *(See text in Impact 4.6.B.)* **New Mitigation Measure 4.6.B-N4:** *(See text in Impact 4.6.B.)* **New Mitigation Measure 4.6.B-N5:** *(See text in Impact 4.6.B.)* **New Mitigation Measure 4.7.A-N1:** *(See text in Impact 4.6.A.)* **New Mitigation Measure 4.7.A-N2:** *(See text in Impact 4.7.A.)*	Significant and unavoidable.
Impact 4.6.D – Expose Sensitive Receptors to Air Pollutants: Future development accommodated by GPA No. 960 would expose sensitive receptors to pollutant emissions from both construction and operational activities. The degree of impact would depend on the type of operation, distance from sensitive receptors and the level of activity at each site. However, as the exact location, timing	**General Plan Policies:** AQ 1.1, 1.3, 1.4, 1.7, 1.10, 2.1-2.4, 4.1, 4.5-4.10, 5.1, 15.1, 16.1, 16.3, 17.1, 17.3, 17.4, 17.6 and 17.8-17.11 **Existing EIR No. 441 Mit. Measures:** 4.5.1A, 4.5.1B and 4.5.1C **New Mitigation Measure 4.6.D-N1:** New developments shall include the	Significant and unavoidable.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
and level of future development activities arising from GPA No. 960 is unforeseeable, specific impacts to sensitive receptors cannot be quantified. Thus, even after complying with regulations, existing policies and mitigation measures, as well as specific new mitigation measures, impacts cannot be guaranteed to be reduced to below applicable agency thresholds. Thus, this impact would be significant and unavoidable with respect to exposure of sensitive receptors.	following requirements to reduce emissions associated with toxic air contaminants (TACs): a. Electrical outlets shall be included in the building design of any loading docks to allow use by refrigerated delivery trucks. Signage shall also be installed, instructing commercial vehicles to limit idling times to five minutes or less. If loading and/or unloading of perishable goods would occur for more than five minutes and continual refrigeration is required, all refrigerated delivery trucks shall use the electrical outlets to continue powering the truck refrigeration units when the delivery truck engine is turned off. b. Electrical outlets shall be installed on the exterior of new structures for use with electrical landscaping equipment. Further, the property owner(s) shall ensure that the hired landscape companies use electric-powered equipment where available to a minimum of 20% of the equipment used. **New Mitigation Measure 4.6.D-N2:** The County of Riverside shall require minimum distances between potentially incompatible land uses, as described below, unless a project-specific evaluation of human health risks defines, quantifies and reduces the potential incremental health risks through site design or the implementation of additional reduction measures to levels below applicable standards (e.g., standards recommended or required by CARB, SCAQMD or MDAQMD). <u>SCAQMD Jurisdiction:</u> a. Proposed dry cleaners and film processing services that use perchloroethylene must be sited at least 500 feet from existing sensitive land uses including residential, schools, day care facilities, congergate care facilities, hospitals or other places of long-term residency for people. b. Proposed auto body repair services shall be sited at least 500 feet from existing sensitive land uses. c. Proposed gasoline dispensing stations with an annual throughput of less than 3.6 million gallons shall be sited at least 50 feet from existing sensitive land uses. Proposed gasoline dispensing stations with an annual throughput at or above 3.6 million gallons shall be sited at least 300 feet from existing sensitive land uses. d. Other proposed sources of TACs including furniture manufacturing and repair services that use methylene chloride or	

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	other solvents identified as a TAC shall be sited at least 300 feet from existing sensitive land uses. *e. Avoid siting distribution centers that accommodate more than 100 truck trips per day (or more than 40 truck trips operating transport refrigeration units per day, or where transportation refrigeration units operate more than 300 hours per week) within 1,000 feet of existing sensitive land uses.* f. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more. g. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners and film processing services that use per-chloroethylene. h. Proposed sensitive land uses shall be sited at least 500 feet from existing auto body repair services. i. Proposed sensitive land uses shall be sited at least 50 feet from existing gasoline dispensing stations with an annual throughput of less than 3.6 million gallons and 300 feet from existing gasoline dispensing stations with an annual throughput at or above 3.6 million gallons. j. Proposed sensitive land uses shall be sited at least 300 feet from existing land uses that use methylene chloride or other solvents identified as a TAC. *k. Proposed sensitive land uses shall be sited at least 1,000 feet from existing distribution centers that accommodate more than 100 trucks per day, accommodate more than 40 trucks per day with transportation refrigeration units, or where transportation refrigeration units operate more than 300 hours per week.* <u>MDAQMD Jurisdiction:</u> a. Proposed industrial projects must be sited at least 1,000 feet from existing sensitive land uses. b. Proposed distribution centers with 40 or more truck per day shall be sited at least 1,000 feet from existing sensitive land uses. c. Proposed dry cleaner using perchloroethylene shall be sited at least 500 feet from existing sensitive land uses. d. Proposed gasoline dispensing facility shall be sited at least 300 feet from existing sensitive land uses.	

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	e. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more. f. Proposed sensitive land uses shall be sited at least 1,000 feet from existing industrial facilities or distribution centers with more than 40 trucks per day. g. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners using perchloroethylene. h. Proposed sensitive land uses shall be sited at least 300 feet from existing gasoline dispensing stations. **New Mitigation Measure 4.6.B-N1:** *(See Impact 4.6.B(1).)* **New Mitigation Measure 4.6.B-N2:** *(See Impact 4.6.B(1).)* **New Mitigation Measure 4.6.B-N3:** *(See Impact 4.6.B(1).)*	
Impact 4.6.E – Cause or Expose People to Objectionable Odors: Future development accommodated by the proposed project would not create objectionable odors that would affect a substantial number of people. Additionally, compliance with existing regulatory programs and General Plan policies, as well as new Mitigation Measures 4.6.E-N1, 4.6.E-N2 and 4.6.E-N3 would further reduce objectionable odors. For these reasons odor impacts are less than significant.	**Regional Regulations:** SCAQMD Rules 402, 410 and 1179 **Riverside County Ord. No.s:** 706 **General Plan Policies:** AQ 1.5, 1.7, 2.1-2.4, 4.6, 5.1, 16.3 and 17.7-17.10 **New Mitigation Measure 4.6.E-N1:** Locate potential new odor sources predominantly down- or cross-wind from existing sensitive receptors and potential new sensitive receptors predominantly upwind from existing odor sources. As indicated by the "Right-to-Farm" ordinance, agricultural uses that have operated for more than three years cannot be re-classified as a public or private nuisance by new development. **New Mitigation Measure 4.6.E-N2:** Maintain an adequate buffer between potential new odor sources and receptors such that emitted odors are dissipated before reaching the receptors (minimum of 500 feet depending on odor source). As per the "right-to-farm" ordinance, agricultural uses that have been operated for more than three years cannot be re-classified as a public or private nuisance by new development. **New Mitigation Measure 4.6.E-N3:** Design odor-emitting facilities such that odor emitters are located as far from potential receptors as possible. Also, balance stack heights to provide the maximum dispersion of odor between the stack and the nearest sensitive receptor.	Less than significant with mitigation.
4.7 Greenhouse Gases		
Impact 4.7.A – Generation of Greenhouse Gas Emissions: Implementation of the Riverside County General Plan, as updated pursuant to the proposed project, (GPA No. 960), and associated Climate Action Plan (CAP) would result in future construction and operational activities that generate GHGs. Either individually or collectively, these activities have the potential to result in substantial	**Riverside County Ord. No.s:** 559, 655, 659, 695, 706, 726, 748, 782, 810, 824, 859 and 875 **Riverside County Policies and Regulations:** Riverside County Climate Action Plan (CAP); BOS Policies A-64, H-4, H-25 and H-29	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
emissions of GHGs; for example, exceeding the 3,000-10,000 MTY thresholds proposed by the SCAQMD in Tier 3 of its 2008 Interim CEQA Greenhouse Gas Significance Thresholds. However, implementation of the proposed General Plan policies and particularly, the Implementation Measures of the CAP, as well as existing EIR No. 441 and proposed mitigation measures would ensure GHG emissions within Riverside County would be less than significant.	**General Plan Policies:** LU 1.5, 2.1, 4.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4; C 1.2, 1.7, 4.1, 4.8, 5.2, 9.2, 11.2, 11.4, 11.5, 11.6, 12.1, 12.2, 13.1-13.3, 17.3, 17.4, 21.1, and 21.7; OS 2.2, 2.5, 10.1, 11.1-11.3, and 12.1; AQ 1.1-1.4, 1.7, 3.2, 3.4, 4.1, 4.2, 4.4, 5.1, 5.2, 5.4, 8.4-8.9, 10.1-10.4, 13.1, 21.1-21.4, 22.1, 23.1, 23.2, 24.1, 24.2, 25.1-25.3, 26.1, 26.2, 27.1, 27.2, 28.1, 28.2, and 29.1-29.4 **Existing EIR No. 441 Mit. Measures:** 4.5.1C (sans item *g,* which is N/A) **New Mitigation Measure 4.7.A-N1:** To ensure GHG emissions resulting from new development are reduced to levels necessary to meet State of California targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measures backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 adjusted BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011). **New Mitigation Measure 4.7.A-N2:** In lieu of a project-specific analysis per Mitigation Measure 4.7.A-N1, a future discretionary project proposed pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the Riverside County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions. ***NEW Mitigation Measure 4.7.A-N3:*** *The County of Riverside will monitor implementation of the reduction measures and revise or amend the Climate Action Plan as needed based upon the results of monitoring to ensure achievement of the 2020 Reduction Target. In addition, the County of Riverside will start update process of the Climate Action Plan in 2017 to provide a post-2020 plan. The post-2020 Climate Action Plan update will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The post-2020 Climate Action Plan update will include a set of updated reduction measures to achieve the 2035 and 2050 Reduction Targets and updated monitoring system to ensure that the updated targets are achieved. The County of Riverside will adopt the new*	

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	post-2020 Climate Action Plan update by January 1, 2020.	
Impact 4.7.B – Conflict with GHG Reduction Plans, Policies or Regulations: Implementation of the Riverside County General Plan, as updated pursuant to the proposed project (GPA No. 960), would result in future construction and operational activities that generate GHGs. This generation of GHGs would potentially conflict with the implementation of AB 32 and SB 375, California policies for reducing GHG emissions. However, implementation of the proposed General Plan policies and particularly the Implementation Measures of the Riverside County CAP, plus proposed new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, would ensure that build out of the General Plan, as amended by GPA No. 960, would be consistent with both AB 32 and SB 375 and have a less than significant impact on their implementation.	**Riverside County Ord. No.s:** 559, 655, 659, 695, 706, 726, 748, 782, 810, 824, 859 and 875 **Riverside County Policies and Regulations:** CAP; BOS Policies A-64, H-4, H-25 and H-29 **General Plan Policies:** LU 1.5, 2.1, 4.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4; C 1.2, 1.7, 4.1, 4.8, 5.2, 9.2, 11.2, 11.4, 11.5, 11.6, 12.1, 12.2, 13.1-13.3, 17.3, 17.4, 21.1, and 21.7; OS 2.2, 2.5, 10.1, 11.1-11.3, and 12.1; AQ 1.1-1.4, 1.7, 3.2, 3.4, 4.1, 4.2, 4.4, 5.1, 5.2, 5.4, 8.4-8.9, 10.1-10.4, 13.1, 21.1-21.4, 22.1, 23.1, 23.2, 24.1, 24.2, 25.1-25.3, 26.1, 26.2, 27.1, 27.2, 28.1, 28.2, and 29.1-29.4 **New Mitigation Measure 4.7.A-N1:** *(See text in Impact 4.7.A.)* **New Mitigation Measure 4.7.A-N2:** *(See text in Impact 4.7.A.)*	~~*Less than significant with mitigation*~~. *Significant and Unavoidable*
4.8 Biological Resources		
Impact 4.8.A – Adversely Affect Riparian and Other Sensitive Habitats: Future development accommodated by the proposed project, GPA No. 960, would increase rural, suburban and urban uses in Riverside County, adversely affecting riparian or other sensitive habitats in various areas. Compliance with a variety of laws, including Sections 401, 402 and 404 of the federal Clean Water Act, Section 1600 et seq. of the California Fish and Game Code and the multi-species habitat conservation plans for western Riverside County and the Coachella Valley, as well as a variety of existing and proposed General Plan policies and project-specific new Mitigation Measure 4.8.A-N1, would ensure that this impact is reduced to less than significant.	**Regional Regulations:** Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP) and Coachella Valley MSHCP (CV-MSHCP) **General Plan Policies:** LU 7.7, 9.1 and 9.2; C 20.9; OS 5.1, 5.2, 5.3, 5.5, 5.6, 6.1, 6.2, 9.3, 9.4, 17.1, 17.2, 18.1, 18.3, 18.4 and 20.2 **New Mitigation Measure 4.8.A-N1:** ~~*For sites not governed by an existing MSHCP,*~~ Where site conditions (for example, topography, soils, vegetation, etc.) indicate a project could adversely affect any riparian or riverine resources, then an appropriate assessment shall be prepared by a qualified professional. An assessment shall include, but not be limited to, identification and mapping of any riparian/riverine areas and evaluation of species composition, topography/hydrology and soil analysis, as applicable. An assessment shall be completed as part of the environmental review for the development proposal prior to its approval. Upon receipt of an assessment, the Riverside County Ecological Resources Specialist (ERS) shall review the document and make a finding that either: a. Riparian/riverine areas do not exist on site; b. Project-specific avoidance measures have been identified that would be sufficient to ensure avoidance of riparian/riverine areas; or c. Impacts to riparian/riverine areas are significant and unavoidable. If avoidance is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools and associated functions and values to the greatest extent possible must be developed.	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	If impacts remain ~~*significant and*~~ unavoidable the then ~~*ERS will*~~ *projects shall be conditioned to* require the project applicant to obtain a Section 404 permit from the ACOE and/or a Fish and Game Code Section 1600 agreement from CDFW prior to the issuance of any grading permit or other action by the County of Riverside that would lead to the disturbance of the riparian resource. **New Mitigation Measure 4.8.A-N2:** ~~*For sites not governed by an MSHCP,*~~ A general biological resources assessment (BRA) shall be required as part of the discretionary project review process at the County of Riverside's discretion. For example, *a BRA would be required* if site inspection, aerial or other photos, resource agency data or any other information indicates potential for sensitive habitat to occur on, or be adversely affected by the proposed project. The BRA shall be prepared and reviewed as per the requirements outlined in Mitigation Measure 4.8.B-N1.	
Impact 4.8.B – Cause Direct and Indirect Impacts to Protected Species or Their Habitats: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting various sensitive species, including threatened, endangered and special status species protected under various local, state and federal laws. Compliance with the federal and California Endangered Species Acts (FESA & CESA), federal Clean Water Act (CWA) and California Fish and Game Code, as well as the two MSHCPs (WRC and CV) in Riverside County, plus existing and proposed General Plan Policies would avoid, reduce or minimize significant impacts to protected species and their habitats. In addition, a new project-specific mitigation measure, 4.8.B-N1, is proposed to ensure this impact would be less than significant.	**Regional Regulations:** Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP), WRC-MSHCP and CV-MSHCP **General Plan Policies:** C 20.9; OS 5.1, 5.3, 5.6, 6.2, 9.3, 9.4, 17.1, 17.2, 18.1, 18.3 and 20.2 **New Mitigation Measure 4.8.B-N1:** Prior to discretionary project approval for projects with potential to substantially adversely affect sensitive (listed, candidate or special status) species or habitats ~~*not covered by an existing MSHCP or HCP*~~, a general biological resource assessment (BRA) shall be performed. The following requirements shall apply: a. The BRA shall be performed by a Riverside County-approved biologist pursuant to a Memorandum of Understanding (MOU) executed between the biologist and the County of Riverside. b. The biology/environmental firm or biologist preparing the BRA must be on Riverside County's list of qualified consultants. c. Fieldwork must be performed by qualified biologists according to professional standards. d. If included in the BRA, presence/absence surveys for specific plants must be conducted during the applicable blooming season or other conditions as deemed scientifically appropriate and valid. e. Should affected species or habitat occur on the project site, then a "Focused Protocol Survey" must be prepared for those species using existing protocols established by the USFWS or CDFG. If no such protocols exist, the survey must be based on generally accepted biological survey protocols appropriate to the species.	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	The BRA requirement *may* be waived if any of the following conditions are documented to exist. a. The area affected by the proposed project ("footprint" herein) consists entirely of built environment (structures, pavement, etc.) and none of the biota or plant material present (i.e., landscaping) represent likely habitat used by a sensitive species. b. The Riverside County Environmental Resource Specialist (ERS) finds in writing that the proposed footprint does not have any biological resources expected to be used by a protected species or plant. c. The project or activity proposed is to be performed under an existing incidental take permit, habitat conservation plan or other governing permit, license or authorization (i.e. Section 7 consultation) and no new significant effect to the covered species or other protected species or resource is expected to occur. In addition to the items herein, the BRA shall also be prepared in accordance with the Riverside County "Guide to Preparing General Biological Resource Assessments," as well as any other requirements of the Riverside County Environmental Programs Department, Planning Department or other Riverside County agency. Upon receipt of the BRA, the Riverside County ERS shall review it and all supporting documentation. If the Riverside County ERS finds that the project does not have the potential to substantially affect sensitive species or habitat, no further mitigation is required. If the Riverside County ERS finds that the project has the potential to substantially adverse affect sensitive species or habitat, then additional mitigation will be developed and imposed to reduce such impacts to below a level of significance. Such mitigation may include but not be limited to obtaining an incidental take permits from the USFWS and/or CDFW, as applicable, and acquisition and conservation of replacement habitat at appropriate ratios.	
Impact 4.8.C – Adversely Affect Wetlands: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption or other means. Compliance with the existing laws, regulatory programs and General Plan policies, as well as new project-specific Mitigation Measures 4.8.C-N1 and 4.8.C-N2, would ensure impacts to wetlands would be less than significant.	**Regional Regulations:** WRC-MSHCP **General Plan Policies:** LU 7.7, 9.1 and 9.2; OS 5.1, 5.2, 5.5, 5.6, 6.1, 6.2, 17.1, 17.2, 18.1, 18.3 and 18.4 **New Mitigation Measure 4.8.C-N1:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by Section 404 of the CWA, then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process.	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	An assessment shall include, but not be limited to, identification and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal. Should any grading or construction be proposed within or alongside the banks of the watercourse or wetland, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the alteration of any watercourse or wetland, located either on site or on any required offsite improvement areas, complies with the U.S. Army Corps of Engineers Nationwide Permit Conditions. Or, the land divider shall obtain a permit under Section 404 of the Clean Water Act. Copies of any agreements shall be submitted along with the notification. **New Mitigation Measure 4.8.C-N2:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by CFGC Section 1600 *et seq*., then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process. An assessment shall include, but not be limited to, identification and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal. Should any grading or construction be proposed within or along the banks of any natural watercourse or wetland located either on site or on any required offsite improvement areas, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the appropriate California Department of Fish and Wildlife notification pursuant to Sections 1601/1603 of the California Fish and Game Code has taken place. Or, the land divider shall obtain an "Agreement Regarding Proposed Stream or Lake Alteration" (Section 1601/1603 Permit). Copies of any agreements shall be submitted along with the notification.	
Impact 4.8.D – Impede Species Movement, Migration, Wildlife Corridors and Use of Wildlife Nursery Sites: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting movement, migration, wildlife corridors and the use of native wildlife nursery sites. Compliance with existing laws, regulatory programs and	**Regional Regulations:** WRC-MSHCP, CV-MSHCP and SKR HCP **General Plan Policies:** C 20.9; OS 5.1, 5.3, 5.6, 6.2, 9.3, 9.4, 17.1, 17.2, 18.1, 18.3 and 20.2 **New Mitigation Measures 4.8.B-N1:** *(See Impact 4.8.B.)*	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
General Plan policies, as well as new project-specific Mitigation Measures 4.8.B-N1 and 4.8.D-N1, would ensure that this impact is less than significant.	**New Mitigation Measure 4.8.D-N1:** Should a wildlife nursery site or native resident or migratory wildlife corridor be uncovered through a biological resources assessment (BRA), then a consultation with a Riverside County Ecological Resources Specialist (ERS) shall occur. The ERS shall make a determination if the site is essential for the long-term viability of the species. If such a determination is made, then the ERS shall work with the applicant to avoid the effects of development on the resource in question and condition the land use case accordingly. Should significant impacts to nursery site or corridor not be avoidable, project applicant shall be required to ensure the preservation of comparable nursery or corridor habitat off site.	
Impact 4.8.E – Conflict with Adopted Habitat Conservation Plans: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, including areas covered by adopted HCPs, in particular the WRC-MSHCP and the CV-MSHCP. Compliance with the provisions of these MSHCPs would ensure that future development accommodated by GPA No. 960 is consistent with the plans and that this impact is less than significant.	**Regional Regulations:** WRC-MSHCP, CV-MSHCP and SKR HCP **General Plan Policies:** C 20.9; OS 5.1, 5.3, 5.6, 6.2, 9.3, 9.4, 17.1, 17.2, 18.1, 18.3 and 20.2	Less than significant.
Impact 4.8.F – Conflict with Local Biological Resource Protections Policies or Ordinances: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in the county. In some locations, this could result in conflicts with local policies and ordinances protecting biological resources, such as Riverside County's Oak Tree Management Guidelines, for example. Compliance with existing laws, regulatory programs, Riverside County Ordinance No. 559 and General Plan policies would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 559 **Riverside County Policies:** Riverside County Oak Tree Management Guidelines **General Plan Policies:** OS 9.3 and 9.4	Less than significant.
4.9 Cultural and Paleontological Resources		
Impact 4.9.A – Adversely Change the Significance of Historical Resources: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting known and presently unknown historic resources. Compliance with existing laws, Riverside County Ordinance No. 578, General Plan policies and existing Mitigation Measure 4.7.1B from EIR No. 441 would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.:** 578 **General Plan Policies:** LU 4.5.; OS 19.2–19.5 **Riverside County Planning Dept. Procedures:** *(See EIR No. 521 Section 4.9.3, Subsections D.2 and D.3.)* **Standard Project Conditions of Approval:** *(See list in EIR No. 521 Section 4.9.3., Subsection D.4.)* **Existing EIR No. 441 Mit. Measures:** 4.7.1B	Less than significant.
Impact 4.9.B – Cause the Destruction of Known Archeological Resources: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting known or presently unknown archeological resources. Compliance with existing laws, General Plan policies, Planning Department procedures, project-level conditions of approval for cultural resources, existing Mitigation Measure 4.7.1B from EIR No. 441 and new Mitigation Measure 4.9.B-N1 would be sufficient to ensure that this impact is less than significant with mitigation.	**Riverside County Ord. No.s:** 578 **General Plan Policies:** OS 19.2-19.5 **Riverside County Planning Dept. Procedures:** *(See EIR No. 521 Section 4.9.3., Subsections D.2 and D.3, for text.)* **Standard Project Conditions of Approval:** *(See list in EIR No. 521 Section 4.9.3., Subsection D.4.)* **Existing EIR No. 441 Mit. Measures:** 4.7.1B **New Mitigation Measure 4.9.B-N1:** If avoidance or preservation in place of cultural resources is not feasible, the following mitigation measures shall be	Less than significant with mitigation.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
	initiated for each impacted site: a. Discoveries shall be discussed with the Native American tribal (or other appropriate ethnic/ cultural group representative) and the Riverside County Archeologist, and a decision shall be made with the concurrence of the Planning Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) appropriate for the cultural resource. b. Further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to appropriate preservation or mitigation measures.	
Impact 4.9.C – Cause the Destruction of Unique Paleontological Resources or Sites: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County and could result directly or indirectly in destruction of unique paleontological resources or sites or unique geological features. Compliance with existing laws, General Plan policies, Planning Department procedures and project-level general conditions of approval for paleontological resources would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** OS 19.6–19.9	Less than significant.
Impact 4.9.D - Result in the Disturbance of Human Remains: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting human remains, including those interred outside formal cemeteries. Compliance with existing laws, General Plan policies, Planning Department procedures, project-level general conditions of approval for cultural resources, and existing Mitigation Measures 4.7.1A and 4.7.1B would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** OS 19.2-19.5 **Riverside County Planning Dept. Procedures:** *(See EIR No. 521 Section 4.9.3., Subsections D.2 and D.3, for text.)* **Standard Project Conditions of Approval:** *(See list in EIR No. 521 Section 4.9.3., Subsection D.4.)* **Existing EIR No. 441 Mit. Measures:** 4.7.1A. and 4.7.1B	Less than significant.
4.10 Energy Resources		
Impact 4.10.A – Increase Demand for Electricity: Future development accommodated by the proposed project, GPA No. 960, would be less intense than that currently planned in the existing General Plan. Thus, on a relative basis, the project would not increase demand for electricity over current plans. Site-specific foreseeable land use changes proposed under the project, however, do have the potential to introduce new development or intensify existing development on previously vacant or less-developed lands. Analysis of energy demands associated with these changes indicates project demands would be insignificant compared to existing baseline levels and forecast Riverside County growth rates. For these reasons, the proposed project would not have a significant impact on existing electricity supplies, production or transmission facilities. The project would not trigger the need for new or altered facilities nor result in substantial environmental impacts due to the construction of such facilities. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce the already insignificant impact associated with project-related electricity demand and service.	**General Plan Policies:** OS 10.1, 10.2, 11.2, 11.3, 11.4, 12.1-12.4 and 16.1-16.13; AQ 4.2-4.4, 5.2-5.4, 20.10-20.12, 20.18-20.21 and 20.28 **Existing EIR No. 441 Mit. Measures:** 4.8.1A and 4.8.1B	Less than significant.
Impact 4.10.B – Increase Demand for Natural Gas: Future development consistent with the proposed project, GPA No. 960, would be less intense than that currently planned in the existing	**General Plan Policies:** OS 12.1-12.4, 16.1, 16.2, 16.4-16.7, 16.10-16.12; AQ 4.2-4.4, 5.2-5.4, 18.3-18.5, 19.3, 20.11, 20.12, 20.21 and 20.28	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
General Plan. Thus, on a relative basis, the project would not increase demand for natural gas over current plans and would not trigger new additional environmental impacts. Site-specific land use changes proposed in GPA No. 960, however, do have the potential to introduce new development or intensify existing development on previously vacant or less-developed lands. Analysis of energy demands associated with these changes indicate project demands would be insignificant compared to existing baseline levels and are in line with expected growth rates. For these reasons, the proposed project would not have a significant impact on existing natural gas supplies, production or transmission facilities. The project would not trigger the need for new or altered facilities nor result in substantial environmental impacts due to the construction of such facilities. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce already insignificant impacts associated with project-related natural gas demand and service.	**Existing EIR No. 441 Mit. Measures:** 4.8.1A and 4.8.1B	
Impact 4.10.C – Cause the Inefficient Use of Energy: Future development consistent with the proposed project, GPA No. 960, would be less intense than that currently planned in the existing General Plan. Therefore, on a relative basis, the project would not increase demand for energy over current plans. The project also proposes to add a number of new policies and programs targeting energy efficiency and conservation directly in order to reduce greenhouse gas emissions by roughly 30% (see EIR Section 4.7, Greenhouse Gases). As a result of implementation of such measures, new development would be more energy efficient and less wasteful of energy than existing uses or proposed uses without GPA No. 960. For these reasons, the project would not result in inefficient, wasteful or unnecessary energy consumption and the project's impacts on use of energy would be less than significant. No project-specific mitigation is required. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce the already insignificant impacts associated with efficient use of energy.	**General Plan Policies:** OS 11.1-11.4, 12.1-12.4, 16.1-16.10 and 16.11-13.13; AQ 4.2-4.4, 5.2-5.4; 13.1, 18.3-18.5, 19.3, 20.10-20.12, 20.18, 20.19, 20.21, 20.27 and 20.28 **Existing EIR No. 441 Mit. Measures:** 4.8.1B	Less than significant.
4.11 Flooding and Dam Inundation Hazards		
Impact 4.11.A – Result in Housing Within Flood Hazard Areas: Future development accommodated by the project would result in encroachment into areas of mapped 100-year floods (including some alluvial fans) and other delineated flood hazards areas. Such development may increase the amount of people, structures and property at risk should a flooding event occur. These flood hazard areas are extensively regulated, however, and compliance with existing laws and regulatory programs, in particular Riverside County Ordinance No. 458, as well as General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 348, 457, 458 and 659 **General Plan Policies:** S 4.1-4.4, 4.8-4.10 and 4.18 **Existing EIR No. 441 Mit. Measures**: 4.9.2A, 4.9.2B, 4.9.2C and 4.9.2D	Less than significant.
Impact 4.11.B – Cause Impediment of Flows: Future development as a result of implementation of the proposed project may result in placement of structures within 100-year flood hazard areas, creating the potential for impeding or redirecting flood flows. As a result, people, structures and property, as well as those introduced by the new development, could be exposed to increased	**Riverside County Ord. No.s:** 458 and 461 **General Plan Policies:** S 4.2-4.5, 4.7-4.9 and 4.18 **Existing EIR No. 441 Mit. Measures**: 4.9.1A, 4.9.1B, 4.9.1C and 4.9.1D	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
flooding risks. Compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, in particular Riverside County Ordinance No. 458, would be sufficient to ensure that this impact is less than significant.		
Impact 4.11.C – Expose People or Structures to Flooding Risks, Including Flooding Due to Dam or Levee Failure: Future development accommodated by the project may result in placement of structures, including habitable ones, within dam inundation zones, alluvial fan flooding zones and other areas of potential flood hazard. Such development would be at greater risk of flood hazards should a dam, levee debris basin or other critical flood control structure fail. As a result, existing people, structures and property, as well as those introduced as a result of GPA No. 960, could be exposed to increased flooding risks due to failure of flood control structures. Compliance with existing laws, regulatory programs and General Plan policies would be sufficient to ensure that this impact does not rise to the level of significance.	**Riverside County Ord. No.s:** 348, 457, 458, 461, 659 and 754 **General Plan Policies:** S 4.1-4.4, 4.6, 4.8, 4.9, 4.12 and 4.16-4.22	Less than significant.
Impact 4.11.D – Cause the Adverse Alteration of Drainage Patterns or Substantially Increase Surface Runoff: Development consistent with GPA No. 960 would alter drainage patterns, streams and river courses, in some cases substantially. It would also cause increases in surface runoff through the introduction of non-permeable surfaces (roofs, pavement, roads, etc.). If not properly managed, this would cause hydrological changes that could expose existing people, structures and property, as well as those introduced by the project, to increased flooding risks. Compliance with existing laws, regulatory programs and General Plan policies would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 348, 457, 458, 461, 659 and 754 **General Plan Policies:** S 4.4, 4.5 and 4.7-4.10	Less than significant.
Impact 4.11.E – Cause Inundation Risk Due to Seiche, Tsunami or Mudflow: Future development in areas subject to seiche have the potential to threaten people, structures and property. In terms of seiche hazards, there is no documented significant potential for any of the waterbodies within Riverside County. Based on morphology and hydrology, two waterbodies in Riverside County (Lake Perris and Lake Elsinore) may have the potential for seismically induced seiche. However, setbacks and flood hazard area regulations would be sufficient to protect against significant risks. Thus, for the proposed project, resultant future development along or near lakes and reservoirs is considered to be at minimal risk. Thus, overall, seiche impacts would be less than significant. Due to its inland location, by definition there are no tsunami risks in Riverside County. Mudflow or debris flow can occur in areas with steep slopes, particularly areas with loose soils and/or denuded of vegetation (e.g., fire burn areas) when exposed to large amounts of precipitation. Narrow canyons, arroyos and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or the improper diversion of runoff from a developed area. When addressed through proper soil engineering, site design and maintenance, these risks are less than significant.	**Riverside County Ord. No.s:** 348, 457, 458, 461, 659 and 754 **General Plan Policies:** S 4.1-4.10, 4.12 and 4.16-4.22 **Existing EIR No. 441 Mit. Measures**: 4.9.1A, 4.9.1B, 4.9.1C, 4.9.1D; 4.9.2A, 4.9.2B, 4.9.2C and 4.9.2D	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
4.12 Geology and Soils		
Impact 4.12.A – Expose People or Structures to Substantial Adverse Effects Due to Rupture of a Known Earthquake Faults: Future development accommodated by the proposed project would increase rural, suburban and urban uses in Riverside County. This may increase the potential for property loss, injury or death resulting from development where it occurs on or adjacent to known or as of yet undetected earthquake fault zones. Compliance with existing laws, regulatory programs, General Plan policies and existing (EIR No. 441) Mitigation Measure 4.10.1A would be sufficient to ensure that fault rupture impacts to future development accommodated by GPA No. 960's proposed General Plan changes would be less than significant.	**Riverside County Ord. No.s:** 547 **General Plan Policies:** S 2.1-2.6, 3.1, 3.3, 3.4, 3.8, 7.7, 7.8 and 7.11 **Existing EIR No. 441 Mit. Measures**: 4.10.1A	Less than significant.
Impact 4.12.B – Expose People or Structures to Substantial Strong Seismic Groundshaking: Like all of Southern California, Riverside County has experienced and will continue to face groundshaking resulting from activity on local and regional faults. Future development consistent with GPA No. 960 may increase the potential for property loss, injury or death resulting from this groundshaking hazard. Compliance with existing laws, regulatory programs, General Plan policies and existing EIR No. 441 mitigation measures would be sufficient to ensure that this impact is less than significant.	**Riverside County Regulations:** Riverside County Municipal Code, Chapter 15.60 - Earthquake Fault Area Construction Regulations **General Plan Policies:** S 2.2-2.6, 3.1, 3.3, 3.4, 3.8, 7.8, 7.7 and 7.11 **Existing EIR No. 441 Mit. Measures:** 4.10.2A, 4.10.2B and 4.10.2C	Less than significant.
Impact 4.12.C – Expose People or Structures to Substantial Adverse Effects Due to Seismic-Related Ground Failure, Including Liquefaction: Portions of unincorporated Riverside County are susceptible to liquefaction, a destructive secondary effect of strong seismic shaking. Future development associated with GPA No. 960 within Riverside County would increase the potential for the placement of structures and facilities in or near areas susceptible to liquefaction. Impacts associated with seismic-related ground failure and liquefaction would be reduced through compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures. Compliance with the regulations described below would ensure that seismic-related ground failure and liquefaction risks to future development accommodated by the project would be less than significant.	**Riverside County Ord. No.s:** 547 **General Plan Policies:** S 2.2-2.7, 3.1, 3.3, 3.4, 3.8, 7.7, 7.8 and 7.11 **Existing EIR No. 441 Mit. Measures:** 4.10.3A and 4.10.3B	Less than significant.
Impact 4.12.D – Expose People or Structures to Substantial Adverse Effects Due to Landslides: Landslides and rockfall can occur throughout Riverside County as a result of seismic activity and other natural processes, as well as resulting from human activity. Future development within Riverside County accommodated by GPA No. 960 would increase the potential for structures and facilities in areas susceptible to landslides or rockfall. Compliance with existing laws and General Plan policies would reduce potential landslide and rockfall impacts to less than significant levels.	**General Plan Policies:** S 2.2-2.8, 3.1-3.8, 7.7, 7.8 and 7.11	Less than significant.
Impact 4.12.E – Result in Substantial Soil Erosion or Topsoil Loss: Areas exposed during future development activities accommodated by GPA No. 960 revisions to the General Plan would be prone to erosion and loss of topsoil. Wind and water are the two biggest factors in soil erosion. Human activities that remove vegetation or disturb soil are the biggest contributor to erosion potential.	**Riverside County Ord. No.s:** 484 **General Plan Policies:** S 3.5, 3.6, 3.11 and 3.12-3.14 **Existing EIR No. 441 Mit. Measures:** 4.10.8A, 4.10.9A, 4.10.9B and 4.10.9C	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures help reduce potential soil erosion impacts and ensure that future development would have a less than significant impact on soils.		
Impact 4.12.F – Result in Development on Unstable Geological Units or Soils: Unstable geological units and soils occur throughout Riverside County. Additionally, both natural and human activities have the potential to cause geologic instability. If improperly engineered or constructed, some types of development, particularly those involving heavy loads (concrete dams, for example) or affecting subsurface water levels (e.g., groundwater pumping or replenishment facilities), have an increased potential to cause ground or soil failures. These types of failures are in addition to those triggered by seismic events, as described in earlier impacts above. Future development accommodated by GPA No. 960 would increase the potential for landslides, liquefaction, lateral spreading and subsidence as a result of placement on unstable geological units or soils. However, compliance with existing laws and General Plan policies discussed below would reduce potential impacts related to development on or affected by unstable geological units or soil. Compliance with these would ensure that future development accommodated by the project would have a less than significant impact.	**General Plan Policies:** S 2.1-2.7, 3.1-3.5, 3.7-3.10 and 7.7	Less than significant.
Impact 4.12.G – Result in Development on Expansive Soils: Expansive soils are widely distributed throughout Riverside County. Future development associated with GPA No. 960 would increase the potential for the placement of structures and facilities in areas susceptible to damage resulting from expansive soils. Compliance with existing laws and mitigation measures from EIR No. 441 help reduce potential impacts from expansive soils and ensure that they are less than significant.	**Existing EIR No. 441 Mit. Measures:** 4.10.7A	Less than significant.
Impact 4.12.H – Result in Development on Soils Incapable of Supporting Septic Tanks or Alternative Wastewater Disposal Systems: Future development accommodated by GPA No. 960, particularly in areas outside of existing water and sewer service providers, would increase the potential for placement of structures and facilities in areas where soils are incapable of adequately supporting septic tanks or alternative wastewater disposal systems. However, due to laws, regulations and Riverside County policies addressing sewer requirements, potential impacts associated with these types of soils would be avoided or reduced to less than significant levels.	**General Plan Policies:** S 3.3	Less than significant.
4.13 Hazardous Materials and Safety		
Impact 4.13.A – Create a Significant Hazard Through the Routine Transport, Use of Disposal of Hazardous Materials: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, which could result in some adverse effects from facilities that transport, use or dispose of hazardous materials. However, compliance with existing laws and regulatory programs would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 348, 615, 651 and 718 **General Plan Policies:** S 6.1, 7.1, 7.3 and 7.9	Less than significant.
Impact 4.13.B – Cause a Significant Hazard Through the Accidental Release of Hazardous Materials: Future development accommodated by the project would increase the number of people and properties potentially at risk for upsets or accidental hazmat releases. However, while the potential for accidental explosion or release of hazardous substances from existing and future industries, transportation or disposal within Riverside County exists, it is not, nor would it be, any	**Riverside County Ord. No.s:** 615, 617, 651, 718 and 348 **General Plan Policies:** S 6.1, 7.1-7.3 and 7.9	Less than significant.

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higher than is typical for any other region of Southern California. Within Riverside County, the highest probabilities for inadvertent releases of hazardous substances are through a vehicular accident on heavily traveled freeways, during remediation or grading of a contaminated site, or from an industrial accident at a facility that handles large amounts of hazardous materials. Compliance with existing regulatory programs and General Plan policies would be sufficient to ensure that this impact is less than significant.		
Impact 4.13.C – Result in Hazardous Emissions or Related Hazards Within One-Quarter Mile of a School: Within Riverside County, there are 25 separate school districts for primary grades (K-12), four Community College Districts and a number of public and private colleges and universities. While no schools would be planned or built under GPA No. 960, the eventual build out of the General Plan would require additional schools, one or more schools of which may be located in the vicinity of a major hazmat site (see Table 4.13-A and Figure 4.13.1). In addition, school sites themselves contain hazardous materials of various types (such as pesticides, paints, cleaners and other commonly used substances). The use of such materials is governed by the schools and various regulations. The General Plan contains policies designed to protect the public and properties against hazardous material risks. However, the siting of school facilities is determined by individual school districts, based on criteria established by the California Department of Education (CDOE). While Riverside County can regulate the location of industrial uses within unincorporated areas, it cannot control the actions of individual school districts within Riverside County, or the CDOE, in siting new schools. As a result, the potential exists for significant impacts on school facilities resulting from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or wastes within a quarter-mile of a school, but not as a result of the proposed project. School siting is also subject to review and approval by the California Department of Toxic Substances Control to help ensure school sites are not located on or near identified hazmat sites. Implementation of regulations and General Plan policies would ensure that future development consistent with GPA No. 960 would have less than significant hazmat impacts on schools.	**Riverside County Ord. No.s:** 617 **General Plan Policies:** S 6.1 and S 7.1-7.3	Less than significant.
Impact 4.13.D – Result in a Significant Hazard Due to Development on a Cortese List Hazardous Materials Site: According to the California Department of Toxic Substances Control database, there are 19 sites within Riverside County that are on the Cortese list, as shown in Table 4.13-A. However, none of the proposed GPA No. 960 sites are adjacent to or in the immediate vicinity of any properties on the Cortese list. Compliance with applicable federal, state and county regulations would reduce the potential risks of public exposure to hazardous materials to less than significant levels.	**General Plan Policies:** S 6.1, 7.1, 7.3, 7.6 and 7.14	Less than significant.
Impact 4.13.E – Result in Safety Hazard for People Within Two Miles of a Public or Public Use Airport: Future development accommodated by the project has the potential to introduce additional people and property within two miles of public airports. However, GPA No. 960 proposes changes within three Airport Influence Areas to improve safety by ensuring consistency between the General	**Riverside County Ord. No.s:** 269, 448 and 576 **General Plan Policies:** LU 1.8, 15.1-15.9 and 31.2	Less than significant.

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Plan and these airports' Airport Land Use Plans. Future proposed development in a Riverside County Airport Influence Area would be subject to review by the Riverside County Airport Land Use Commission (ALUC) to ensure safety and minimize risks both to people and property on the ground. This would also help ensure air travel safety and protect the functioning of the public air facilities. In addition, the General Plan includes provisions to minimize safety hazards for people living and working in proximity to these airports. However, due to the nature of air travel, potential safety hazards around airports, such as aircraft accidents, would remain. An unforeseeable air accident could result in substantial loss of life or property damage, even within the safety zones outlined in the General Plan and the Riverside County Airport Land Use Compatibility Plan (ALUCP). However, compliance with applicable Riverside County and ALUC regulations would ensure that air hazard risks to the areas affected by GPA No. 960, including any resultant future development, would be minimized to less than significant levels.		
Impact 4.13.F – Result in a Safety Hazard for People in the Vicinity of a Private Airstrip or Heliport: Future development resulting from implementation of GPA No. 960 has the potential to introduce additional people and property within the vicinity of private airports, airstrips and heliports. However, the General Plan includes provisions to minimize safety hazards for people living or working in proximity to these facilities. Due to the nature of air travel, however, potential safety hazards around these facilities, particularly due to aircraft accidents, would remain, although usage levels of these types of facilities tend to be very low. Nevertheless, an air accident could result in substantial loss of life or property damage, even when development conforms to the standards for acceptable levels of risk, as outlined in the General Plan, ALUC standards, this EIR and Riverside County's safety plans. However, compliance with existing regulations and General Plan policies would ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 448 and 576 **General Plan Policies:** LU 1.8, 15.2, 15.9 and 31.2	Less than significant.
Impact 4.13.G – Impair or Interfere With an Adopted Emergency Response Plan or Emergency Evacuation Plan: Future development accommodated by the project has the potential to interfere with safety or evacuation plans if not consistent with these existing emergency plans. However, the overall level of future development accommodated by the General Plan would be slightly less under the proposed revisions of GPA No. 960 than it would under the existing General Plan, slightly lowering the populations needing potential evacuation. In addition, the construction of the new roads and connecting road segments proposed under GPA No. 960 would actually improve access to and from some of the more remote portions of the county, facilitating evacuations and emergency responses. Thus, overall, the proposed improvements associated with GPA No. 960 would have beneficial impacts on, and help reduce potential hazards related to, future increased populations. Further, compliance with existing regulations and General Plan policies would ensure that this impact is less than significant.	**Riverside County Regulations:** Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan **Riverside County Ord. No.s:** 787 **General Plan Policies:** S 5.12 and 5.14	Less than significant.
Impact 4.13.H – Expose People or Structures to Significant Risk Due to Wildland Fires: Areas of high fire hazard exist within unincorporated portions of Riverside County, including rural, mountainous terrain, as well as areas adjacent to, or covered by, natural grasslands or brush. Future	**Riverside County Regulations:** Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan **Riverside County Ord. No.s:** 695 and 787	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. Nevertheless, GPA No. 960 would accommodate future development in previously undeveloped areas, including some with high or very-high fire hazards. This would increase both the number of people and amount of property potentially exposed to fire hazards. Additionally, there is the potential for an increase in the occurrence of fires, particularly in urban-wildland interface areas, due to increasing human encroachment. Compliance with existing regulations and General Plan policies would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** LU 5.1, 5.2, 7.8 and 10.1; S 5.1-5.8, 5.9 and 5.11-5.21	
4.14 Mineral Resources		
Impact 4.14.A – Result in the Loss of Availability of Delineated Locally Important Minerals: No. As shown in Figure 4.14.1, the Riverside County General Plan does not contain any "locally important mineral resource recovery sites." GPA No. 960 does not propose to change this. Therefore, the proposed project would not have an effect on this type of resource.		No effect.
Impact 4.14.B – Result in the Loss of Availability of Known Mineral Resources: Future development consistent with the land use and policy changes proposed by GPA No. 960 has the potential to result in the loss of availability of known mineral resources that would be of value to the region and the residents of the State of California. Compliance with existing laws, regulatory programs and General Plan policies, as well as proposed new or revised General Plan policies, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.:** 555 **General Plan Policies:** LU 9.6, 9.7 and 27.1-27.5; OS 14.1-14.5	Less than significant.
4.15 Noise		
Impact 4.15.A – Generate Noise or Cause Noise Exposure in Excess of Standards: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. In some locations, this would result in the introduction of new noise-sensitive land uses into areas of existing excess noise or areas in which county growth would eventually lead to excess noise levels. In addition, future development accommodated by GPA No. 960 would contribute incrementally to increased traffic volumes on county roads, resulting in noise increases affecting sensitive land uses along existing and future roads. As a result, new development, particularly residential uses along and adjacent to major transit corridors, could be exposed to noise levels that exceed Riverside County's noise standards. Existing sensitive uses would also be subject to these higher noise levels. Compliance with existing noise standards, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441 would reduce the effects of noise on new development to less than significant levels. However, where noise generators would expose existing receptors (residences and other sensitive uses) to excessive noise, impacts would be significant and unavoidable, as mitigation of these incremental and wide-spread noise impacts is infeasible.	**Riverside County Ord. No.s:** 847 **General Plan Policies:** N 1.1-1.3, 1.7, 2.2, 3.2, 3.5, 4.1, 4.4, 6.4, 7.3, 9.3, 9.7, 11.5, 14.1, 14.2 and 14.9; LU 4.1, 15.1, 15.2, 16.9, 16.10, 29.6, 30.6, 31.3 and 32.10; OS 14.5 **Existing EIR No. 441 Mit. Measures:** 4.13.2A, 4.13.2B, 4.13.2C, 4.13.2D, 4.13.3A, 4.13.3B and 4.13.3C	Significant and unavoidable.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Impact 4.15.B – Generate or Cause Exposure to Excessive Groundborne Vibration: Future development accommodated by GPA No. 960, and its associated infrastructure and support uses, would require construction activities that could cause temporary, short-term vibrations. These vibrations would be disruptive if located near sensitive receptors. Also, future development of new vibration-sensitive land uses could occur within areas subject to existing sources of vibration (e.g., railroads). However, compliance with General Plan policies and existing mitigation measures, would ensure that new uses are not subject to excessive vibration impacts. For construction-related vibration, compliance with existing Riverside County ordinances and General Plan policies, as well as a new project-specific Mitigation Measure 4.15.B-N1, would help reduce the effects of groundborne vibration impacts on sensitive receptors. In some cases, for example when construction occurs within 150 feet of an existing sensitive receptor, effects may still be felt. However, due to the short-term, temporary nature of construction impacts these remaining effects would not be significant.	**General Plan Policies:** N 15.2, 16.1, 16.2 and 16.3 **New Mitigation Measure 4.15.B-N1:** Prior to the issuance of any grading permit for new development involving vibration-sensitive land uses (which shall include, but not be limited to: hospitals, residential areas, concert halls, libraries, sensitive research operations, schools and offices), the project proponent shall provide evidence to the County of Riverside that placement of such uses within the area would not exceed groundborne vibration or groundborne noise impact criteria identified by the FTA (for example, the standards shown in Table 4.15-I of this EIR) or as otherwise deemed appropriate for the situation by the County of Riverside.	Less than significant with mitigation.
Impact 4.15.C – Result in a Substantial Permanent Increase in Ambient Noise Levels: Future development associated with implementation of GPA No. 960 would contribute to an increase in traffic, resulting in a corresponding increase in traffic noise. In some cases, this would cause ambient noise levels to either exceed the threshold of acceptability (65 dBA CNEL, for example) or to become further unacceptable in areas already exceeding noise thresholds. Compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, would reduce potential impacts due to increased noise levels. For new development, full mitigation would typically be feasible. For existing noise-sensitive land uses, however, due to the widespread and pervasive nature of the noise impacts, it is generally not feasible to mitigate the impact fully for all affected receptors. Thus, this impact would be significant and unavoidable, even with the implementation of all feasible mitigation.	**Riverside County Regulations:** Riverside County Airport Land Use Compatibility Plans **Riverside County Ord. No.s:** 847 **General Plan Policies:** N 1.1, 1.2, 1.7, 2.2, 3.2, 3.5, 4.4, 6.4, 7.3, 9.3, 9.7, 10.1, 10.3, 10.4, 11.2, 11.4, 11.5, 12.1, 12.2 and 15.2; LU 16.9 and 16.10; C 3.27-3.29, 6.7, 9.4, 9.5, 13.7, 14.3, 20.8, and 23.8 **Existing EIR No. 441 Mit. Measures:** 4.13.3A, 4.13.3B, 4.13.3C, 4.13.2A, 4.13.2B, 4.13.2C and 4.13.2D	Significant and unavoidable.
Impact 4.15.D – Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels: Future development accommodated by GPA No. 960 would necessitate construction activities which could temporarily exceed applicable Riverside County standards at nearby noise-sensitive receptors. In many cases, the peak sound levels would be extremely brief and overall ambient noise levels would remain within acceptable limits. In addition, compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, would also help reduce potential short-term noise impacts. On occasion, however, construction requirements and/or the proximity of the sensitive land use (e.g., within 150 feet or less) would make significant noise impacts unavoidable, even though temporary. Because of the close distances involved for such significant impacts, mitigation of sound levels to less than significant is technologically impossible. Thus, no additional project-specific mitigation is feasible. Future development accommodated by GPA No. 960 may result in significant short-term noise impacts that would be significant and unavoidable.	**Riverside County Ord. No.s:** 847 **General Plan Policies:** N 13.1-13.4 **Existing EIR No. 441 Mit. Measures:** 4.13.1A and 4.13.1B	Significant and unavoidable.
Impact 4.15.E – Expose People to Excessive Airport-Related Noise Levels: Future development accommodated by the project, GPA No. 960, may result in the exposure of new noise-sensitive land	**Regional Regulations:** Riverside County Airport Land Use Compatibility Plans	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
uses to noise from operations at public and private airports, airstrips and helipads. Around larger public airports, noise levels can exceed acceptable standards (e.g., 60 dBA) in certain areas, as shown by noise-contour maps of existing, future and ultimate build out operational conditions for public airports. The Airport Land Use Compatibility Plan (ALUCP) adopted by the Riverside County Airport Land Use Commission (ALUC) addresses noise-related land use constraints for the various zones surrounding Riverside County's airports. All future development proposed would be required to comply with applicable ALUC policies, as well as state and county regulations and policies, regarding site design and building construction to achieve acceptable interior and exterior noise exposure levels for habitable structures. Compliance with these and other applicable standards, as well as existing mitigation measures from EIR No. 441, would ensure that airport-related noise impacts on future development pursuant to the project would be less than significant.	**General Plan Policies:** N 7.1-7.4; LU 1.8, 15.1 and 15.2 **Existing EIR No. 441 Mit. Measures:** 4.13.2A, 4.13.2B, 4.13.2C and 4.13.2D	
4.16 Parks and Recreation		
Impact 4.16.A – Increase the Use of Existing Parks of Other Recreational Facilities Resulting in Their Substantial Physical Deterioration: Future development accommodated by GPA No. 960 changes would result in population growth in certain areas within Riverside County, incrementally increasing the number of residents using existing neighborhood and regional parks, as well as other recreational facilities, including trails and bikeways, in localized areas. This use would contribute slightly, but not significantly, to the wear and tear on existing facilities. Moreover, compliance with existing state and county regulatory programs and General Plan policies would further ensure that project-related effects to existing parks or recreation facilities are less than significant.	**Riverside County Ord. No.s:** 328 and 460 **General Plan Policies:** OS 20.3, 20.5 and 20.6; LU 25.2	Less than significant.
Impact 4.16.B – Trigger Growth Effects Resulting in the Need for Additional Parks or Recreational Facilities: Future development accommodated by GPA No. 960 changes would result in population growth in certain areas within Riverside County, triggering the need for expansion of existing or development of new recreational facilities and opportunities. This need, however, would be incrementally small (less than 1%) of the overall growth expected in Riverside County over the next 50 years and would be spread throughout Riverside County for the most part. As such, impacts would be less than significant. In a few areas, population increases would be large enough locally to potentially trigger the need for a new park, trail or other recreational facility. For such locations, compliance with existing state and county regulatory programs (the Quimby Act, specifically), as well as existing General Plan policies, would ensure project-related affects to parks, trails and other recreation would be less than significant.	**Riverside County Ord. No.s:** 328 and 460 **General Plan Policies:** OS 20.3, 20.5 and 20.6; LU 25.2	Less than significant.
Impact 4.16.C – Result in Significant Adverse Environmental Effects Due to the Need for Additional Parks or Recreational Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, resulting in a small overall population increase that would contribute incrementally to the need for an additional parks and recreational uses (including trails and bikeways) within Riverside County. Where these needs are localized due to specific policy and land use changes, increased populations could result in the need for an additional park or other recreational use, the construction or expansion of which could have an	**Riverside County Ord. No.s:** 328 and 460 **General Plan Policies:** OS 20.5 and 20.6; LU 9.2, 25.1-25.4; C 4.9, 15.1-15.4, 16.1, 16.2, 16.7, 17.2, 17.3, 18.1 and 18.2	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
adverse physical effect on the environment. However, compliance with existing regulations, Riverside County ordinances, mitigation measures from EIR No. 441 and General Plan policies, as outlined throughout this EIR, would be sufficient to ensure resultant environmental impacts are less than significant.		
4.17 Public Facilities		
Impact 4.17.A – Cause Adverse Environmental Effects Due to the Need for Fire Protection Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. In terms of actual changes to existing levels of fire services, however, localized development increases would trigger the need for additional fire services in specific areas, such as the Elsinore Area Plan. Construction and operation of new or improved fire stations within these areas would be subject to a number of regulatory measures that would ensure no significant environmental impacts occur.	**Regional Regulations:** Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan **Riverside County Ord. No.s:** 659 and 787 **General Plan Policies:** LU 5.1, 5.2, 7.8 and 10.1; S 5.1-5.9, 5.11-5.21	Less than significant.
Impact 4.17.B – Cause Adverse Environmental Effects Due to the Need for Law Enforcement Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. In terms of changes to existing levels of service, however, localized development increases would incrementally create demand for additional law enforcement personnel and services in specific areas, such as the Elsinore and Palo Verde Valley Area Plans. None of these increases, however, would trigger the need for new or improved facilities in order to meet the additional demand. The additional personnel (officers, supervisors and support staff), equipment and vehicles necessary could readily be accommodated at existing facilities. Therefore, the project would not have a significant adverse effect on law enforcement services due to the need to construct new facilities. Moreover, compliance with a variety of existing regulatory programs and General Plan policies would further prevent or reduce any impacts to law enforcement service associated with the project.	**Riverside County Ord. No.s:** 469 and 556 **General Plan Policies:** LU 5.1, 5.2 and 10.1 **Existing EIR No. 441 Mit. Measures:** 4.15.2A, 4.15.2B, 4.15.2C and 4.15.2D	Less than significant.
Impact 4.17.C-1 – Adversely Affect or Exceed the Permitted Capacity of a Landfill: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses, both residential and non-residential in localized areas throughout unincorporated Riverside County. These increases, however, are to some extent offset by reductions anticipated from other proposed changes of GPA No. 960 (in particular decreases in future commercial-retail and light industrial uses). Overall, future development resulting from the project would increase the annual amount of solid waste requiring disposal in sanitary landfills by roughly 9,000 tons per year over the next 50 years (conservatively assuming only achievement of the current state-mandated 50% diversion rate, but not	**Riverside County Regulations:** Countywide Integrated Waste Management Plan **General Plan Policies:** LU 5.1, 5.2 and 31.2 **Existing EIR No. 441 Mit. Measures:** 4.15.3A, 4.15.3B 4.15.3.C, 4.15.3D, 4.15.3E and 4.15.3F	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
the 75% by 2020 reduction rate. See Table 4.17-O.). Compared to existing and projected capacities at Riverside County landfills, this amount would incrementally increase the county fill rate by roughly 0.6% overall (even conservatively assuming no additional diversion or recycling reductions). In terms of actual changes from baseline conditions, this 0.6% increase due to project-related waste generation would occur in small increments throughout Riverside County over a roughly 50-year period. For these reasons, these amounts represent insignificant incremental increases and it is projected that sufficient landfill capacity would exist to accommodate the project's future solid waste disposal needs. Accordingly, the project's impact on landfill capacity would be less than significant. Moreover, regulatory compliance, particularly mandatory recycling and diversion programs, as outlined below, would also further reduce the already insignificant impact.		
Impact 4.17.C-2 – Cause Inconsistencies With Applicable Statutes and Regulations Related to Solid Waste, Including the County Integrated Waste Management Plan: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses, both residential and non-residential in localized areas throughout unincorporated Riverside County. These increases, however, are to some extent offset by reductions in other parts of Riverside County. Project-related waste generation would increase incrementally throughout Riverside County over a roughly 50-year period. Any future development authorized pursuant to the project would be required to comply with all applicable state, federal and county requirements for solid waste disposal, including the County-wide Integrated Waste Management Plan. Accordingly, the project would not have a significant adverse impact on the implementation, attainment or compliance with any of these statutes or regulations. Moreover, regulatory compliance, as outlined in Section 4.17.4.B, would further reduce the already insignificant impact.	**Riverside County Regulations:** Countywide Integrated Waste Management Plan **General Plan Policies:** LU 5.1, 5.2 and 31.2 **Existing EIR No. 441 Mit. Measures:** 4.15.3A-4.15.3F	Less than significant.
Impact 4.17.D – Cause Adverse Environmental Effects Due to the Need for Schools: Future development consistent with GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County resulting in a comparable increase in population, including students requiring educational services. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and the associated population expected to occur within Riverside County over the next 50 years. In terms of actual changes to existing student populations and service levels, localized development increases would incrementally generate additional students creating demand for additional school facilities, services and personnel in specific areas, particularly within the Palm Springs School District, Palo Verde Unified School District and Perris Union High School District. Outside of these three districts, none of the project-related population increases would trigger the need for new or improved facilities. The additional students generated over the next 50 years could readily be accommodated at existing facilities and such districts would not have a significant impact. For the remaining three districts, however, compliance with existing laws (Senate Bill 50, in particular) and the policies of the Riverside County General Plan would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** LU 5.2	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Impact 4.17.E – Cause Adverse Environmental Effects Due to the Need for Library Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and the associated population expected to occur within Riverside County over the next 50 years. In terms of actual changes relative to baseline environmental conditions, localized new development would incrementally increase populations creating demand for additional library services—as indicated by floor space and volumes. Because the increases are spread throughout Riverside County and would occur over roughly 50 or more years, the additional 6,500 square feet of library floor space and 35,500 additional volumes needed as a result of new development potential from the project would be met through current long-range library planning and existing development impact mitigation programs (such as Ordinance No. 659). For these reasons the project would not have a significant adverse effect on library services.	**Riverside County Ord. No.s:** 659 **General Plan Policies:** LU 5.1 **Existing EIR No. 441 Mit. Measures:** 4.15.6A	Less than significant.
Impact 4.17.F – Cause Adverse Environmental Effects Due to the Need for Medical Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, resulting in a small overall population increase that would contribute incrementally (by about 6.5%) to the need for an additional community clinic and generating roughly 13,500 medical encounters. However, since the population increase would be spread throughout unincorporated Riverside County and occur over 50 years, associated impacts to medical facilities and services would be negligible. In terms of overall General Plan build out, the project would result in a net decrease of roughly 143,700 Riverside County residents. Thus, for long-range provision of needed medical facilities and services, the project would slightly lower (by roughly 8%) the expected increase in demand for new or expanded medical facilities and services over time. In total, the project would not have a significant adverse effect on medical facilities or services, nor would it cause significant adverse environmental impacts by necessitating construction of new facilities.	**General Plan Policies:** LU 5.1 **Existing EIR No. 441 Mit. Measures:** 4.15.7A and 4.15.7B	Less than significant.
Transportation and ~~Traffic~~ Circulation		
Impact 4.18.A – Conflict with an Applicable Plan, Ordinance or Policy Establishing a Measure of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel and Relevant Components of the Circulation System, Including, but Not Limited to Intersections, Streets, Highways and Freeways, Pedestrian and Bicycle Paths and Mass Transit: GPA No. 960 proposes to revise the LOS threshold for determining adverse impacts to Riverside County roadways. At present, the countywide threshold for significance is LOS C, with LOS D and E allowed in certain instances. When a roadway facility is projected to operate at a deficient LOS, this situation is often remedied by upgrading the facility designation to a higher classification, thus providing more capacity. By lowering the LOS threshold, fewer facilities would need to be upgraded in order to meet the new	**General Plan Policies:** C 1.2, 1.3, 1.7, 2.4, 2.5, 2.7 and 4.1 **Existing EIR No. 441 Mit. Measures:** 4.16.1A, 4.16.1B, 4.16.C **New Mitigation Measure 4.18.1A-N1:** As part of its review of land development proposals, the County of Riverside shall require project proponents to make a "fair share" contribution to required intersection and/or roadway improvements. The required intersection and/or roadway improvements shall be based on maintaining the appropriate level of service (LOS D or better). The fair share contribution shall be based on the percentage of project-related traffic to the total future traffic. **New Mitigation Measure 4.18.1B-N1:** As part of its review of land	Significant and unavoidable.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
proposed LOS target. However, even with the lower LOS threshold and upgrades in roadway classifications, several roadways are still projected to operate at a deficient LOS. In addition, a number of roadways that would operate at an acceptable LOS if their classification were upgraded, cannot be upgraded due to physical or environmental constraints. Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County relative to existing conditions, and increase travel demand within Riverside County. Compliance with existing laws, rules, regulations and policies, both existing and proposed, together with revisions to the Circulation Element for Riverside County will reduce impacts to the maximum extent feasible and practical; however, even with these measures impacts to the Riverside County roadway system will be significant and unavoidable.	development proposals, the County of Riverside shall ensure sufficient right-of-way is reserved on critical roadways and at critical intersections to implement the approach lane geometrics necessary to provide the appropriate levels of services. **New Mitigation Measure 4.18.1C-N1:** Where needed and where appropriate, the County of Riverside shall seek ways and means to increase the capacity of Circulation Element roadways by such measures as adding through travel lanes or additional turning lanes without increasing the right-of-way width requirement for the classification of the facility **New Mitigation Measure 4.18.1D-N1:** Where needed and where appropriate, the County of Riverside shall collaborate with Caltrans and other appropriate agencies to add auxiliary and mainline lanes on the freeway system within available right of way. **New Mitigation Measure 4.18.1E-N1:** The County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop direct connections between the HOV/HOT lanes at the following freeway interchanges: I-15 at SR-91, SR-60 at SR-91/I-215 West junction, SR-60 at I-215 East junction and at other locations as needed. To the extent that such improvements may be possible within existing rights-of-way, environmental impacts would be less than significant. **New Mitigation Measure 4.18.1F-N1:** Where appropriate, the County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop HOV lanes along the entire length of I-215 within Riverside County and along I-10 between the San Bernardino County line and Indio.	
Impact 4.18.B - Conflict with an Applicable Congestion Management Program, Including, but Not Limited to Level of Service Targets and Travel Demand Measures, or Other Targets Established by the County Congestion Management Agency for Designated Roads or Highways: The local Congestion Management Program (CMP) is administered by the RCTC. The level of significance established in the CMP is LOS E. If a facility fails to operate at LOS D or better the local responsible agency is required to develop and implement a deficiency plan intended to bring the facility into compliance. The program also establishes criteria for the development of transportation models to evaluate future traffic conditions, as well as monitoring criteria to evaluate existing system operation and performance, and includes criteria for the analysis of development impacts on the CMP network of regionally significant roadways. Riverside County is in compliance with the applicable CMP and has policies to address impacts to regional roadways. GPA No. 960 will not adversely affect the local CMP and does, in fact, include policies to support the goals and objectives of the CMP. Therefore, the impact is considered less than significant.	**General Plan Policies:** C 7.3 and 7.4	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
Impact 4.18.C - Result in a Change in Air Traffic Patterns, Including Either an Increase in Traffic Levels or a Change in Location that Results in Substantial Safety Risks: Riverside County has 16 municipal airports located throughout the county. One of these facilities is the March Air Reserve Base, which not only serves military aircraft and missions, but also has a civilian component. In addition, the County of Riverside has developed a Land Use Compatibility Plan for the Chino Airport. Although Chino Airport is situated within the County of San Bernardino, it is included within the Riverside County Airport Land Use Compatibility Plan because its impacts extend into Riverside County. Palm Springs International Airport is the only airport in Riverside County that has regularly scheduled commercial passenger flights. Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. Compliance with existing laws, rules and regulations, including the Riverside County Airport Land Use Compatibility Plan would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** C 14.1 and 14.6	Less than significant.
Impact 4.18.D – Alter Waterborne or Rail Traffic: Riverside County does not have navigable waterways providing transport of people and goods. Therefore, the Circulation Element does not contain any policies related to waterborne travel. A number of intercontinental railway facilities do pass through Riverside County. These rail lines carry a substantial amount of produce and goods. In addition, many of these same rail lines service rail passengers within the region, accommodating such services as Amtrak and Metrolink. Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. Compliance with existing laws, rules and regulations would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** C 13.1, 13.4 and 13.7	Less than significant.
Impact 4.18.E - Substantially Increase Hazards Due to a Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment): Riverside County policies and design standards currently reflect state and federal rules, regulations and standards with respect to roadway design. Nothing proposed in GPA No. 960 would alter roadway design criteria. Several new policies will reinforce Riverside County's commitment to public safety in roadway design. Compliance with existing laws, rules and regulations would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** C 3.4, 3.23 and 6.5	Less than significant.
Impact 4.18.F - Cause an Effect Upon, or a Need for New or Altered Maintenance of Roads: Future development accommodated by GPA No. 960 would result in the construction of new roadways to service this growth. Compliance with existing laws, rules, regulations, policies and design standards would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** C 3.1, 3.2 and 8.4	Less than significant.
Impact 4.18.G - Cause an Effect Upon Circulation During the Project's Construction: No specific construction projects are proposed as a part of GPA No. 960. The amendment does, however, set the parameter for future construction of the General Plan network. Construction impacts will be evaluated and appropriate control measures enforced at the time of construction.	**General Plan Policies:** C 8.4, 20.6 and 20.15	Less than significant.
Impact 4.18.H - Result in Inadequate Emergency Access or Access to Nearby Uses: Current and proposed policies require provisions for adequate emergency access. Compliance with existing laws, rules, regulations, policies and design standards would be sufficient to ensure that this impact is	**General Plan Policies:** C 3.24	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
less than significant.		
Impact 4.18.I - Conflict with Adopted Policies, Plans or Programs Regarding Public Transit, Bikeways or Pedestrian Facilities, or Otherwise Substantially Decrease the Performance or Safety of Such Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, thus, increasing the demand for alternative modes of transportation. GPA No. 960 provides multiple policies which are intended to promote the provision of alternative transportation facilities. Compliance with existing and proposed policies would be sufficient to ensure that this impact is less than significant.	**General Plan Policies:** C 1.2, 1.3, 4.1, 4.2, 4.6, 16.1 and 17.1	Less than significant.
4.19 Water Resources		
Impact 4.19.A – Result in Insufficient Water Supply: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in demand for water supplies where such are insufficient or unavailable to serve the project from existing entitlements and resources, thus necessitating new or expanded entitlements in order to adequately serve future development, or result in development in locations in which water supply adequacy cannot be ascertained. Due to the unavailability of potable water in some areas, as well as the variability and unpredictability of supply adequacy in light of future growth, as well as environmental and regulatory constraints, adequate water supplies for all forecast future development cannot be assured. As a result, within certain areas of Riverside County where sufficient water supply is not available or cannot be assured into the future, impacts would be significant and unavoidable.	**Riverside County Ord. No.s:** 458, 592, 617, 650, 682, 856, 859 and 871 **General Plan Policies:** OS 1.1, 1.3, 1.4, 2.1-2.5 and 18.1-18.6; LU 5.3, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.17.1C, 4.17.1D, 4.17.1E	Significant and unavoidable.
Impact 4.19.B – Substantially Deplete Groundwater Supplies or Interfere Substantially With Groundwater Recharge: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would increase population within Riverside County, triggering increased water demands on areas relying on groundwater supplies. This is particularly likely in areas of Riverside County without municipal water service or other access to imported water supplies or where new development would rely solely on groundwater for supply. Increased and new uses may also conflict with groundwater management plans, monitoring programs or lead to groundwater extractions that individually or cumulatively exceed the groundwater basins' safe yields or cause a net deficit in the aquifer volume or reduction in the local water table level. In addition, there is the potential for future development accommodated by the project to occur in vacant areas that are currently available for groundwater recharge. Development of such areas would reduce the area available for aquifer recharge and could substantially interfere with groundwater recharge. A number of regulatory policies and programs address groundwater impacts. However, where groundwater recharge is insufficient, such increased demand on aquifers would result in significant and unavoidable impacts.	**Riverside County Ord. No.s:** 682, 856 and 871 **General Plan Policies:** OS 1.1, 1.3, 1.4, 2.1 - 2.5, 3.4-3.7, 4.1-4.3, 4.4-4.6, 4.8 and 18.1-18.6; LU 5.3, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.17.1C, 4.17.1D, 4.17.1E, 4.17.2A and 4.17.3A	Significant and unavoidable.
Impact 4.19.C – Substantially Degrade Water Quality: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in an increased reliance on lower-quality water sources either from the Colorado River or marginal groundwater	**Riverside County Ord. No.s:** 427, 457, 458, 592, 617, 629, 650, 682, 754, 830, 843, 856 and 871 **General Plan Policies:** OS 3.1-3.7, 6.1 and 6.3; LU 9.1, 9.2 and 9.4	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
sources and would contribute to increased levels of pollutants in local/regional groundwater reserves and local/regional surface waters. These conditions would contribute to the deterioration of the quality of drinking water in Riverside County. Compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, however, would be sufficient to ensure that this impact is less than significant.	**Existing EIR No. 441 Mit. Measures:** 4.17.5A, 4.17.5B, 4.17.5C, 4.17.5D and 4.17.5E	
Impact 4.19.D – Violate Water Quality Standards or Waste Discharge Requirements: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in alterations to existing hydrology, increases in impervious surfaces and increases in urban runoff. Such changes would increase the discharge of pollutants into receiving waters if not properly managed and controlled. Thus, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 is necessary to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 457, 458, 592, 617, 629, 650, 682, 754, 843, 856 and 871 **General Plan Policies:** OS 3.1-3.7, 6.1, 6.3; LU 9.1, 9.2 and 9.4 **Existing EIR No. 441 Mit. Measures:** 4.10.9A, 4.17.5A, 4.17.5B, 4.17.5C, 4.17.5D and 4.17.5E	Less than significant.
Impact 4.19.E – Exceed Wastewater Treatment Requirements: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to increase the amount of people and structures generating wastewater. Wastewater requires proper treatment to ensure it does not adversely affect receiving waters, for example, by elevating pollutant levels or introducing pathogens. Receiving waters are protected through Riverside County's compliance with and enforcement of its NPDES MS4 permits, as well as other permits required for a wide variety of activities with potential to discharge wastes into Waters of the State or U.S. These include construction and operational activities, operation of MS4s (municipal separate storm sewer systems) and industries that produce wastewater. Compliance with the NPDES program and permits, as well as other laws, regulations, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 457, 458, 461, 592, 617, 650, 754, 843 and 856 and 871 **General Plan Policies:** OS 3.1-3.7; LU 5.3, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.10.9A, 4.15.4A, 4.17.5A and 4.17.5E **New Mitigation Measure 4.19.E-N1:** Conventional septic tanks/subsurface disposal systems shall be prohibited within any designated Zone A of an EPA wellhead protection area. Where a difference between Riverside County and EPA septic tank setback distance requirements exists, the more restrictive standard shall apply.	Less than significant.
Impact 4.19.F – Exceed Wastewater Treatment Capacity: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to contribute to increased generation of wastewater needing treatment, the provision of which could exceed the existing capacity of the treatment facility. In addition, where sanitary sewer connection and treatment are not available, septic systems would be necessary. The proliferation of septic systems in rural communities may potentially contaminate groundwater with nitrates, ammonia, salts, metals, organic solvents, grease and oil and other substances, impairing the beneficial uses of local water supplies. Compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 would be sufficient to ensure that impacts associated with wastewater treatment capacities are less than significant.	**Riverside County Ord. No.s:** 458, 592, 650, 754, 843, 856 and 871 **General Plan Policies:** OS 3.1-3.3; LU 5.3, 21.2, 22.2, 22.8, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.9.1C, 4.10.9A, 4.15.4A, 4.17.5D, and 4.17.5E	Less than significant.
Impact 4.19.G – Result in Significant Adverse Effects Due to the Construction of New or Expanded Water or Wastewater Facilities: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in increased demand for water supply, wastewater treatment and infrastructure to supply these services. These increases would contribute incrementally to the need for new or expanded water and wastewater treatment	**Riverside County Ord. No.s:** 592, 650, 682 and 843 **General Plan Policies:** OS 1.1, 1.3, 1.4, 2.1-2.5, 3.1-3.3 and 18.1-18.6; LU 5.3, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.17.1C, 4.17.1D and 4.17.5A	Less than significant.

Issues / Impacts	Policies and/or Mitigation Measures[1]	Level of Significance After Mitigation[1]
facilities. Since the project would be implemented on a case-by-case basis across many individual sites spread across Riverside County over roughly 50 years, however, it would not result in significant impacts tied to specific, inalterable areas. Rather, the future locations of such facilities can be established (located) so as to minimize potential environmental effects. Further, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.		
Impact 4.19.H – Substantially Alter Existing Drainage Patterns Resulting in Substantial Erosion or Siltation: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to increase water erosion, sedimentation and siltation of surface water. This includes short-term construction impacts, as well as long-term operational impacts. Future development also has the potential to threaten, damage or change hydrologic baseline conditions throughout Riverside County over time. However, compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 457, 458, 461, 659, 754 and 859 **General Plan Policies:** OS 1.4, 2.1-2.5, 3.1-3.7, 4.4-4.6, 4.8, 6.1, 6.3 and 18.1-18.6; LU 9.1, 9.2 and 9.4 **Existing EIR No. 441 Mit. Measures:** 4.9.1C, 4.9.1D, 4.9.2C, 4.10.9A, 4.10.9B, 4.10.9C, 4.17.4A, 4.17.4B, 4.17.4C, 4.17.5B, 4.17.5D and 4.17.5E	Less than significant.
Impact 4.19.I – Cause Runoff Exceeding Stormwater Drainage System Capacity or Cause Substantial Water Pollution: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in the development of vacant lands within Riverside County. The addition of impervious surfaces from this development would increase stormwater runoff throughout Riverside County. In some areas, existing drainage facilities may not be adequate to accommodate the increase. However, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 457, 461, 592, 650, 659, 754, 843 and 859 **General Plan Policies:** OS 1.4, 2.1-2.5, 3.1-3.7, 4.4-4.6, 4.8, 6.1, 6.3 and 18.1-18.6; LU 5.3, 9.1, 9.2, 9.4, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6 **Existing EIR No. 441 Mit. Measures:** 4.9.1.D, 4.9.2C, 4.10.9A, 4.10.9B, 4.10.9C, 4.17.5B and 4.17.5E	Less than significant.
Impact 4.19.J – Cause Significant Adverse Effects Due to the Need for New or Expanded Stormwater Drainage Facilities: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in the development of vacant lands within Riverside County. The addition of impervious surfaces would increase the potential stormwater runoff from areas throughout Riverside County. Existing drainage facilities may not be adequate to accommodate future potential increases in stormwater runoff. Additional storm drain capacity and facilities may be necessary. It is feasible, however, for such future facilities to be planned, sited and constructed in a manner that minimizes potential environmental effects. In addition, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.	**Riverside County Ord. No.s:** 457, 458, 461, 592, 650, 659, 754 and 843 **General Plan Policies:** OS 2.1, 3.4-3.7, 6.1, 6.3 and 18.1-18.6; LU 9.1, 9.2 and 9.4 **Existing EIR No. 441 Mit. Measures:** 4.9.1.D, 4.10.9A, 4.10.9B, 4.10.9C, 4.17.4A, 4.17.4B, 4.17.4C, 4.17.5D and 4.17.5E	Less than significant.

Footnotes:

1. Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA, regulatory compliance, including measures such as enforcement of existing Riverside County ordinances and prior-adopted mitigation from EIR No. 441, as well as existing and proposed Riverside County General Plan policies is assumed under CEQA. Further, the State CEQA Guidelines (CCR Section 15126.4(a)(3)) states, "mitigation measures are not required for effects which are not found to be significant." Thus, only those measures identified as "New Mitigation Measures" herein are deemed mitigation for the purposes of avoiding, reducing or minimizing a significant impact. Impacts fully mitigated through the implementation of the listed new mitigation measures are deemed "Less Than Significant With Mitigation."

Source: Riverside County Planning Dept., EIR No. 521, Sections 4 and 5, 2013.

Cumulative Impacts

In addition to the impacts listed in Table 1.0-B, Summary of Proposed Project Impacts and Mitigation, the project would also result in a "Cumulatively Considerable" contribution toward various significant cumulative impacts as analyzed in Section 5.0, Additional Required CEQA Topics. The project would result in Cumulatively Substantial/Significant Impacts for Population and Housing, Aesthetic and Visual Resources, Agricultural and Forestry Resources, Air Quality, Greenhouse Gases, Cultural and Paleontological Resources, Energy Resources, Geology and Soils, Hazardous Materials and Safety, Noise, Parks and Recreation, Public Facilities, Transportation and Traffic, and Water Resources. The project would also result in Significant Growth Inducing Impacts, as well as Significant Irreversible Commitments. For an analysis of these cumulative Impacts, refer to Section 5.0, Additional Required CEQA Topics.

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Section 2.0

Introduction

Section 2.0 Introduction

2.1 Purpose of the Program Environmental Impact Report

In compliance with the California Environmental Quality Act (CEQA), this Program Environmental Impact Report (EIR No. 521, State Clearinghouse No. 2009041065) describes the environmental consequences associated with implementation of the Riverside County General Plan as updated and revised by the 5-Year Comprehensive Update Project, General Plan Amendment No. 960 (GPA No. 960). 'Project' or 'proposed project,' herein. This EIR is intended to fully inform decision-makers in Riverside County, other responsible and trustee agencies, and the general public of the potential environmental consequences of approval and implementation of the proposed project. The EIR addresses the changes associated with the proposed project, their effects on the existing General Plan, including projected county build out and, in particular, potential effects on the existing physical environment expected from implementation of the changes. The EIR addresses project-related changes to General Plan land uses, policies and maps, as well as changes related to environmental resources. It analyzes the mitigation value of compliance with existing federal, state and local regulations, including existing and proposed General Plan policies. And, where necessary, it also includes specific CEQA mitigation measures to reduce or avoid significant impacts. Lastly, this EIR also examines growth-inducing impacts, cumulative impacts and various alternatives to the proposed project.

This Program EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code [PRC], Section 21000, *et seq.*), and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000, *et seq.*). Pursuant to the provisions of CEQA and the State CEQA Guidelines, the County of Riverside is the Lead Agency for the proposed project described herein and is charged with the responsibility of deciding whether or not to approve the proposed project. According to Section 15002 of the State CEQA Guidelines, the basic purpose of CEQA is to:

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Accordingly, this EIR will be used by Riverside County staff and the public in their review of the revisions to the General Plan proposed under GPA No. 960. It may also be used by other agencies, including responsible and trustee agencies, in their decision making.

This EIR is a 'Program EIR,' evaluating the broad-scale impacts of the proposed project, GPA No. 960. Program EIRs are typically prepared for an agency plan, program or series of actions that can be characterized as one large project, such as a general plan. A General Plan EIR, addressing the impacts of countywide and local policy decisions, can be thought of as a "first tier" document (State CEQA Guidelines, Section 15152). It evaluates the large-scale impacts on the environment that can be expected to result from revision of the General Plan pursuant to the proposed project, but does not necessarily address the site-specific impacts of each of the individual development projects that would follow in the future implementation of the updated General Plan. CEQA requires each of those subsequent development projects be evaluated for their particular site-specific impacts. Such site-specific analyses are typically encompassed in second-tier documents, such as Project EIRs, Focused EIRs or Negative Declarations for individual development projects subject to the General Plan. They typically evaluate the impacts of a single activity undertaken to implement the overall plan.

According to the State CEQA Guidelines, a Program EIR is one that may be prepared on a series of actions that can be characterized as one large project and that are related: (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with the issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program; or, (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar effects that can be mitigated in similar ways. The proposed project falls within all of these criteria. It addresses land use and development proposals and changes with effects across the expanse of unincorporated Riverside County, thus indicating a basic geographic relationship. The project includes maps, goals, policies and actions that would be logical parts of a chain of contemplated actions governing the orderly development of land uses in Riverside County over time. The proposed policies and actions either directly establish or would govern future plans that establish or revise rules, regulations, plans or other criteria governing implementation of the General Plan as revised per GPA No. 960. Future implementing actions associated with the project would be carried out under the authority and approval of Riverside County. Lastly, many of the specific future projects and actions subsequently carried out pursuant to the updated General Plan would have a similar range of environmental impacts to which similar programmatic means of mitigation would be warranted.

There are several advantages to a Program EIR. It provides a more thorough consideration of regional influences, secondary effects, cumulative impacts, land use and policy alternatives, global climate change mitigation and other factors that apply to the program as a whole. Program EIRs avoid duplicative reconsideration of basic policy considerations. They allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at a time when the agency has greater flexibility to deal with fundamental issues and, in particular, cumulative effects.

Subsequent projects approved or undertaken pursuant to a program EIR may still require additional environmental review. This would be determined by the County of Riverside on a project-by-project basis, based on the details and specifics of the project and its site, and appropriate subsequent analysis. However, program EIRs also allow subsequent environmental reviews to focus on issues unique to the site that were not specifically addressed in the program EIR. This allows decision makers and interested parties to focus on the CEQA analysis of the subsequent project's new effects not previously considered. The parameters by which a lead agency can determine the need for additional environmental documentation are outlined in the State CEQA Guidelines, Sections 15160 to 15170.

Thus, EIR No. 521 addresses amendment of the existing General Plan pursuant to GPA No. 960, which is the proposed project. The EIR anticipates a series of actions needed to achieve the implementation of the proposed updated General Plan. Further actions or procedures expected to be associated with the proposed project include the processing of zoning plans, specific plans, subdivision maps, site design plans, building permits and grading permits.

To keep the analysis of impacts in this Program EIR in perspective, the County of Riverside covers a territory of nearly 7,300 square miles – nearly the size of the State of New Jersey. It includes well-established urban, suburban and rural communities, and has an extensive array of agricultural lands, mining uses and recreational areas. There are rugged mountains, flat valley areas, open desert and expansive natural open space areas. The variety of geographic zones has an influence on climate which, in turn, affects biodiversity, energy usage (such as for air conditioning and heating), water usage (for agriculture and landscaping), wildfire hazards, flood hazards, air quality (heat, wind patterns, topography), water quality (natural salinity and groundwater recharge) and soil types (prime farmland) within the county. In addition, Riverside County contains vast expanses of federal and Native American lands and 26 incorporated cities that are not under the land use control of the County of Riverside.

The analysis in a Program EIR for a county of this size is not intended to be site-specific (e.g., determining the level of service for specific road intersections within the county), but rather a broader analysis. For instance, the traffic analysis determines whether the roadway widths proposed in the General Plan Circulation Element would accommodate the planned land uses. The Program EIR does not, however, determine fair-share roadway improvements for individual future development projects. Such fair-share improvements associated with future development must be determined during subsequent environmental review on a case-by-case basis.

Furthermore, EIR No. 521 is the primary reference document for the formulation and implementation of a mitigation monitoring program for the proposed project. Environmental impacts cannot always be mitigated to a level that is considered less than significant. In accordance with Section 15093(b) of the State CEQA Guidelines, if a lead agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project based on the final CEQA documents and any other information in the public record for the project. This is defined in Section 15093 of the State CEQA Guidelines as a "statement of overriding considerations."

2.2 Program EIR Scope, Contents and Organization

Riverside County has determined, based on findings of the Initial Study, that an EIR is required to address potentially significant effects that may result from implementation of the proposed project. The scope of the EIR also includes environmental issues identified by agencies and the general public in response to the NOP and subsequent scoping sessions. Hence, the environmental topics listed in Table 2.0-A (CEQA Topics and Locations within EIR No. 521), below, are addressed in this EIR in the locations indicated. EIR No. 521 consists of two basic documents collected into several volumes: the first document contains the text of the Draft Program EIR No. 521, the second document encompasses the technical appendices that accompany and support the Draft EIR. To further assist the reader's review of the document, the following briefly describes the Program EIR's format.

Section 1.0 – Summary: This section contains a summary of the Draft EIR's findings and CEQA processes. It also includes a brief summary of the proposed project, areas of controversy, public review procedures and a summary table listing all project impacts and mitigation measures recommended to reduce significant impacts of

the project and the level of significance of each impact following mitigation. The section also provides a summary of the project alternatives analysis.

Section 2.0 – Introduction: This section describes the EIR's purpose, legal requirements and intended use. It also has an outline of the document and a list of the environmental issues discussed.

Section 3.0 – Project Description: This section details the specific items included in proposed GPA No. 960, including changes in text, policy and maps for a variety of locations within both the General Plan Elements and its 19 attendant Area Plans.

Section 4.0 – Environmental Impacts and Mitigation: This section forms the main body of the EIR and provides environmental analyses of the proposed project. It includes discussion of environmental conditions and existing setting for each resource, anticipated effects associated with the project action, analysis of the resultant impacts and discussion of the applicable means for mitigation of these impacts (via regulatory compliance, Riverside County ordinance and policies, CEQA-specific mitigation measures, etc.). Section 4.0 is organized by environmental topic (e.g., aesthetics, air quality, noise). Section 4.1 describes the methodology and assumptions generally used.

Section 5.0 – Additional Required CEQA Topics: This section contains the additional topics required by CEQA, including unavoidable effects of the proposed project, significant irreversible environmental changes, growth-inducing impacts, cumulative impacts and consistency with regional plans.

Section 6.0 – Alternatives: This section contains discussion of alternatives to the project. As allowed by CEQA, most of the impacts of these alternatives are evaluated at a more general level than the project analyses contained in Section 4.0. Among others, this section includes evaluation of the effects of the 'No Build' alternative (in which no development is assumed to occur) and the 'No Project' alternative (essentially the 'status quo' alternative, in which GPA No. 960 is assumed not to have occurred and the existing General Plan builds out unchanged). Lastly, the environmentally superior alternative is identified.

Sections 7.0 – References: This section contains a number of items related to the preparation of the EIR itself, including: a listing of the organizations and persons consulted in preparation of the EIR, the names of the EIR preparers and a bibliography of documents and sources referenced.

Section 8.0 – Glossary: This section presents a glossary and list of acronyms encountered within the EIR in order to help clarify the many technical terms used.

Technical Appendices: The Draft EIR contains a number of appendices to the EIR, which are encompassed in the second set of volumes comprising the Draft EIR. They include the following: Appendix EIR-1 encompasses the various CEQA–related items that contribute to the preparation of this EIR, including the Initial Study, Notice of Preparation and resultant comment letters, as well as any other relevant correspondence received during the course of EIR preparation. It also includes in Appendices EIR-2 through EIR-11 the technical reports, studies and supporting data used for the analyses within the EIR, when such studies are not appended directly to the General Plan.

Appendix EIR-1: Project CEQA Documentation (Initial Study, NOP, NOP Responses)

Appendix EIR-2: Land Use Tables

Appendix EIR-3: Aesthetics Inventory

Appendix EIR-4: Traffic Study

Appendix EIR-5: Air Quality Study

Appendix EIR-6: Greenhouse Gas Technical Report

Appendix EIR-7: Noise Study and Impacts Analysis

Appendix EIR-8: Background and Supplemental Water Data

Appendix EIR-9: Background and Supplemental Biological Data

Appendix EIR-10: Air Quality and Greenhouse Gas Addendum

Appendix EIR-11: Cumulative Data

Table 2.0-A: CEQA Topics and Locations within EIR No. 521

Topic	EIR Location
Agricultural Resources *	Section 4.5
Forestry	Section 4.5
Land Use and Planning*	Section 4.2
Housing and Population *	Section 4.3
Aesthetics and Visual Resources *	Section 4.4
Air Quality *	Section 4.6
Greenhouse Gases and Climate Change	Section 4.7
Biological Resources *	Section 4.8
Cultural Resources *	Section 4.9
Energy Resources	Section 4.10
Flooding and Dam Inundation Hazards *	Section 4.11
Geology, Slope Stability and Soils*	Section 4.12
Hazardous Materials and Safety *	Section 4.13
Hydrology *	Section 4.19
Emergency Response and Preparedness *	Section 4.13
Mineral Resources *	Section 4.14
Noise *	Section 4.15
Parks and Recreation *	Section 4.16
Public Services and Utilities *	Section 4.17
Traffic, Transportation and Circulation *	Section 4.18
Water Resources (Including Water Supply) *	Section 4.19
Cumulative Impacts *	Section 5.5
Significant Unavoidable Impacts	Section 5.1
Significant Irreversible Effects	Section 5.2
Alternatives to the Proposed Project**	Section 6.0
Mandatory CEQA Elements	Section 5.0
Substantial Human Effects*	Section 5.3
Growth-Inducing Impacts of the Proposed Project**	Section 5.4
Regional Impacts	Section 5.6
References	Section 7.3
Persons and Agencies Consulted	Section 7.2
List of Preparers	Section 7.1
CEQA Documents (IS, NOP, etc.)	Appendix EIR-1
Population and Employment Forecasts	General Plan Appendix F-1
Significant Environmental Effects of the Proposed Project**	Section 5.1 (and summary in Table 1.0-B)

Topic	EIR Location
Significant Environmental Effects Which Cannot Be Avoided if the Proposed Project is Implemented**	Section 5.1 (and summary in Table 5.0-A)
Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should It be Implemented**	Section 5.2
Mitigation Measures Proposed to Minimize Significant Effects**	Sections 4.2-4.19, 5.1-5.5 (and Table 1.0-B)

* Identified as potentially significant in the Initial Study for this project.
** Topics mentioned in CCR Section 15126.

2.3 Initial Notices, Public Outreach and Community Involvement

To further the basic purposes of CEQA, the environmental review process requires the preparation and public circulation of several documents. These include, in addition to the Program EIR, a Notice of Preparation (NOP) and an Initial Study (IS).

Riverside County formally initiated the environmental process for this project with circulation of an NOP, which was sent to responsible and trustee agencies, as well as interested parties, for a 30-day review period from April 13 to May 13, 2009. An NOP is a brief notice that the Lead Agency plans to prepare an EIR for a project. The purpose of the NOP is to solicit guidance from agencies and individuals as to the scope and content of the environmental information to be included in the EIR. Within 30 days after receiving the NOP, responsible agencies are to provide the Lead Agency with specific detail about the scope and content of the environmental information related to the responsible agency's area of statutory responsibility. This information is to be included in the Draft Program EIR. A total of 29 comments were received by the County of Riverside and have been taken into account during the preparation of this EIR. The NOP and the responses to the NOP from agencies and individuals are included in Appendix EIR-1 of this EIR. The letters received in response to the NOP are also summarized below. Along with the NOP, an Initial Study for the proposed project was circulated on March 13, 2009. It is also included in Appendix EIR-1.

A. CEQA Notice of Preparation Comments

Once the County of Riverside determined that the potential for significant impacts existed with the proposed project and that preparation of an Environmental Impact Report (EIR) was necessary, a Notice of Preparation (NOP) was prepared and distributed pursuant to requirements of CEQA.

The NOP was issued for a 30-day comment period on April 13, 2009, to the State Clearinghouse, responsible agencies and other interested parties. The NOP and Initial Study were also posted (and remain) online at the Riverside County Planning Department's website at ***http://planning.rctlma.org***.

The objective of distributing the NOP was to solicit public comment to aid in identifying the full range and scope of issues of concern so that these issues might be fully examined in the EIR. Thirty comments responding to the NOP were received during the comment period. These comments are summarized below. The Initial Study, NOP, distribution list and all NOP comments received by the County of Riverside are included in EIR Appendix A-1. The following summarizes the NOP comments received:

Morongo Band of Mission Indians: Letter dated April 15, 2009, from Franklin A. Dancy, Project Manager. Commented that the project area is within territory that may be considered a traditional use area or one with cultural ties to the Tribe. Tribe requests the County impose standard conditions regarding cultural and archaeological resources, as well as buried cultural materials. The standard conditions are outlined in the letter.

City of Chino Hills: In a letter dated April 16, 2009, Christine Kelly, Community Development Director, requested a copy of the Draft EIR once it was released.

South Coast Air Quality Management District: In a letter dated April 17, 2009, Steve Smith, Program Supervisor of the CEQA Section, Planning, Rule Development and Area Sources, requested an electronic copy of the Draft EIR and all appendices and technical documents related to air quality and its analysis. The SCAQMD also provided information and resources on air quality analysis, recommended mitigation measures and data sources.

California Emergency Management Agency, Disaster Assistance Programs Branch: In a letter dated April 20, 2009, Environmental Officer Dennis Castillo outlined specific state planning law citations addressing identification and analysis of hazards. He also recommended the County of Riverside examine each of these requirements and determine if hazard issues exist. He also suggested including a table in the Draft EIR to identify specific issues and where they are addressed in the General Plan.

City of Colton: In a letter dated April 20, 2009, Duane Morita requested a larger scale map showing proposed General Plan land uses along Riverside County's northern boundary (where it abuts Colton) near Highgrove and Interstate 215, specifically detailing parcel-specific changes C8-4 and C6-6.

City of Loma Linda, Community Development Dept., Planning Division: In a letter dated April 21, 2009, Raul Colunga, Assistant Planner, wrote to say the city had no comments.

Mojave Desert Air Quality Management District: In a letter dated April 21, 2009, Alan J. De Salvio, Supervising Air Quality Engineer, stated the District concurs with the scope of activities to be evaluated in the EIR regarding air quality, transportation and traffic.

Coachella Valley Archaeological Society: In a letter dated April 21, 2009, Julia Weaver, Secretary and Environmental Coordinator, recommended all CEQA, County of Riverside, state and federal regulations for prehistoric and historic cultural resources be followed during the GPA process.

City of Riverside: In a letter dated April 30, 2009, Planning Director Ken Gutierrez noted that the City of Riverside had recently completed its comprehensive update of its own general plan. He explained that, by Riverside County request, the City of Riverside incorporated an implementation tool ('Tool 10') into its General Plan to address sphere of influence consistency with Riverside County's General Plan. Changes to both the City's and County's General Plans were needed to address consistency in this area; Mr. Gutierrez suggested Riverside County's General Plan update project as a possible opportunity to further these consistency efforts.

California Department of Transportation (CalTrans), Division of Aeronautics: In a letter dated May 4, 2009, Sandy Hesnard, Aviation Environmental Specialist, stated CalTrans had reviewed the NOP with respect to airport-related noise and safety impacts, as well as to regional aviation land use planning issues. The author noted that GPAs must be submitted to Riverside County Airport Land Use Commission in accordance with the California Public Utilities Code (PUC) Section 21676 *et. seq.* It was also noted that CEQA (PRC Section 21096) requires the California Airport Land Use Planning Handbook be used as a resource in preparation of environmental documents for projects within airport land use compatibility plan boundaries. The letter emphasized that a General Plan must demonstrate adherence with ALUC policies regarding compatibility criteria compliance and stated that protecting airports from incompatible land use encroachment is vital to California's economic future. Other comments in the letter addressed aircraft noise level thresholds, mitigation measures for cumulative noise impacts associated with roadways and railway lines, Federal Aviation Regulation Part 77 criteria,

buyer notification requirements for lands around airports, proposed school sites and restricting land use practices attracting or sustaining hazardous animals within the vicinity of the airport.

U.S. Dept. of Homeland Security, FEMA Region IX: In a letter dated May 4, 2009, Gregor Blackburn, Branch Chief, requested the County of Riverside review the current effective countywide Flood Insurance Rate Maps, revised August 28, 2008. The letter also provided a summary of the National Flood Insurance Program floodplain management building requirements and contact information.

Riverside Transit Agency: In a letter dated May 4, 2009, Planning Communications Specialist Mike McCoy summarized the RTA's comments from the scoping meeting held that same day. He suggested key points for the EIR to promote safe, convenient and reliable transit resources in communities (such as identifying current and proposed bus routes and other transit issues, green alternatives to current modes of transportation, best practices for transit planning, etc.). He also noted the need for ADA-compliant bus stops along existing bus routes.

Southern California Association of Government (SCAG): In a letter dated May 4, 2009, Jacob Lieb, Manager, briefly outlined SCAG's role as a CEQA reviewing agency. He noted that SCAG considers the proposed project regionally significant per State CEQA Guidelines. Lastly, the letter provided information on SCAG's Regional Transportation Plan and Compass Growth Vision, and also requested a minimum of 45 days for review of the Draft EIR.

Friends of the Northern San Jacinto Valley: In a letter dated May 4, 2009, Conservation Co-Chair Susan Nash noted that the maps provided with the NOP did not show the San Jacinto Wildlife Area, Mystic Lake or the San Jacinto River course. It outlined two concerns with the Lakeview Nuevo Area Plan. First, that the County of Riverside is processing a GPA for the Villages of Lakeview, but neither that project nor this proposed project acknowledges the other. Secondly, they are concerned that studies regarding the San Jacinto River be addressed as one study area (and not split amongst Area Plans, etc.). Ms. Nash also noted that all the proposed projects involving large areas of agriculture in the San Jacinto Valley should be addressed in one planning area (to properly account for cumulative effects). She noted that the San Jacinto Valley and the San Jacinto River should be identified as one planning area and clearly shown on maps, as should the various cities' spheres of influence. Lastly, Ms. Nash noted that the County's Climate Action Plan and policies addressing AB 32 and SB 375 must be prepared first, with all other planning actions following.

City of Riverside: In a letter dated May 5, 2009, Planning Director Ken Gutierrez, noted that the NOP URL links listed in the Public Courtesy Notice for NOP were incorrect, though the documents are available on Riverside County's website. Mr. Gutierrez requested the County of Riverside provide a complete analysis for each instance where a GPA within the city sphere of influence over the past five years did not meet the Certainty System guidelines. He then requested the proposed density and intensity changes be analyzed for Western Riverside County MSHCP 'rough step analysis' conformance. He noted that the proposed sphere of influence policy would be critical for giving cities greater control over land use decisions within their spheres of influence. He also wanted to see the policies contained within the MSHCP's implementing MOU be added to the General Plan, as well as policies requiring development impacts to cities be appropriately mitigated. He suggested 'Smart Growth Principles' and 'Sustainable Design Principles' be used to reduce vehicle miles traveled and foster green technology. He asked that the General Plan roadway network be analyzed against the Land Use Element to determine if the network would accommodate the proposed growth. And, he recommended policies ensure continuous street connections and paved roads. He also recommended the trails system be completely analyzed and that all roadways and trails in the city's sphere of influence be properly linked. He commented on the need to analyze potential environmental effects for design guidelines and sphere-of-influence consistency as well as for air quality and traffic. Lastly, he noted that all impacts to the City of Riverside in these areas should be mitigated.

Cathedral City: In a letter dated May 5, 2009, Rich Malacoff wrote to acknowledge receipt of the NOP and that the proposed project would not affect Cathedral City.

California Public Utilities Commission, Rail Crossing Engineering Section, Consumer Protection and Safety Division: In a letter dated May 5, 2009, Utilities Engineer Rosa Munoz confirmed receipt of NOP and recommended the General Plan address safety for rail corridors and provide relevant mitigation measures.

Imperial Irrigation District: In a letter dated May 6 2009, Cameron Bucher noted that Riverside County's General Plan should include reference to the existing and federally recognized electrical transmission facilities and energy corridors, the existing Bureau of Land Management corridor and the Imperial Irrigation District Desert Southwest Transmission Line project. The letter also provided additional web resources for the California Desert Conservation Act Plan and the Department of Energy's Corridor and Congestion Study and the Westside Energy Corridor.

U.S. Marine Corps: In a letter dated May 11, 2009, T. A. Manfredi, by direction of the Commanding Officer, commented that the General Plan does not show the Chocolate Mountain Aerial Gunnery Range (CMAGR) or its military training routes. It should be revised to do so and also should consider density limitations for parcels near CMAGR and generally within the Eastern Coachella Valley Area Plan. The Safety Element should also mention CMAGR's aircraft use and the associated military training routes. It was suggested that a new Criteria Element (i.e., LUD) be added to recognize any military-owned or managed property and protect such as a military reservation. The letter also noted that the existing Noise Element does not mention noise, vibrations or interference associated with CMAGR aviation activities. Policies and programs developed by Yuma County, Arizona, are cited throughout the letter as exemplars.

Orange County Transportation Authority: In a letter dated May 12, 2009, Transportation Planning Manager, Charles Larwood, requested a copy of Riverside County's updated General Plan once it is completed. He also requested the OCTA be informed if the project affects or alters any part of the Western Riverside County MSHCP.

Sierra Club: In a letter dated May 12, 2009, Laurel L. Impett notes that the Sierra Club is concerned by the lack of specifics in the NOP and Initial Study. Concerned that the planning process would not allow for adequate public participation, the Sierra Club recommended additional scoping sessions or workshops. She also made comments on the EIR's scope, including: that the public should be given the opportunity to review the significance criteria or threshold of significance in advance of the Draft EIR; that a clear and comprehensive project description should be included, including a breakdown of the project description by land use categories; that an alternative that alters allowable development patterns should be considered to reduce environmental impacts and promote sustainability. And, lastly the Sierra Club commented on environmental impacts related to land use planning, population and housing, biological resources and wetlands, water resources and hydrology, air quality, climate change, transportation and circulation, public services, utilities, wastewater, solid waste, parks and aesthetics.

California Public Utilities Commission: In a letter dated May 12, 2009, Jensen Uchida encouraged the County of Riverside to include provisions of the Renewable Energy Transmission Initiative in the General Plan and attached a copy of the Imperial County General Plan's Geothermal / Alternative Energy and Transmission Element.

Center for Biological Diversity: In a letter dated May 13, 2009, Staff Attorney Jonathan Evans submitted comments on the CEQA process, strategies, methods and mitigation measures to address climate change in the General Plan. He also requested biological impacts be fully analyzed and mitigated to the extent feasible. To

address the project's greenhouse gas impacts, he recommended the County develop a climate action plan that sets specific measures to reach specified emission reduction targets. The letter also provides guidance on addressing and analyzing global climate change in the EIR. This includes recognizing the role of land use patterns and policy GHG reduction, addressing the threat of greenhouse gas pollution and global warming, and inventorying and analyzing projected greenhouse emissions from the project in the EIR. The EIR also must address the impact of global warming on the project and establish a zero threshold for significance in regards to greenhouse gas emission from project. Lastly, the EIR must analyze and adopt all feasible mitigation measures to reduce the project's greenhouse gas emissions.

Riverside County Airport Land Use Commission: In a letter dated May 13, 2009, Director Edward Cooper notes that the General Plan update would be an opportunity to bring the Riverside County General Plan into consistency with various Airport Land Use Compatibility Plans within Riverside County. Consistency is required by the State Aeronautics Act, which requires local jurisdictions to bring their General Plans into consistency with an Airport Land Use Compatibility Plan within 180 days of adoption, and the Commission has directed its staff to work with Riverside County Planning staff towards this end. The letter also includes information on compatibility plans adopted by ALUC between 2004 and 2009. It notes that the existing General Plan is inconsistent with the allowed density and intensity criteria of the ALUCP Compatibility Zones; policy area maps and tables in the existing General Plan do not correctly reflect airport influence area boundaries and compatibility zones in some areas; the EIR provides a means for addressing consistency; and, lastly, the proposed General Plan update would need to be reviewed by ALUC.

City of Colton: In a letter dated May 13, 2009, Assistant City Manager Mark Nauimi requests that the project's cumulative impact analysis consider approved and future projects in neighboring City of Colton and lists specific plans in Colton that should be considered. It also states the analysis should also include cumulative traffic generation and impacts on Colton roadways serving cumulative projects. The EIR should also evaluate consistency with federal Endangered Species Act requirements for the Delhi sands flower-loving fly, summarize compliance with SB 18, explain Riverside County and city coordination on future projects, evaluate impacts to Colton's traffic and transportation plans, evaluate impacts to the city's capital improvement projects and also include the Bi-County Corridor analysis.

Riverside County Flood Control and Water Conservation District: In a letter dated May 14, 2009, Teresa Tung, Engineering Project Manager, provided the following list of issues to consider for the General Plan and the associated EIR: existing Flood Control District facilities are not consistently shown on the existing General Plan's land use maps; planned flood control infrastructure in County Master Drainage Plans (MDP) and Area Drainage Plans (ADP) are not shown in the General Plan; and, mapped LUDs need to allow for proper planning within and around proposed MDP flood control infrastructure. Further, the EIR should analyze potential impacts to the MDPs and floodplain management studies may be necessary in areas where floodplain and flood hazards have not been studied and mapped. The General Plan and EIR should also address potential direct and indirect floodplain impacts, and describe the flood control facilities and other measures needed to mitigate flood hazards. Lastly, both documents should address water quality and the County's Water Quality Management Plans for new development and for minimizing discharge of pollutants in storm water.

Riverside County Waste Management Department: In a letter dated May 15, 2009, County Planner Sungkey Ma commented on AB 32 and inquired about Riverside County's approach to compliance with that law relative to a future Climate Action Plan.

California Regional Water Quality Control Board, Santa Ana Region: In a letter dated May 19, 2009, Mark G. Adelson, Chief of the Regional Planning Programs Section, submitted comments addressing the Santa Ana River and San Jacinto River watersheds. He noted that federal and state anti-degradation policies should be factor

heavily in the 'alternatives analysis' section of the EIR. He also made a number of specific comments directed at ensuring the updated General Plan and the project's EIR ensure proper protection of water quality.

California Department of Toxic Substances Control: In a letter dated May 19, 2009, Project Manager, Al Shami, of the Brownfields and Environmental Restoration Program wrote requesting the project do a number of things, specifically: evaluate impacts to human health and the environment pursuant to the list of regulatory agency databases provided; provide a mechanism for the identification and remediation of contaminated sites; develop a work plan for hazardous substance cleanup; require hazardous material investigation prior to demolition activities and for performing any needed remediation in compliance to California environmental regulations and policies; address soil contamination and testing; protect human health and sensitive receptors during construction or demolition projects; manage hazardous waste appropriately per California hazardous waste control laws; and, for former agricultural sites require investigation and, where needed, remediation of contaminants prior to construction.

Metropolitan Water District of Southern California: In a letter dated June 8, 2009, Manager Delaine W. Shane of the Environmental Planning Team wrote noting that the project area includes a number of Metropolitan-owned or operated facilities, rights-of-ways and property holdings. As such, MWD is concerned with potential impacts to any of its existing or future facilities resulting from proposed land use changes. They also request analysis of water quality issues related to the effects of land use changes on MWD water storage or conveyance facilities. And, they note that any proposed modification should not impact or impose additional restrictions on MWD properties. They request participation in the project planning process to ensure compatibility with MWD intended uses of non-operational properties. Lastly, the letter included a map of Metropolitan's facilities and properties in Riverside County.

B. Scoping Process

In addition to distribution and publication of the NOP, two public scoping meetings were held to solicit input from interested agencies and the public on what analysis and issues should be included in the EIR. These scoping meetings were held on Monday, April 27, 2009, at the Indio Office of the County Planning Department and Monday, May 4, 2009, at the County Administrative Center in downtown Riverside. Both meetings were open for public comment. Attendees were given the option of providing oral or written comments. The time, place and intent of these public scoping meetings was advertised (in English and Spanish) in the following daily (except La Prensa) publications:

- The Press-Enterprise, published April 17, 2009
- The Desert Sun, published April 17, 2009
- The Californian, published April 17, 2009
- La Prensa (Spanish-language weekly), published week of April 17-23, 2009

The comments received at each public scoping meeting are summarized below. Copies of the public notices and documents related to the public scoping meetings are provided in EIR Appendix A-1.

Public Scoping Meeting on Monday, April 27, 2009: There were approximately 12 attendees, none identified themselves as being with a public agency. All were either concerned community members or developers and their consultants. Riverside County staff present included Planning Director Ron Goldman (presiding), Principal Planner Mitra Mehta-Cooper and Planner IVs Cindy Thielman-Braun and Josh Lee. Principal Planner Dave

Mares from the Indio Office and Mike Gialdini from Supervisor Wilson's office were also in attendance. The scoping meeting started with introductions all around. Then Riverside County Planning Department staff provided background information on the project and planned EIR. This was followed by general discussion of a variety of community concerns, including provision of equestrian trails and recreational opportunities, community plans for the region and protection of rural areas. A question was asked for clarification of the relationship between the privately initiated Foundation GPAs and GPA No. 960. The question and answer portion of the meeting took about 30 minutes. No new issues not previously considered were raised.

Public Scoping Meeting on Monday, May 4, 2009: This scoping meeting was attended by 15 guests, including representatives from several public agencies: Riverside County Airport Land Use Commission (Brenda Ramirez), the Riverside Transit Authority (Michael McCoy) and the Orange County Water District (Donald L. Jackson). Riverside County staff present included Assistant Planning Director Damian Meins (presiding), Principal Planner Mitra Mehta-Cooper and Planner IVs Cindy Thielman-Braun and Josh Lee, as well as Planner II, Phayvanh Nanthavongdouangsy. Principal Planner Dave Mares from the Indio Office and Mike Gialdini from Supervisor Wilson's office were also in attendance. The scoping meeting started with introductions all around and background information on the project and planned EIR from Riverside County Planning Department staff. The discussion portion of the meeting that followed lasted about 45 minutes and proceeded formally through the use of the speaker's slips and three minute time limits.

The first speaker, Sue Nash, commented on wanting to see greenhouse gas issues addressed "first" and not after the "General Plan is put together;" perceived errors in how various maps depict the San Jacinto area; concerns about the proposed Northeast Dairies Policy Area's potential effects on the San Jacinto Wildlife Preserve; and, concerns about the effects of potential agricultural conversion in the San Jacinto area in general.

The second speaker, Cindy Ferry, had technical questions about the proposed EIR, including how General Plan build out would be calculated, how any density transfer programs would be addressed in those calculations and how privately initiated GPAs would be reflected in GPA No. 960 and the EIR. She also had questions about the length of the public comment period for Draft EIRs and concerns about the adequacy of any future technical studies. Lastly, she reiterated her position on the need for protecting rural lifestyles within Riverside County.

The third speaker, Michael McCoy, from the Riverside Transit Authority, requested the County of Riverside consider public transit needs in the proposed Circulation Element update, including accommodating transit corridors, bus pullouts and transit center collecting points. He also asked that the County of Riverside coordinate directly with the RTA on future bus routes and design of Riverside County's circulation network to provide appropriate roadways and infrastructure for future transit corridors.

Lastly, Laurie Taylor spoke about her concerns over available water supplies and plans for a density bonus program. She also asked how much agricultural lands would be preserved and whether there was a set amount, either by acreage or percentage, targeted for protection.

C. Public Hearings and Other Public Meetings Timeline

To inform the public of the General Plan Advisory Committee, Planning Commission and Board of Supervisors workshop and hearings are advertised ten days in advance in the local newspaper. Meeting materials, including comments submitted by the public, are posted advanced to the public hearings on the Planning Department's website. The public hearings provide an opportunity for the public to learn about the project, and to express their concerns and opinions on the proposed project. There was active public participation at the GPAC meetings. From the GPAC meetings, the County of Riverside received over seventy letters discussing various issues

concerning GPA No. 960. The list below summarizes the other public meetings, workshops and hearings that were held for the project.

1. Board of Supervisors Hearings and Workshops

April 8, 2008: The Board approved creation of, and membership for, the 2008 General Plan Advisory Committee.

October 21, 2008: The Board formally initiated the proposed General Plan update as GPA No. 960.

2. Planning Commission Hearings and Workshops

July 9, 2008: A public workshop was conducted for the Riverside County Planning Commission to discuss the components being considered for updating the General Plan.

October 1, 2008: The Planning Commission recommends formally initiating GPA No. 960.

June 24 and August 19, 2009: Planning Commission workshops were held to discuss various components of the project for which the GPAC had concluded discussion and finalized recommendations (see below). Planning Commissioners provided feedback to further shape the proposed project.

3. General Plan Advisory Committee (GPAC) Meetings

October 2008 through October 2009 and June 2013 through August 2013: During this period, GPAC meetings were held roughly every six weeks. At these meetings, sections of the proposed project (generally proposed General Plan text revisions, deletions or additions) were discussed and committee members voted on group recommendations to be forwarded to the Planning Commission and BOS for consideration.

2.4 Document Availability

Draft EIR No. 521 for GPA No. 960, the General Plan Update Project, including all of its appendices and technical studies, was distributed according to CEQA requirements and NOP requests, as well as Riverside County procedures. See Appendix EIR-1 for distribution lists. For convenience, it was also posted on the Riverside County Planning Department website.

The proposed project, Programmatic EIR and technical appendices may be viewed online at:

http://www.rctlma.org/planning

The County has made hardcopies of the complete text and exhibits of GPA No. 960 and EIR No. 521, including its technical appendices, available at both Planning Department offices within Riverside County, which are at the following locations:

County Administrative Center Riverside
4080 Lemon Street
Public Counter, 2nd Floor or

Planning Department, 12th Floor
Riverside, California 92502
Hours of Operation: 8:00 am to 5:00 pm
Monday through Friday

County Administrative Center (Palm Desert)
77588 El Duna Ct.
Palm Desert, California 92211
Hours of Operation: 8:00 a.m. to 5:00 p.m.
Monday through Friday

In addition, a CD-ROM of the proposed draft updated General Plan and Draft EIR No. 521, including all the associated EIR appendices and technical studies, was made available for review at the following library locations:

Table 2.0-B: Libraries in Riverside County Receiving Project Documents

County Library	County Library
Anza Anza Public Library 57430 Mitchell Road Anza California 92539	**Beaumont** Beaumont Library 125 East 8th Street Beaumont, California 92223
Blythe Palo Verde Valley District Library 125 W. Chanslor Way Blythe, California 92225	**Corona** Corona Public Library 650 South Main Street Corona, California 92882-3417
Desert Hot Springs Riverside County Public Library 11691 West Drive Desert Hot Springs, California 92240	**Glen Avon** Riverside County Public Library 9244 Galena Jurupa Valley, California 92509
Idyllwild Riverside County Public Library 54185 Pinecrest Ave. Idyllwild, California 92549	**Indio** Riverside County Public Library 200 Civic Center Mall Indio, California 92201
Lake Tamarisk Riverside County Public Library 43-880 Lake Tamarisk Drive Desert Center, California 92239	**Mecca** Riverside County Public Library 91-260 Ave. 66 Mecca, California 92254
Mission Trail Riverside County Public Library 34303 Mission Trail Wildomar, California 92595	**Moreno Valley** Riverside County Public Library 25480 Alessandro Moreno Valley, California 92553
Nuview Riverside County Public Library 29990 Lakeview Nuevo, California 92567	**Palm Desert** Palm Desert Library 73-300 Fred Waring Drive Palm Desert, CA 92260
Perris Riverside County Public Library 163 East San Jacinto Perris, California 92570	**Riverside** Riverside City Main Library 3581 Mission Inn Ave Riverside, California 92501
San Jacinto Riverside County Public Library 500 Idyllwild Dr. San Jacinto, California 92583	**Sun City** Riverside County Public Library 26982 Cherry Hills Boulevard Sun City, California 92586

County Library	County Library
Temecula Riverside County Public Library 30600 Pauba Road Temecula, California 92592	**Thousand Palms** Riverside County Public Library 31189 Robert Road Thousand Palms, California 92276
Woodcrest Riverside County Public Library 16625 Krameria Avenue Riverside, California 92504	

Source: Riverside County, GIS Department database, 2010.

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Section 3.0

Project Description

Section 3.0 Project Description

3.1 Introduction

The General Plan Update Project, General Plan Amendment No. 960 ("Proposed Project" or GPA No. 960), comprises a comprehensive review of, and necessary updates to, the Riverside County General Plan's policies, maps and implementing directions. The result of the effort is an amended County General Plan that continues to provide a clear and consistent set of directions for implementing the County Vision, Elements and Area Plans over the next five years and into the future. A detailed description of the proposed updates, revisions and changes encompassed by this project is provided in Section 3.5. Associated project-level information may also be found on the Planning Department's website at ***http://planning.rctlma.org/***.

The adoption of this amendment to the current General Plan and future implementation of the changes it encompasses is considered the "proposed project" as evaluated in this Program EIR. As stipulated by Section 15124 of the State CEQA Guidelines, the project description that follows provides details about the proposed components of GPA No. 960 to the extent needed for adequate evaluation of environmental impacts. This section also provides an overview of the project's regional location and general setting, project background, project objectives, a detailed description of the proposed changes to the General Plan, a brief discussion of the anticipated adoption and implementation of the updated Plan and an explanation of the intended uses of this Program EIR.

3.2 Regional Location and General Setting

Riverside County is large, encompassing 7,295 square miles that stretch across 200 miles of California - from the eastern edge of the Los Angeles metropolitan basin to the Colorado River. Bounded by Orange County on the west, San Bernardino County to the north, the State of Arizona to the east and San Diego and Imperial Counties to the south, Riverside County is the fourth largest county in California (Figure 3.1, Regional Location Map).

Riverside is one of the most diverse counties in California. It includes well-established urban, suburban and rural communities. It has an extensive array of agricultural lands, lands devoted to mineral extraction and recreational areas. There are rugged mountains, flat valley areas, open desert and expansive natural open spaces. The western portion of the county contains most of the county's non-desert areas, as well as most of its urbanized areas. To the east is the urbanizing hub of the Coachella Valley. Beyond Coachella is the northern half of the massive Salton Sea. Eastern Riverside County, which lies east of the crest of the San Jacinto Mountains, contains almost all the county's desert regions. Elevations in eastern Riverside County range from about 230 feet below mean sea level at the Salton Sea to 10,800 feet at the peak of Mount San Jacinto.

Of the roughly 4.6 million acres within Riverside County, approximately 10% falls within the 26 incorporated cities of the county, as shown below. The remaining portions include unincorporated county lands, as well as lands outside Riverside County's jurisdiction, such as military bases, National Forests, state lands and Indian Reservations. The western third of Riverside County is the most heavily populated region and contains roughly 85% of Riverside County's total population. The eastern two-thirds of the county contain the remaining 15%, with most of the population concentrated in the Coachella Valley region.

Table 3.0-A: Incorporated Cities in Riverside County

Western Riverside County*	Eastern Riverside County
Banning	Cathedral City
Beaumont	Coachella
Calimesa	Desert Hot Spring
Canyon Lake	Indian Wells
Corona	Indio
Hemet	La Quinta
Lake Elsinore	Palm Desert
Menifee	Palm Springs
Moreno Valley	Rancho Mirage
Murrieta	Blythe
Norco	
Perris	
Riverside	
San Jacinto	
Temecula	
Wildomar	

* The City of Eastvale incorporated October 1, 2010, and the City of Jurupa Valley incorporated July 1, 2011. Since these both incorporated well *after* this EIR's NOP issuance date (April 13, 2009), Eastvale and Jurupa Valley are not addressed as separate cities within this EIR.

Source: Riverside County GIS, 2011.

Within Riverside County, major transportation corridors are associated with Interstate 10 and State Routes 91 and 60 for east-west connectivity. Interstates 15 and 215 provide the main north-south connectivity across Riverside County. Other regionally important highways include State Routes 62, 71, 74, 78, 79 and 111. Two major rail freight lines, Union Pacific and Burlington-Northern Santa Fe, cross Riverside County. Metrolink also provides commuter rail services connecting stops within Riverside County to San Bernardino County, as well as various locales in Orange and Los Angeles Counties. There are no waterways within Riverside County used for shipping.

Regionally, Ontario International Airport in San Bernardino County provides the largest number of passenger air flights within the Inland Empire region. Within Riverside County, commercial passenger service is also offered out of Palm Springs International Airport. This airport and March Air Reserve Base accommodate the largest aircraft within the region. Other public general aviation airports within Riverside County include Banning Municipal, Bermuda Dunes, Blythe, Corona Municipal, Chiriaco Summit, Flabob, French Valley, Hemet-Ryan, Jackie Cochran Regional, Palm Springs, Perris Valley and Riverside Municipal Airports.

Regionally, the County of Riverside is the fourth most populous county in California, behind only Los Angeles, San Diego and Orange Counties. Altogether, Riverside County represents roughly 5.5% of California's total population. Of the roughly 2.2 million people who reside in Riverside County, 72% (1.6 million) live within the incorporated cities. It is estimated that by 2035, Riverside County will be home to approximately 3.6 million people, who will occupy 1.3 million dwelling units (Riverside County Progress Report, 2009). This represents roughly a 65% increase over Riverside County's present population and housing stock.

3.3 Project Background

Starting in the late 1990s, the County of Riverside entered into a highly innovative and progressive planning effort known as the Riverside County Integrated Project (RCIP) to create a comprehensive vision for anticipating and addressing the competing needs of growth and development, transportation and regional circulation, environmental protection and resource conservation within Riverside County over the next 20 to 50 years. The result of this landmark effort was the October 2003 adoption of an entirely new General Plan that replaced the aging plan that had become a pastiche of disjointed elements, policies and maps. The RCIP effort also encompassed creation of the Community Environmental and Transportation Acceptability Program (CETAP) for planning and coordinating provision of regional transportation systems and development of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) to protect valued natural resources within the western third of Riverside County. (A second MSHCP for the Coachella Valley followed a few years later.)

To ensure that the policies and plans of the RCIP General Plan remain adequate and appropriate for the continuing implementation of the Riverside County Vision, the Administration Element of the General Plan included provisions for methodically revisiting the document every five years (later amended to every eight years). The year 2008 marked the first comprehensive review of the General Plan conducted by the Riverside County Planning Department.

Pursuant to Riverside County Ordinance No. 348, all proposed General Plan Amendments must be formally initiated by the Board of Supervisors. This process allows the Planning Commission and Board of Supervisors to provide feedback and determine if the proposed amendment is appropriate for the General Plan at this time. A preliminary project review is made by Planning Department staff and a recommendation from the Planning Director and from the Planning Commission is forwarded to the Board of Supervisors for an initiation decision. As part of this process for proposed GPA No. 960, a public workshop was conducted for the Riverside County Planning Commission on July 9, 2008, to discuss updates being considered for the General Plan. The project was formally initiated via a Planing Commission session on October 1, 2008, and at the Board of Supervisors on October 21, 2008.

To foster community input, a General Plan Advisory Committee (GPAC) was established by the Board of Supervisors to evaluate the various policy proposals and revisions being considered for inclusion in GPA No. 960. The thirteen GPAC members ultimately appointed by the Board of Supervisors represented a cross-section of Riverside County interests. The Committee included two members with extensive experience and knowledge of Riverside County Planning history, having participated in the creation of the original (2003) RCIP General Plan. The Committee also included representatives from the Building Industry Association, Nature Conservancy, Riverside County Planning Commission, an elected member from both the Western Riverside Council of Governments and the Coachella Valley Association of Governments, as well as a representative from each Riverside County Supervisorial District. The GPAC met every four to six weeks between October 2008 and October 2009 to evaluate Planning's staff-recommended proposals for GPA No. 960. Once the remaining draft sections of the General Plan were prepared, the GPAC reconvened on June 13, 2013 and August 1, 2013 to provide final comments. In addition, Planning Commission workshops were held on June 24 and August 19, 2009, to review and discuss various components of the project for which the GPAC had finalized recommendations. At these workshops, the Planning Commissioners provided feedback to further shape the revised General Plan.

Pursuant to CEQA, an Initial Study (Environmental Assessment No. 41788) was prepared for the project to define the parameters of the planned Program EIR. The Initial Study and a Notice of Preparation (NOP) were issued on April 13, 2009. By the close of the NOP comment period on May 12, 2009, the County of Riverside had received 29 comment letters. These comments are summarized in Section 2.3.A. Copies of all of the letters

received, along with the Initial Study and NOP documents, are included in Appendix EIR-1. During the NOP comment period, two public Scoping Sessions were held for interested agencies and the public. One was held April 27, 2009, at Riverside County's Planning Office in Palm Desert and a second was held May 4, 2009, in Riverside at the County of Riverside Administrative Center. A brief summary of the results of these sessions is also included in Section 2.3.

3.4 Project Objectives

The Riverside County General Plan is intended to be a blueprint for Riverside County's future. It describes the future growth and development within Riverside County over the long-term. As stated above, GPA No. 960 was designed to provide an update to the existing General Plan's policies, maps and implementing directions. Pursuant to the "Certainty System" established in the Administration Element of the General Plan, the following objectives are to be achieved by this periodic review and update. The General Plan was reviewed and the proposed changes in GPA No. 960 are designed to:

- Assess General Plan progress and issues related to its implementation.
- Perform necessary changes amongst Foundation Components within the General Plan.
- Develop policy, entitlement and technical amendments, as warranted.
- Extend planning projections another five to ten years into the future and adjust the General Plan to accommodate previously unanticipated needs.
- Enable the County of Riverside to reassess the Vision and Planning Principles of the General Plan and recommit to them.

Accordingly, GPA No. 960 also involved cataloging the amendments that have occurred since 2003 and examining the planned intensities and policies of the General Plan to determine if any revisions are needed. Figure 3.2 (Key Regions of Interest for GPA No. 960 (Western County)) and Figure 3.3 (Key Regions of Interest for GPA No. 960 (Eastern County)) show the general locations of land use-related proposals with spatial components under consideration as part of this project.

To achieve the update objectives established in the General Plan Administration Element, the General Plan was evaluated and proposals were developed by staff so that:

- The General Plan provides a clear and consistent set of directions for implementing the Riverside County Vision throughout the county over the next five to ten years and into the future (2035 and beyond). Where clarification or additional direction is needed, policies were added or modified. Where no longer relevant or appropriate, policies were deleted or revised.
- The General Plan's Elements, Area Plans and policies continue to provide clear, consistent direction for implementing Riverside County's Vision. A thorough evaluation was conducted to determine that the land use direction and planned intensities in these areas remain appropriate for their given locations. Mapping items found to be inconsistent or inappropriate were corrected.

LOS ANGELES COUNTY

SAN BERNARDINO COUNTY

MOHAVE COUNTY, AZ

ORANGE COUNTY

RIVERSIDE COUNTY

LA PAZ COUNTY, AZ

PACIFIC OCEAN

SALTON SEA

SAN DIEGO COUNTY

IMPERIAL COUNTY

YUMA COUNTY, AZ

Data Source: Riverside County (2013)

Highways

City Boundary

Waterbodies

Figure 3.1

Path: \\agency\gtmaga\Projects\Planning\Cindys\Purple\MapGallery\Fig3.1-Location.mxd

December 16, 2013

Miles

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RIVERSIDE COUNTY PLANNING DEPARTMENT

REGIONAL LOCATION
RIVERSIDE COUNTY

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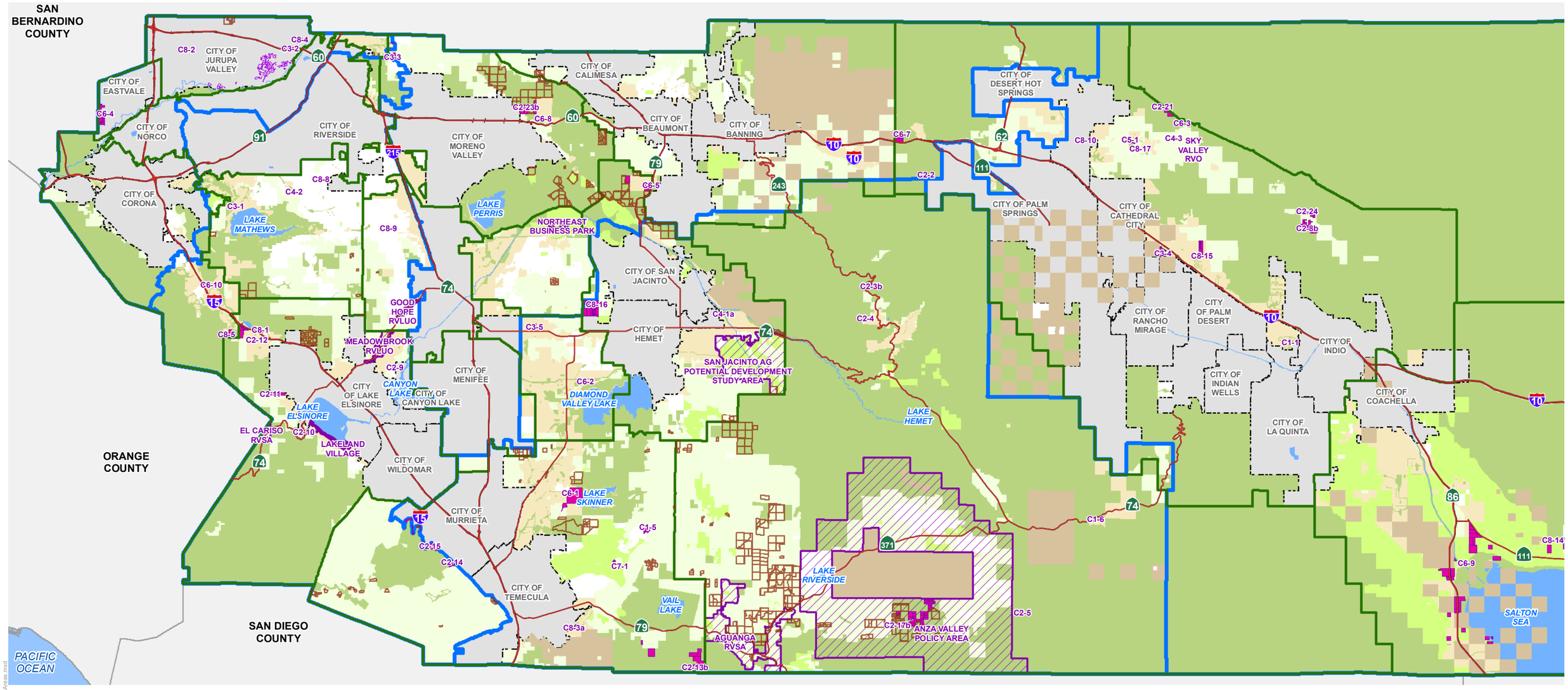

Land Use by Foundation

- Agriculture
- Rural
- Rural Community
- Open Space
- Community Development

Areas Addressed:

- RCA Acquired Lands
- Parcel Specific Land Use Changes
- Policy Area Boundary
- ALUC Land Use Changes
- Supervisorial District
- Tribal Lands
- Area Plan Boundary
- Highways
- Cities
- Waterbodies

Data Source: Project Application for GPA No. 960 (2010)

Figure 3.2

January 29, 2015

Miles
0 5 10

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RIVERSIDE COUNTY PLANNING DEPARTMENT

KEY REGIONS OF INTEREST FOR GPA NO. 960 - WESTERN COUNTY

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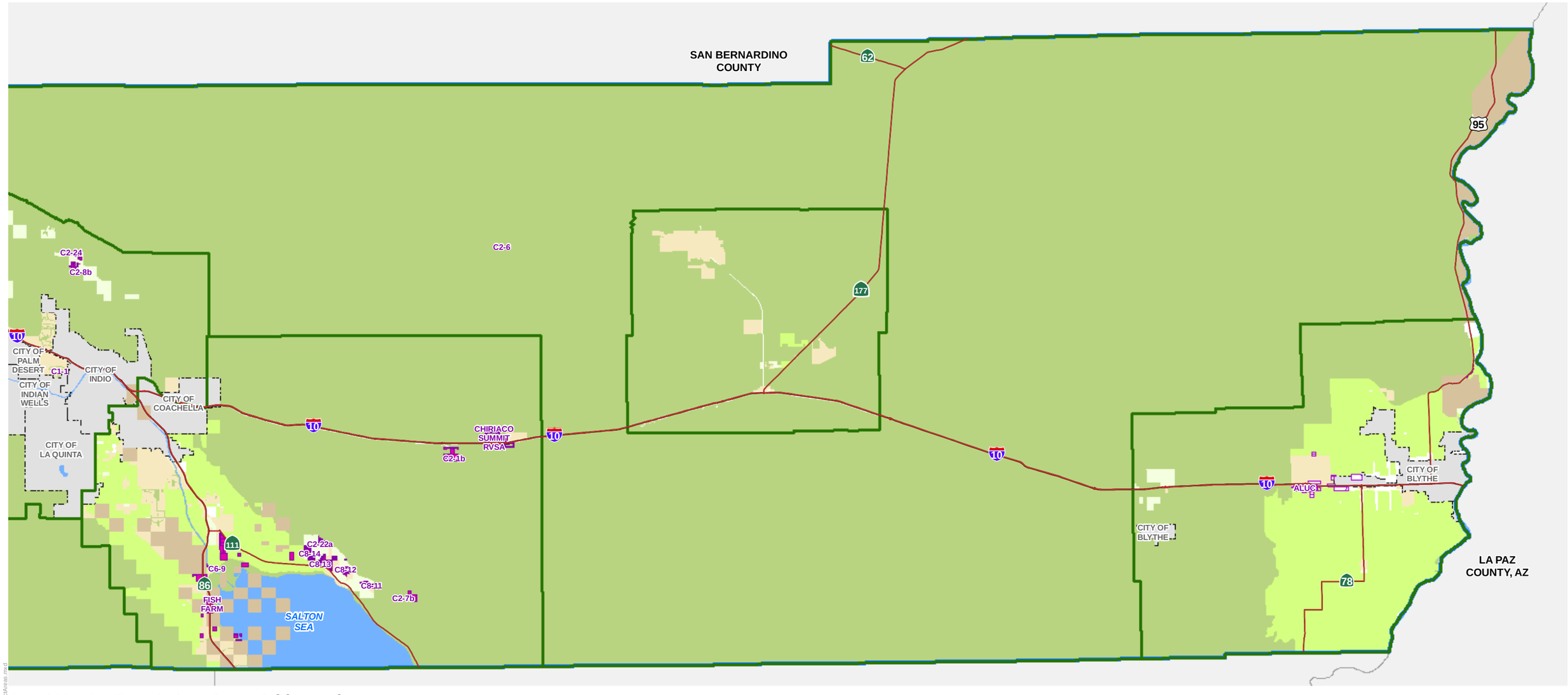

Land Use by Foundation

- Agriculture
- Rural
- Rural Community
- Open Space
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Areas Addressed:

- RCA Acquired Lands
- Parcel Specific Land Use Changes
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- ALUC Land Use Changes
- Supervisorial District
- Tribal Lands
- Area Plan Boundary
- Highways
- Cities
- Waterbodies

Data Source: Project Application for GPA No. 960 (2010)

Figure 3.3

December 16, 2013

Miles

0 5 10

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KEY REGIONS OF INTEREST FOR GPA NO. 960 - EASTERN COUNTY

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- Policy Areas, Study Areas and Overlays throughout Riverside County continue to ensure coordinated development occurs at appropriate intensities in the manner envisioned in the General Plan. All such policy areas throughout Riverside County were evaluated towards this end to ensure their continued utility.

- Resource maps and other data-based information in the General Plan accurately reflect current data. Towards this end, these maps and other data-based information in the General Plan were examined and updated, as needed. Similarly, the General Plan policies and directives related to these resource maps were also revised where warranted by the updates.

- The references and discussions in the General Plan reflect and address the current statutes, regulations and policies of the County of Riverside and applicable outside agencies. Updates were made as needed to ensure this.

3.5 Project Components

This Program EIR addresses the potential environmental effects associated with implementation of proposed GPA No. 960. This amendment is designed to ensure that the County of Riverside maintains a focused and balanced pattern of growth that accommodates the demand for housing, employment opportunities and public facilities and services, while minimizing the potential adverse impacts that may result from increased urban development.

GPA No. 960 encompasses the proposals listed below. These proposals serve to address areas of the General Plan where changes are needed for a variety of reasons: to adjust to current County of Riverside conditions; to adhere to new laws passed or changed since the last update; to provide additional guidance for the planned level of intensity; to better coordinate where, and under what circumstances, intensity shall be accommodated; and, to ensure that any growth occurring in Riverside County is balanced and coordinated with appropriate public services, infrastructure and other basic necessities for a healthy and livable community.

As a result of the review process under GPA No. 960, a coordinated examination was made of all of the Elements and Area Plans of the General Plan to ensure their overall usefulness as the blueprint for Riverside County's growth is maintained. The minor technical changes include revisions to reflect newly incorporated cities and correcting general format issues to ensure flow and consistency. The discussion below describes the major changes identified and developed as a result of the review process.

The purpose of this project was to evaluate the Riverside County General Plan as a whole, making changes where found necessary. After staff conducted the Scoping Sessions, some proposals identified for review in GPA No. 960 at the Initial Study/NOP phase were subsequently found either to be premature for revision or simply not necessary for change. As a result, the scope of the proposed GPA No. 960 project has been narrowed as an outcome of the NOP process, as is permitted by Section 15083 of the State CEQA Guidelines.

The proposals that were identified for review in the Initial Study/NOP for this project, but were eliminated as part of the NOP process are outlined under Section 3.5.8.

A. Land Use Element Changes

The Land Use Element of the General Plan addresses the policies and programs for land use and development that apply countywide. All of the Land Use Element and general land use policy or designation changes proposed as part of GPA No. 960 are discussed here. The specific effects of these land use changes are assessed and discussed in further detail in Section 4.2 (Land Use).

In some cases, staff's review of the RCIP General Plan under GPA No. 960 yielded land use changes to policies and maps for specific Area Plans. In such cases, a generalized discussion is provided under Section 3.5.1.a. In other cases, the general review under GPA No. 960 yielded parcel-specific changes in land use designations. For those cases, a generalized discussion is provided under Section 3.5.1.b. The following changes to the General Plan Land Use Element are proposed in GPA No. 960:

1. Incidental Rural Commercial Policies

As described in the Land Use Element (for example, see Table LU-3), the existing General Plan only allows commercial activities to occur within the Community Development Foundation. While designed to prevent urban development in rural areas, it was found that such a limitation also prevented the development of neighborhood-serving incidental commercial uses and basic services in remote rural areas of Riverside County. Thus, policies are proposed in GPA No. 960 to allow small-scale commercial uses within the Rural and Rural Community Foundation Components. Proposed Policies LU 21.7 and 22.7 outline the manner in which rural-commercial land uses shall be permitted within these two Foundation Components and the specific conditions which apply to ensure that such uses are developed appropriately.

2. Sphere of Influence Policy

The General Plan Certainty System provides a great level of confidence in the future development patterns as Riverside County grows. However, because of the five-year review cycle initially associated with the Foundation Components (it has since changed to eight), it was discovered that such restrictions were limiting Riverside County's ability to appropriately plan and develop necessary infrastructure within the city sphere of influence areas. Thus, policies are proposed in GPA No. 960 to allow consideration of a quarterly General Plan Amendment from the Rural Community Foundation if the property is located within an established city sphere of influence area. Proposed Policy LU 22.8 and Administration Element-Required and Optional Findings 3.i were developed to provide the flexibility necessary to allow coordinated development and infrastructure provision within the city sphere of influence areas.

3. Rural Village Overlays and Study Areas

An examination was made of Riverside County's existing policies for rural areas that are designated for potential urbanization over time. Such areas were addressed in the existing General Plan via individual "Rural Village" overlays or study areas applied at the Area Plan level. As part of this project, both countywide and area-specific Rural Village policies and plans were evaluated to determine if they remain appropriate for future intensification and if they provide the necessary implementation guidance. The General Plan policy changes in GPA No. 960 that apply to all of Riverside County's Rural Village Overlays and Study Areas are described in proposed Policies LU 34.1 through 34.5. Changes proposed for specific Rural Villages are described under the applicable Area Plans, below.

4. Airport Land Use Compatibility Plan Consistency Changes

Since the adoption of the RCIP General Plan in 2003, the Riverside County Airport Land Use Commission (ALUC) has adopted revised Airport Land Use Compatibility Plans for various airports that affect Riverside County to address noise and safety-related concerns with airport operations. As such, the existing General Plan policies and land use designations within these Airport Influence Areas were examined to ensure they are consistent with, and appropriate for, the areas' air operations. As a result, various map, policy and parcel-specific land use changes were identified to establish consistency with some of these newly adopted plans. Due to issues beyond the scope of this EIR, the existing General Plan still has land use consistency issues within the Airport Influence Areas for the Jacqueline Cochran Regional Airport (formerly the Desert Resorts Regional Airport), French Valley Airport and Bermuda Dunes Airport. Land use changes included in GPA No. 960, however, ensure consistency for the Riverside Municipal, Flabob and Blythe Airports. See Section 4.13 for further details.

In addition to proposed updates to the Land Use Element airport policies (LU 15.1 through 15.9) and General Plan Table LU-3 (Relationship of ALUC Compatibility Plans to County Area Plans), Table 3-B (Summary of Airport Land Use Consistency Changes), below, summarizes Area Plan changes proposed in GPA No. 960 to establish consistency with the Airport Land Use Compatibility Plans. Corresponding changes under "mobile noise" in the General Plan Noise Element and under "aviation systems" in the Circulation Element were also revised to reflect these same airport-related changes.

Table 3.0-B: Summary of Airport Land Use Consistency Changes

Airport	Area Plan	Text Changes	Map Changes
Banning Municipal Airport	The Pass (PAP)	Update text, policies PAP 1.1-1.2 and Table PAP-4 for the Banning Municipal Airport Influence Area	Update Figure PAP- 4 (Policy Areas) and Figure PAP-5 (Banning Municipal Airport Influence Area [AIA]) to reflect current Banning AIA.
Bermuda Dunes Airport*	Western Coachella Valley (WCVAP)	Update text, policy WCVAP 5.1 & Table WCVAP-4 for Bermuda Dunes Airport Influence Area	Update Figure WCVAP-4 (Policy Areas) and Figure WCVAP-5 (Bermuda Dunes Airport Influence Area) to reflect current AIA.
Blythe Airport	Palo Verde Valley (PVVAP)	Update text, policy PVVAP 3.1 and Table PVVAP-4 for the Blythe Airport Influence Area	Update Fig. PVVAP-3 (Land Use Plan) to reflect parcel-specific land use changes; update LUDs in Fig. PVVAP-4 (Policy Areas) to reflect 2004 boundary for Blythe AIA; and, update Fig. PVVAP-5 (Blythe Airport Influence Area) to reflect updated airport compatibility zones.
Chino Airport	Eastvale (EAP)	Update text, policies 2.1-2.4, 3.1 and Table EAP-4 to reflect Chino Airport Influence Area	Update Figure EAP-5 (Chino Airport Influence Area) to reflect current Chino AIA boundaries.
Chiriaco Summit Airport	Eastern Coachella Valley (ECVAP)	Update text, policies ECVAP 3.1-3.2 and Table ECVAP-5 to reflect Chiriaco Airport Influence Area	Update Figure ECVAP-4 (Policy Areas) and Fig. ECVAP-5 (Chiriaco Summit Airport Influence Area) to reflect current Chiriaco Summit AIA.
Corona Municipal Airport	Temescal Canyon (TCAP)	Update text, policy TCAP 7.1 and Table TCAP-4 for Corona Municipal Airport Influence Area	Update Figure TCAP-4 (Policy Areas) and Figure TCAP-5 (Corona Municipal Airport Influence Area) to reflect current Corona Municipal AIA.
Desert Center Airport	Desert Center (DCAP)	Delete Desert Center Airport Influence Area section and Table DCAP-4 (Land Use Compatibility Guidelines) – no longer public.	Update Figure DCAP-4 (Policy Areas) to remove AIA and delete Figure DCAP-5 (Desert Center Airport Influence Policy Area) to reflect airport no longer being public.
Flabob Airport	Jurupa (JURAP)	Update text, policies JURAP 8.1-8.3 and Table JURAP-4 for the Flabob Airport Influence Area	Update Fig. JURAP-3 (Land Use Plan) to reflect parcel-specific LUD changes; Fig. JURAP-4 (Policy Areas) and Fig. JURAP-5 (Flabob Airport Influence Area) per current Flabob AIA bounds.
French Valley Airport*	Southwest (SWAP)	Update text, policy SWAP 11.1 and Table SWAP-4 for French Valley Airport Influence Area	Update Figure SWAP-4 (Policy Areas) and Figure SWAP-5 (French Valley Airport Influence Area) to reflect current French Valley AIA.

Airport	Area Plan	Text Changes	Map Changes
Hemet-Ryan Airport	Harvest Valley/ Winchester (HVWAP) and San Jacinto Valley (SJVAP)	Update text in HVWAP and SJVAP; policies HVWAP 1.1 and SJVAP 5.1; & Tables HVWAP-4 & SJVAP-4 to reflect the current Hemet-Ryan Airport AIA	Update Figure 4 (Policy Areas) and Figure 5 (Hemet-Ryan Airport Influence Area) in both HVWAP and SJVAP to reflect the current Hemet-Ryan Airport AIA boundaries.
Jacqueline Cochran Regional Airport*	Eastern Coachella Valley (ECVAP)	Update text, policy ECVAP 3.1 and Table ECVAP-4 for Jackie Cochran Regional Airport Influence Area	Update Figure ECVAP-4 (Policy Areas) and Figure ECVAP-5 (Jacqueline Cochran Regional Airport Influence Area) to reflect current AIA.
March Air Reserve Base (MARB)	HVWAP, Highgrove (HAP), Lake Mathews/ Woodcrest (LMWAP), Mead Vlly (MVAP), Lakeview/Nuevo (LNAP) and Reche Canyon/ Badlands (RCBAP)	Update text & policies re MARB for HVWAP (2.1), HAP (12.1), LMWAP (4.1), MVAP (2.1), LNAP (3.1) & RCBAP (1.1); update MARB Airport Land Use Compatibility Criteria in Tables HVWAP-5, HAP-4, LMWAP-3, LNAP-3, MVAP-3, and RCBAP-3	Update Figure 4 (Policy Areas) and Figure 5 (March Air Reserve Base Airport Influence Area) for Area Plans LMWAP, MVAP, LNAP & RCBAP, and Figure HVWAP-4 (Policy Areas) and Figure HVWAP-6 (March Air Reserve Base Influence Area), to reflect current boundaries and planning information for MARB.
Riverside Municipal Airport	Jurupa (JURAP)	Update text, policy JURAP 9.1 and Table JURPA-5 for Riverside Municipal Airport Influence Area	Update Fig. JURAP-3 (Land Use Plan) per parcel-specific LUD changes, Fig. JURPA-4 (Policy Areas) and Fig. JURAP-5 (Riverside Municipal Airport Influence Area) to reflect current AIA.
Skylark Airport	Elsinore (ELAP)	Remove Skylark Airport Influence Area text, policy ELAP 3.1 and Table ELAP-4	Update Figure ELAP-4 (Policy Areas) and delete Fig. ELAP-5 (Skylark Airport Influence Policy Area) to reflect Skylark Airport no longer public.

* Notwithstanding the changes proposed under GPA No. 960, the existing General Plan's land use designations may not be consistent with this airport's Airport Land Use Compatibility Plan.

Source: Riverside County Planning Dept., Project Application Materials, 2011.

5. Day Care Facilities

GPA No. 883, adopted in June 2009, amended the Vision and Land Use Element of the General Plan to include policies to encourage provision of child care facilities. GPA No. 960 includes changes to expand these policies to address care for all community members needing day care services (seniors, disabled adults, etc.). Furthermore, it was determined that a number of the specific policies for assessing the need for and location of child care facilities was better suited to Riverside County Planning Department Standard Operating Procedures (SOP) for use during project review. To reduce redundancies, GPA No. 960 also proposes to condense and eliminate certain day care policies in the General Plan and instead include various new implementation action items in proposed General Plan Appendix K-1 to further develop the day care SOP.

6. Open-Space Land Use Designations

For the purpose of preserving open space dedicated as a result of development, GPA No. 960 proposes Policy LU 23.1 to allow changes of land into Open Space Foundation Component as an entitlement/policy amendment, to be processed as defined in Section 2.4 of Ordinance No. 348. Thus, the policy would allow lands dedicated for Open Space by private land use entitlement or acquired by conservation agencies or other agencies to amend these lands' LUDs to conserved open space (OS-CH) under a quarterly GPA for the purpose of retaining lands as open space.

7. Chocolate Mountain Aerial Gunnery Range

A portion of the Chocolate Mountain Aerial Gunnery Range (CMAGR) is located in Riverside County. The CMAGR provides support training that is essential to the readiness of the nation's Marine Corps and Naval Air

Forces. Land use compatibility is essential for operation of the CMAGR while protecting the safety of surrounding communities. GPA No. 960 proposes Land Use Element Policy LU 36.2, as well as Eastern Coachella Valley Area Plan Policy ECVAP 11.1 and Noise Element Policy N 8.1, to address land use compatibility.

B. Area Plan Land Use Changes

A number of regional issues were examined at the local (Area Plan) level of the General Plan to determine if any revisions were needed. As a result, GPA No. 960 includes the following proposed changes:

1. Eastern Coachella Valley Area Plan

Chiriaco Summit: The existing Chiriaco Summit Rural Village Overlay (RVO) covers a small community of about 70 residents located along Interstate 10 about 30 miles east of Indio. The RVO spans roughly 660 acres. During review of this RVO, it was determined that discussion of this community's land uses was already provided in the existing Planned Communities Policy Area. Therefore, GPA No. 960 proposes to correct this discrepancy by leaving the policy area's land use discussion, while removing the Chiriaco Summit Rural Village Overlay from the map. Proposed policy ECVAP 2.2 and the update to Figure ECVAP-3 (Land Use Plan) would resolve this discrepancy.

2. Elsinore Area Plan

El Cariso Village: As part of GPA No. 960, several changes are proposed for the Elsinore Area Plan (ELAP). The ELAP's existing El Cariso Village RVO Study Area encompasses approximately 210 acres along Ortega Highway (State Highway 74) and is surrounded by the rugged Santa Ana Mountains. Following the adoption of the 2003 RCIP General Plan, the intent of this study area was to initiate a focused analysis (i.e., review of the existing land uses, lot sizes, topography and existing infrastructure) to determine appropriateness of this Study Area for possible land use intensities higher than the underlying existing LUDs. As part of the General Plan update and review process, such focused analysis was conducted and it was determined that due to limited access and infrastructure capacity, a Rural Village Overlay was inappropriate for El Cariso Village. Therefore, GPA No. 960 proposes to eliminate the Study Area and allow this community to continue to grow per its underlying LUDs as depicted on the existing Area Plan map (Figure ELAP-3). The deletion of existing Policy ELAP 6.2 pursuant to adopted GPA No. 1075 and subsequent updates to Figure ELAP-3 (Land Use Plan) and Figure ELAP-4 (Overlays and Policy Areas) proposed by GPA No. 960 would eliminate this overlay from the General Plan.

Meadowbrook: A Rural Village Overlay Study Area is also identified for the Meadowbrook community, which encompasses approximately 766 acres along Highway 74 and includes existing commercial and light industrial uses. The intent of this study area was to initiate a focused analysis to determine appropriateness of this study area and possible land use intensities above those of the underlying LUDs. As part of the General Plan update process, this focused analysis was conducted and it was determined that this community is surrounded by incorporated cities and has the infrastructure capacity to accommodate additional growth. As a result, GPA No. 960 proposes to revise the Meadowbrook Rural Village Study Area and map to create a full Land Use Overlay covering roughly 626 acres. Proposed Land Use Overlay Policies ELAP 5.1 and 5.2, new Figure ELAP-5 (Meadowbrook Rural Village Land Use Overlay) and updated Figure ELAP-3 (Land Use Plan) and Figure ELAP-4 (Overlays and Policy Areas) would provide an alternative land use development scenario for this area which would allow higher intensity uses than the underlying LUDs. These revisions would allow for better coordination and implementation of appropriate land use intensities in the Meadowbrook area.

Lakeland Village: The existing 234-acre Lake Elsinore Environs Policy Area was reviewed and revised to establish updated land use intensities to reflect revised flood mapping for Lake Elsinore. The land use changes proposed in GPA No. 960 apply to the unincorporated Riverside County territory along the southern edge of Lake Elsinore and bordered by the City of Lake Elsinore on both the east and west. The proposed changes encompass roughly 303 acres over 612 parcels within the Lakeland Village area. Because of the 100-year flood hazard zone, these properties have split designations; that is, two LUDs mapped on a single parcel. Proposed changes to these parcels modify their LUDs, identify parcels appropriate for commercial-retail, residential or open space designations and minimize the confusion caused by split designations. The proposed Lake Elsinore Environs Policies ELAP 6.1 and 6.2, plus update to Figure ELAP-3 (Land Use Plan) would encourage clustering and consolidated development as well as call for a development study to examine preserving the historic character of Lakeland Village.

3. Lakeview / Nuevo Area Plan

The Lakeview/Nuevo Area Plan (LNAP) of the General Plan has experienced tremendous development pressure over the last five years due to its central location in western Riverside County. The 2003 Riverside County General Plan LNAP included a Community Development Overlay along the Ramona Expressway in response to the growth occurring in this region. As part of GPA No. 960, General Plan land use designations and policies for this area were evaluated to determine if any changes were necessary. Accordingly, the following additions are proposed.

Northeast Business Park: Development patterns affecting agricultural and dairy lands north of the Ramona Expressway were examined to determine what level of intensification over time, if any, should be accommodated in the General Plan for landowners wishing to transition from the current predominantly agricultural uses to more urban uses. As a result, the nearly 260-acre Northeast Business Park Overlay is proposed in GPA No. 960 to ensure that adequate employment opportunities are available for the future residents of this area. The proposed overlay policies LNAP 5.1 through 5.3, as well as updates to Figure LNAP-3 (Land Use Plan) and Figure ELAP-4 (Overlays and Policy Areas), would provide an alternative land use development scenario for this area.

~~**Lakeview Mountains Policy Area:** Development patterns within the LNAP were evaluated and it was determined that an opportunity existed to guide future growth in such a way that would ensure cohesive development practices, preserve existing state-sanctioned hunting activities and provide for adequate buffers to safeguard wildlife values of the San Jacinto Wildlife Area to the north. To that end, GPA No. 960 includes the Lakeview Mountains Policy Area which would require that any master plan community incorporate the principals of "new urbanisim" which would facilitate internal transit, encourage pedestrian mobility through an interconnected trails network and provide for a transition from existing rural communities to proposed urban uses anticipated in the 2003 General Plan adoption of the LNAP Community Development Overlay. The new policy area would apply to approximately 350 acres of land straddling the Ramona Expressway and does not propose to change existing land use designations. The proposed Lakeview Mountains Policy Area is captured in LNAP 6.1 through 6.11, as well as updates to Figure ELAP-4 (Overlays and Policy Areas).~~

4. Mead Valley Area Plan

Good Hope: The existing Mead Valley Area Plan (MVAP) includes a Rural Village Overlay Study Area for the Good Hope Community. This study area encompasses approximately 265 acres located along State Highway 74 and includes existing commercial and light industrial uses. The "study area" designation indicated that following the 2003 adoption of the RCIP General Plan, a focused analysis would be needed to determine the area's appropriateness for possible land use intensities higher than the underlying land use designations. As part of the

General Plan update, such a focused analysis was conducted. It was determined that, since this community is surrounded by incorporated cities and has infrastructure capacity to accommodate additional growth, additional urbanization of the area would be appropriate in the future. Thus, GPA No. 960 proposes to revise the existing Good Hope Rural Village Study Area and map to provide a 217-acre Land Use Overlay. The proposed Land Use Overlay adds Policies MVAP 3.1 through 3.4 and Figure MVAP-6 (Good Hope Rural Village Land Use Overlay), as well as updates to Figure MVAP-3 (Land Use Plan) and Figure MVAP-4 (Overlays and Policy Areas) to provide an alternative land use development scenario for this area that would allow higher intensity uses than those of the underlying LUDs. This revision would allow for better coordination and implementation of an appropriate level of future land use intensities in the Good Hope community.

5. San Jacinto Valley Area Plan

Agriculture/Potential Development Special Study Area: The existing San Jacinto Valley Area Plan (SJVAP) includes an Agriculture/Potential Development Special Study Area to accommodate the conflicting visions of local residents and landowners for the future of this historically agricultural area. Following the 2003 adoption of the RCIP General Plan, the study area was to be subject to focused analysis to determine appropriate future land uses for the area. As part of the General Plan update, this focused study was conducted and it was determined that the study area's 7,664 acres should remain under the Agriculture Foundation Component and land use designation. Thus, GPA No. 960 proposes to eliminate the Agriculture/Potential Development Special Study Area and leave this region to remain agricultural. The proposed deletion of existing Policy SJVAP 6.1 and update of Figure SJVAP-4 (Overlays and Policy Areas) would eliminate this study area from the General Plan.

6. Riverside Extended Mountain Area Plan (RMEAP)

Aguanga: As part of GPA No. 960, several changes are proposed for the Riverside Extended Mountain Area Plan (REMAP). The Aguanga Rural Village Overlay Study Area occurs in REMAP and encompasses approximately 6,370 acres around the intersection of State Highways 79 and 371. Again, as part of the General Plan update, a focused analysis of the study area was conducted and it was determined that due to limited access and infrastructure capacity, intensification of the area via Rural Village Overlay was inappropriate for the Aguanga community. Thus, GPA No. 960 proposes to eliminate this study area. It would instead continue to grow according to the underlying LUDs depicted on the REMAP Area Plan map (Figure REMAP-3). The deletion of existing Policy REMAP 2.1 pursuant to adopted GPA No. 1075 and subsequent updates to Figure REMAP-3 (Land Use) and Figure REMAP-4 (Overlays and Policy Areas) proposed by GPA No. 960 would eliminate the overlay from the General Plan.

Anza Valley: Also in the southwestern portion of unincorporated Riverside County, the existing Anza Rural Village Overlay Study Area, encompassing roughly 1,470 acres along State Highway 371, was similarly examined to determine if it continues to remain appropriate for potential intensification. The Anza Valley Municipal Advisory Committee (MAC) had also developed a "Goals and Vision" statement outlining the desired future for this community. As part of the General Plan update, a focused analysis was conducted of the Anza Rural Village and the MAC's Goals and Vision. It was determined that due to limited infrastructure capacity, particularly lack of assured water supplies, a Rural Village Land Use Overlay was inappropriate for the Anza community. Instead, a policy area was proposed over the entire 74,500-acre region to promote and preserve the rural character of this community. Accordingly, GPA No. 960 proposes to eliminate the Anza Rural Village Study Area and instead includes a new Policy Area to dictate the urban design and character of this region. Deletion of existing Policy REMAP 2.1 pursuant to adopted GPA No. 1075 along with the proposed addition of new Policies REMAP 1.1 through 1.3 and updates to Figure REMAP-3 and Figure REMAP-4 would serve to convert the previously adopted Anza Rural Village Overlay Study Area into the proposed Anza Valley Policy Area.

7. Western Coachella Valley Area Plan

Sky Valley: Within this Area Plan, the existing roughly 100-acre Sky Valley Rural Village Overlay was examined to determine if it continues to plan for appropriate intensification for this community. Due to the very limited allowance of additional land use densities provided under this particular Rural Village Overlay, it was determined that no change was necessary for this Rural Village. Thus, although originally scheduled for updating, GPA No. 960 does not include any changes to the Sky Valley Rural Village Overlay.

C. Parcel-Specific Land Use Changes

The following GPA No. 960 items address revisions to General Plan land use designations (LUDs) necessary for specific locations in the categories outlined below. For a summary of all of the LUDs encompassed by the Riverside County General Plan and their relationship to the General Plan's Foundation Components (which serve to limit the pace at which urbanization can occur via the "Certainty System"), see Table 3-C (General Plan Land Use Designations and Foundation Components), below.

1. Conserved Land Mapping Changes

Since the adoption of the RCIP General Plan in 2003, lands have been acquired for permanent conservation of habitat under the implementation of two MSHCPs. As such, the General Plan land use designations for these acquired lands need to be updated to reflect current conditions. Although expected to have a net beneficial effect on environmental impacts throughout Riverside County, these land use changes are included within GPA No. 960 and this EIR because they do represent specific land use entitlement changes. In total, approximately 14,887 acres are being designated as Open Space – Conservation Habitat (OS-CH) as part of GPA No. 960. See Table 3-D (Lands Proposed for Open Space – Conservation Habitat Designation), below, for a summary of the LUDs changing as a result of this proposal.

2. Criteria-Based Parcel-Specific Land Use Changes

Since the 2003 adoption of the RCIP General Plan, a number of systematic mapping errors and inconsistencies were identified in how land use designations were applied. Such changes have been categorized according to eight basic criteria, as outlined below. It should be noted that these categories also include parcels previously included as part of adopted (but subsequently rescinded) GPA No. 716. The types of land use changes resulting from these systematic revisions are summarized here. The specific changes to land use designation occurring within a given local area are reflected in greater detail in Table 3.0-E, as outlined below. Land Use tables at the Area Plan level are also provided in Appendix EIR-2 of this document.

Criteria 1 - Technical Mapping Errors, Including Rural-Mountainous Designation Changes: This category addresses parcels that were erroneously designated as Rural Mountainous (RM), but do not meet the steep slope requirements. It also includes mechanical mapping errors, such as mapped land use designation colors not following parcel lines. This category affects a total of 78 acres of Riverside County.

Criteria 2 - Open Space-Conservation Habitat Designation Changes: This category addresses privately owned lands that were erroneously designated as "Open Space – Conservation Habitat," (OS-CH), which is normally used to designate publicly held lands being conserved for their habitat value. This category affects a total of 3,261 acres of Riverside County.

Table 3.0-C: General Plan Land Use Designations and Foundation Components

Foundation Component	Land Use Designation (LUD)	Building Intensity Range (du/ac or FAR)[1,2]	Selected Notes[3, 4]
AGRICULTURE (AG)	Agriculture (AG)	10 ac min.	One single-family residence allowed per 10 acres, except as otherwise specified.
RURAL (RUR)	Rural Residential (RR)	5 ac min.	Allows limited animal-keeping and agricultural, recreational and other uses.
	Rural Mountainous (RM)	10 ac min.	Also allows compatible resource development (including mining with SMP).
	Rural Desert (RD)	10 ac min.	Also allows renewable energy & utilities.
RURAL COMMUNITY (RC)	Estate Density Resi. (RC-EDR)	2 ac min.	Single-family detached residences. Limited agriculture, intensive equestrian and animal-keeping uses expected and encouraged.
	Very Low Density Resi. (RC-VLDR)	1 ac min.	
	Low Density Residential (RC-LDR)	0.5 ac min.	
COMMUNITY DEVELOPMENT (CD)	Estate Density Residential (EDR)	2 ac min.	Single-family detached residences. Limited agriculture and animal-keeping permitted, however, intensive animal-keeping discouraged.
	Very Low Density Resi. (VLDR)	1 ac min.	
	Low Density Residential (LDR)	0.5 ac min.	
	Medium Density Residential (MDR)	2 – 5 du/ac	Single-family attached and detached residences. Lot sizes range from 5,500 to 20,000 square feet, typical 7,200-sq. ft. lots allowed.
	Medium-High Density Residential (MHDR)	5 – 8 du/ac	Single-family attached and detached. Lot sizes range from 4,000 to 6,500 sq. feet.
	High Density Residential (HDR)	8 – 14 du/ac	Single-family attached and detached, including townhouses and patio homes.
	Very High Density Residential (VHDR)	14 – 20 du/ac	Single-family attached residences and multi-family dwellings.
	Highest Density Residential (HHDR)	20+ du/ac	Multi-family dwellings, including apartments and condos. 3-plus stories allowed.
	Commercial Retail (CR)	0.20 – 0.35 FAR	Local and regional retail uses. CR designated exceeds CR needed to serve population.[5]
	Commercial Tourist (CT)	0.20 – 0.35 FAR	Includes hotel, golf course, rec & amusement.
	Commercial Office (CO)	0.35 – 1.0 FAR	Includes financial, legal, insurance, etc.
	Light Industrial (LI)	0.25 – 0.60 FAR	E.g., warehouse/distribution, assembly, light manufacturing, repair facilities and supporting retail uses.
	Heavy Industrial (HI)	0.15 – 0.50 FAR	More intense industry generating significant effects, i.e., excessive noise, dust and other nuisances.
	Business Park (BP)	0.25 – 0.60 FAR	Employee-intensive uses, i.e. R&D, tech centers, corp. offices, "clean" industry & supporting retail.
	Public Facilities (PF)	≤ 0.60 FAR	Civic uses, such as Riverside County administrative buildings and schools.
	Community Center (CC)	5 – 40 du/ac 0.20 – 0.35 FAR	Includes combo of small-lot SFR, MFR, CR, office, BP & civic uses, transit facilities and rec open space in a planned development area. Including CCs in adopted Specific Plans.
	Mixed Use Planning Area (MUPA)	Varies	Applied to where a mix of uses is planned outside of Community Centers, where specific uses and ratios are not identified up front to provide flexibility.
OPEN SPACE (OS)	Conservation (OS-C)	N/A	Protection of open space for natural hazard avoidance, cultural preservation and natural and scenic resource preservation. Existing agri. permitted.
	Conservation Habitat (OS-CH)	N/A	Public and private lands conserved and managed in accordance with adopted MSHCPs or other conservation plans.
	Water (OS-W)	N/A	Includes bodies of water and natural or artificial drainage corridors. Mineral extraction allowed conditionally.

Foundation Component	Land Use Designation (LUD)	Building Intensity Range (du/ac or FAR)[1,2]	Selected Notes[3, 4]
OPEN SPACE (OS), *continued*	Recreation (OS-R)	N/A	Uses include parks, trails, athletic fields, golf courses and other such recreational uses.
	Rural (OS-RUR)	20 ac min.	One SFR allowed per 20 acres. Mineral extraction per Surface Mining Permit permitted in some cases.
	Mineral Resources (OS-M)	N/A	Mineral extraction and processing facilities; areas held in reserve for future mineral uses.

Footnotes:
1. FAR = Floor Area Ratio, the measurement of the amount of non-residential building square footage in relation to the size of the lot. DU/AC = Dwelling units per acre, the amount of residential units in a given area (acre).
2. The building intensity ranges are exclusive, e.g., the ranges are the minimum and maximum building intensities.
3. Clustering is encouraged in all residential designations. The allowable density of a particular land use designation (LUD) may be clustered in one portion of the site in smaller lots, as long as the ratio of dwelling units/area remains within the allowable density range associated with the designation. The rest of the site would then be preserved as open space or a use compatible with open space (e.g., agriculture, pasture or wildlife habitat). Within the Rural and Rural Community Foundations, as well as the Rural Designation of the Open Space Foundation, the allowable density may be clustered as long as no lot is smaller than 0.5 acre. However, for sites adjacent to Community Development Foundation areas, 10,000-square-foot minimum lots are allowed. The clustered areas would be a mix of 10,000-square-foot and 0.5-acre lots. In such cases, larger lots or open space would be required near the project boundary with Rural Community and/or Rural Foundation Component areas.
4. Selected notes roughly paraphrased from General Plan Table LU-3. See that table for specific standards and details.
5. Since the amount of land designated CR exceeds the amount anticipated to be necessary at build out, once CR becomes 40% built out in an Area Plan, additional studies will be required before additional CR will be permitted.

Source: Riverside County, RCIP General Plan, Table LU-3, 2008.

Criteria 3 - Public Facilities Designation Changes: This category addresses privately owned lands that were erroneously designated as "Public Facilities" (PF), which normally designates lands slated for public benefit uses, such as airports, sewage plants and other such infrastructure. This category affects a total of 192 acres of Riverside County.

Criteria 4 - Open Space-Conservation Designation Changes: This category addresses lands that were originally designated as "Open Space-Conservation" (OS-C), but have been determined to be unsuitable for such due to existing development, location or other constraints. This category affects a total of 28 acres of Riverside County.

Criteria 5 - Open Space-Recreation Designation Changes: This category addresses lands that were originally designated as "Open Space-Recreation" (OS-R), but have been determined to be inappropriate for such use. This category affects a total of 38 acres of Riverside County.

Criteria 6 - Appropriate Designation for Public Use Lands: This category addresses parcels in which public lands are designated for private development uses. Examples of this category include: correctly designating lands planned for public facilities (particularly around landfills) and open space uses. This category affects a total of 777 acres of Riverside County.

Table 3.0-D: Lands Proposed for Open Space - Conservation Habitat Designation

Foundation	LUDs of Lands Being Reassigned*	Acreage
RURAL COMMUNITY (RC)	RC-EDR	94.1
	RC sub-total	***94.1***
RURAL (RUR)	RR	8,986.2
	RM	3,495.8
	RUR sub-total	***12,482***
AGRICULTURE (AG)	AG	391.2
	AG sub-total	***391.2***

Foundation	LUDs of Lands Being Reassigned*	Acreage
COMMUNITY DEVELOPMENT	LI	4.9
	VLDR	17.4
	CT	2.0
	MDR	13.3
	CD Sub-total	***37.6***
OPEN SPACE (OS)	OS-C	3,135.3
	OS-W	37.7
	OS-Min	0.02
	OS-RUR	5,963.6
	OS sub-total	***9,136.6***
Grand total of all acreages to OS-Conservation Habitat		**22,141.5 ac**

* LUD = "land use designations." See Table 3-C for LUD abbreviations and land use details.
Source: Riverside County Planning Dept., Project Application Materials, 2011.

Criteria 7 - Designations Appropriate for Existing Lot Sizes: This category applies land use designations that are more suitable to the existing lot sizes in certain areas of Riverside County. This category affects a total of 11 acres of Riverside County.

Criteria 8 - Other Land Use Changes, Including Those by Executive Direction: This category addresses land use designation changes that the Planning Director has identified over the last few years through the development review process and that do not fit into any of the other categories above. This includes preserving 782 acres of fish farming, aquaculture and related activities under the "Agriculture" (AG) land use designation. This category affects a total of 2,350 acres of Riverside County.

Table 3.0-E: Summary of Criteria-Based, Parcel-Specific Land Use Changes

Area Plan	Exhibit	Existing LUD[1]	Proposed LUD[1]	Proposed Acreage
East County - Desert	C2-6	OS-CH	OS-RUR	4.7
Eastern Coachella Valley	C2-1b	OS-CH	OS-RUR	451.2
	C2-22a	OS-CH	EDR	6.4
		OS-CH	MDR	0.7
		OS-CH	RD	133.5
		OS-CH	RR	20.2
	C2-7b	OS-CH	OS-RUR	191.3
	C6-9	AG	PF	9.8
	C8-11	RD	RR	133.5
	C8-12	RD	RR	148.3
	C8-13	RD	RR	424.1
	C8-14	RD	RR	318.1
	Fish Farms	BP	AG	124.1
		CR	AG	8.3
		LI	AG	104.7
		MDR	AG	76.7
		OS-R	AG	31.1
		OS-W	AG	267.3
		VHDR	AG	57.4
		VLDR	AG	112.7
Eastvale	C6-4a	AG	OS-C	107.0
		LDR	OS-C	41.4
		MDR	OS-C	20.2

Area Plan	Exhibit	Existing LUD[1]	Proposed LUD[1]	Proposed Acreage
Elsinore	C2-10	OS-CH	RR	29.6
	C2-11	OS-CH	RM	82.8
	C2-12	OS-CH	CT	3.0
		OS-CH	RM	46.2
		OS-CH	RR	61.8
	C2-9	OS-CH	RM	9.4
		OS-CH	RR	31.0
	C8-1	RR	LI	16.7
Harvest Valley/ Winchester	C3-5	PF	MDR	8.9
		PF	MDR[2]	4.4
	C6-2	OS-CH	PF	7.7
Jurupa	C3-2	PF	LI [2]	20.2
	C8-2	LI	RC-LDR	6.1
	C8-4	LI	MHDR	0.5
Lake Mathew/Woodcrest	C3-1	PF	RM	3.9
		PF	RR	5.6
	C4-2	OS-C	MDR	4.5
	C8-8	RC-VLDR	CR	1.0
Mead Valley	C8-9	RC-LDR	CR	14.0
Reche Canyon/Badlands	C2-23b	OS-CH	OS-RUR	154.6
	C3-3	RM	PF	1.6
		PF	RM	67.0
	C6-8	OS-CH	PF	70.9
REMAP	C1-6	CR	CT	4.7
		VLDR	CT	0.9
		CR	VLDR	0.8
	C2-17b	OS-CH	OS-RUR	855.0
	C2-3b	OS-CH	OS-RUR	35.7
	C2-4	OS-CH	OS-RUR	40.5
	C2-5	OS-CH	OS-RUR	39.2
San Jacinto Valley	C4-1a	OS-C	MDR	3.5
	C8-16	LDR	RR	256.2
Southwest	C1-5	RM	RC-EDR	41.3
		RR	RC-EDR	3.9
		RM	RR	25.7
	C2-13b	OS-CH	OS-RUR	544.6
	C2-14	OS-CH	RM[3]	40.8
	C2-15	OS-CH	EDR	84.2
		OS-CH	OS-RUR	15.1
	C6-1	OS-CH	PF	264.0
	C7-1	AG	RC -EDR	10.8
	C8-3a	MDR	LDR	5.5
Temescal Canyon	C6-10	OS-Min	PF	13.3
	C8-5	RR	MDR	19.3
		RR	OS-CH	56.4
		RR	VLDR	5.7
The Pass	C6-5	OS-RUR	PF	79.0
		RM	PF	3.3

Area Plan	Exhibit	Existing LUD[1]	Proposed LUD[1]	Proposed Acreage
Western Coachella Valley	C1-1	OS-R	MDR	0.4
	C2-2	OS-CH	MDR	3.8
	C2-20	OS-CH	RR	5.5
	C2-21	OS-CH	RR	147.4
	C2-24	OS-CH	RR	151.8
	C2-8b	OS-CH	RR	71.3
	C3-4	PF	MDR	80.5
	C4-3	OS-C	RR	19.6
	C5-1	OS-R	MDR	37.6
	C6-3	OS-RUR	PF	39.8
	C6-7	OS-RUR	PF	138.5
	C8-10	OS-W	LI	0.9
		RR	LI	8.1
	C8-15	CR	VLDR	8.7
		MDR	VLDR	142.1
	C8-17	LI	RR	1.9

Footnotes:
1. See Table 3-C, above, for key to land use designation abbreviations and details on land uses.
2. Closed Landfill Policy Area also applied over area.
3. RM with Santa Rosa Plateau Policy Area applied over area.

Source: Riverside County Planning Dept., Project Application Materials, 2011.

D. Circulation Element Changes

The existing Circulation Element (as well as the individual Area Plans) was examined to determine where changes were needed to ensure effective and efficient regional and local transportation systems to meet the traffic demands of both existing conditions and planned future intensities throughout Riverside County. As a result of this effort, the following changes are proposed to the Circulation Element as part of GPA No. 960:

1. Circulation Network Changes

The existing Countywide Planned Circulation System, as mapped in Figure C-1 of the General Plan (as well as detailed in the individual Area Plans) was examined to determine if regional and local transportation systems would be able to accommodate the traffic demands of the planned future intensities resulting upon General Plan build out, as well as those associated with proposed GPA No. 960 changes. As a result, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. Updates were triggered by a number of factors: development occurring over the past five years, changes in local plans (such as city General Plans), changes in employment patterns and job centers and others. Also, the network and existing traffic patterns were studied and modeled extensively in the development of the new Countywide Transportation Model, RIVTAM, which was generally used to determine when and where roadway and intersection improvements are warranted on a case-by-case basis. The traffic study modeling and other data generated for this project are included in Appendix EIR-4.

Deletions to the existing Circulation Element are proposed due to factors such as: changes in incorporated areas, approved specific plans, findings of studies addressing specific areas that demonstrate that the roadway segment would not be needed, unavailability of right-of-way (ROW) and/or expectation of extreme difficulty in acquiring ROW and other constraints such as environmentally sensitive areas. Roadway re-alignments are proposed for purposes of avoiding steep grades, avoiding disruptions to adjacent communities, or taking advantage of available ROW. Changes in classification to either downgrade or upgrade roadways are proposed as a result of changes in

incorporated areas, in response to the findings of studies addressing specific areas and unavailability of ROW and/or expectation of extreme difficulty in acquiring additional ROW. Miscellaneous administrative changes are proposed for such matters as graphically marking the location of crossings of flood control channels, railroad grade separations, improving graphic representations, adding street names, etc. This miscellaneous category of changes is not expected to have any associated traffic impacts and therefore is not addressed further in this EIR.

As a result of the traffic modeling conducted for this GPA, it was also determined that revisions to a number of land use policies and/or designations were necessary to ensure the network's capacity and anticipated levels of service remain adequate. These land use-related changes are described either within the Land Use Element (where programmatic) or within the applicable Area Plan (where local).

2. Non-Motorized Transportation Plan Changes

Also for this project, the Countywide Non-Motorized Transportation Plan, as mapped in Figure C-7 of the General Plan (as well as detailed in the individual Area Plans) was examined for its adequacy in providing planning and coordination guidance for the provision of trails and other non-motorized transport needs within Riverside County. Where necessary, changes are proposed in GPA No. 960 to update standards for trail alignments, types, usage and functional classifications, as well as implementation policies for the development of trails.

GPA No. 960 also proposes to update the mapped locations of General Plan trails for all of Riverside County's Area Plans; eliminate or reclassify mapped trails that are no longer possible or practical to build due to environmental constraints; and identify opportunities for grade-separated trail crossings at over/underpasses, drainage culverts and along rivers for existing and planned freeways and other major roads, as well as floodways. In addition, Policies C 15.1 through C 18.3 were developed to provide the flexibility necessary to allow coordinated development and maintenance of non-motorized transportation system in Riverside County. The Countywide Non-Motorized Trail Network was mapped at the Area Plan level to allow customized solutions for local non-motorized networks. These proposed maps are included in the General Plan's Area Plans.

As of January 2011, pursuant to the California Complete Streets Act (AB 1358), Riverside County's update of the Circulation Element is required to plan for the development of multimodal transportation networks. In this regard, the existing General Plan already provides numerous policies to meet the needs of all "users of streets, roads and highways." Riverside County recognizes the benefits of a multimodal transportation network and encourages its establishment via the General Plan. As the Circulation Element provisions for the circulation system are implemented, the multimodal transportation network as characterized and intended by the Complete Streets Act will be realized. The changes proposed by GPA No. 960 would further enhance this effort.

E. Multipurpose Open Space Element Changes

The Multipurpose Open Space Element (MOSE) was examined to ensure that countywide policies addressing natural resources – their regulation, use and conservation – remain appropriate and adequate for current conditions and the planned future of Riverside County. Where appropriate, GPA No. 960 has proposed or revised policies to strengthen resource protection, energy conservation and infrastructure coordination. The various resource maps within the Element, as listed below, were also evaluated and updated, as necessary to reflect current information. Additional information on these specific updates is provided in the respective resource sections of the EIR.

Original MOSE Figures:

- Figure OS-1: Water Resources
- Figure OS-2: Agricultural Resources
- Figure OS-3: Parks, Forests and Recreation Areas
- Figure OS-4: Western Riverside County Vegetation
- Figure OS-5: Mineral Resource Areas
- Figure OS-6: Historical Resources
- Figure OS-7: Paleontological Sensitivity

Updated MOSE Figures:

- Figure OS-1: Rivers, Lakes, Reservoirs and Drainage Areas
- Figure OS-2: Agricultural Resources
- Figure OS-3: Parks, Forests and Recreation Areas
- Figure OS-3a: Forestry Resources Western County Parks, Forests and Recreational Areas
- Figure OS-3b: Forestry Resources Eastern County Parks, Forests and Recreational Areas
- Figure OS-4a: Western Riverside County Natural Communities Vegetation
- Figure OS-4b: Coachella Valley Natural Communities
- Figure OS-4c: Non-MSHCP Natural Communities
- Figure OS-5: Renewable Energy Resources
- Figure OS-6: Mineral Resource Zones
- Figure OS-7: Historical Resources
- Figure OS-8: Paleontological Sensitivity
- Former Figure OS-6: Relative Archaeological Sensitivity of Diverse Landscapes was deleted pursuant to adopted GPA No. 1083.

The following additional changes are proposed to the Multipurpose Open Space Element as part of GPA No. 960:

1. Water Conservation Policies

Riverside County's water supply is limited due to decreased state water supply as well as depletion of groundwater. Thus, policies regarding water supply, conveyance and conservation are revised and proposed in the Multipurpose Open Space Element as well as Land Use Element to reduce landscape water demand and to encourage the use of reclaimed water in the future developments. Updates to policies for water supply and conservation (Policies OS 1.3 through OS 1.4 and OS 2.1 through 2.5) and policies for water conservation and water-efficient landscaping resources (Policies LU 18.1 through 18.6) were developed for GPA No. 960 to encourage water-efficient practices as a proactive approach to addressing water-supply shortages in Riverside County.

2. Watershed and Watercourse Management Policies

In 2004, the Riverside County Board of Supervisors and the Riverside City Council appointed a joint County-City Arroyo-Watershed Advisory Committee to study the impacts of development and other human activities on the arroyos and watersheds that overlap the County of Riverside and the City of Riverside, and make recommendations for policies, technical tools such as mapping, and other measures that would be effective in reducing such impacts. The Advisory Committee presented its recommendations to the City Council and the Board of Supervisors on December 5, 2006. On June 5, 2007, the Board of Supervisors endorsed the recommendations, with some revisions, and directed that they be incorporated, as policies, into the General Plan.

Policies reflecting the Advisory Committee's recommendations are included in the Multipurpose Open Space, Land Use, Safety and Circulation Elements. Current standards and regulations for watersheds and watercourses call for sustaining watersheds at an acceptable level of quality, contributing to resource quality and maintaining groundwater supplies. These regulations were examined to ensure that County of Riverside policies and practices related to maintaining and preserving watersheds and watercourses remain adequate. Policies for project design (LU 4.1 u and v), land use compatibility (LU 7.6 through 7.9), open space preservation (LU 9.1 and 9.4), agricultural area plan designation (LU 18.8), water quality (OS 3.4 through 3.7), groundwater recharge (OS 4.5 through 4.7), floodplain and riparian area management (OS 5.3, 5.5 and 5.7), environmentally sensitive land (OS 18.3 and 18.4), code conformance and development regulations (S 1.3) and environmental consideration (C 20.4 and 20.5) are proposed in GPA No. 960 to provide efficient management of stormwater and urban runoff. A wide variety of site design policies are being proposed to improve permeability, water quality, water use efficiency and aesthetics according to the needs of a site or project vision.

F. Safety Element Changes

The Safety Element was examined to ensure that countywide policies addressing safety hazards, risks and preparedness remain appropriate and adequate for current conditions and the planned future of Riverside County. As a result, GPA No. 960 proposes new and revised policies to reduce hazard risks and improve safety, such as for updated geological, seismic and fire-hazard planning. The accompanying maps were similarly updated to reflect current information. Specific revisions include fire-hazard mapping and protection, 100-year flood zones and other hazard maps updated by the State of California and other agencies, as listed below. Safety Element policies for grading (S 1.3), fire hazards (S 5.1 through 5.8), long-range safety hazards (S 5.14 through 5.21) and updates to Safety Element figures (identified below) are also proposed as part of GPA No. 960.

- Figure S-1: Mapped Faulting in Riverside County
- Figure S-2: Earthquake Fault Study Zones

- Figure S-3: Generalized Liquefaction
- Figure S-4: Earthquake-Induced Slope Instability
- Figure S-5: Regions Underlain By Steep Slopes
- Figure S-6: Engineering Geologic Materials
- Figure S-7: Documented Subsidence Areas
- Figure S-8: Wind Erosion Susceptibility Areas
- Figure S-9: 100-Year Flood Hazard Zones
- Figure S-10: Dam Failure Inundation Zones
- Figure S-11: Wildfire Susceptibility
- Figure S-12: Inventory of Hospital Locations
- Figure S-13: Inventory of Fire Facilities
- Figure S-14: Inventory of Emergency Response Facilities
- Figure S-15: Inventory of School Locations
- Figure S-16: Inventory of Communication Facilities
- Figure S-17: Inventory of Dam Locations
- Figure S-18: Inventory of Highway Bridges
- Figure S-19: Inventory of Facilities Storing Hazardous Materials
- Figure S-20: Airport Locations
- Figure S-21: Major Highway Locations
- Figure S-22: Rail Locations

G. Air Quality Element Changes

The Air Quality Element was examined to determine if revisions or additions were needed to ensure adequate regulatory compliance and address emerging air quality issues. Where necessary, policies or programs were developed to address relevant air quality issues. Additionally, new information and policies related to California laws and policies related to greenhouse gas (GHG) emission reduction would also be incorporated into the chapter under GPA No. 960.

The revised Air Quality Element includes a new GHG emissions reduction strategy including GHG reduction targets based on a countywide carbon inventory prepared as part of GPA No. 960. From it, goals and policies were developed to achieve the reduction targets in coordination with the Climate Action Plan (CAP) that has also been developed for Riverside County (see Section J below).

The proposed revisions to the Air Quality Element include updates to the air quality standards in General Plan Table AQ-1, the addition of greenhouse gas reduction targets (Policies AQ 18.1 through 18.5), the establishment of greenhouse gas reduction objectives (AQ 19.1 through 29.4) and also policies establishing various CAP milestones (AQ 27.1 through 29.4). Additionally, GHG-related text was also added in other locations in the General Plan, in particular Chapter 2 (Vision), to reinforce Riverside County's position and commitment to improving air quality and combating greenhouse gases.

H. Administration Element Changes

The Administration Element of the General Plan was examined and updates are included in GPA No. 960 where needed to ensure its policies and programs continue to reflect current planning practices and provide a clear and concise set of directions for the implementation of the General Plan. In particular, it would permit amendment to an Open Space-Conservation land use designation as a technical amendment if flood maps are revised either by the Federal Emergency Management Agency (FEMA) or the Riverside County Flood Control and Water Conservation District. Additionally, a provision is included that requires land use conversions from the Rural Community to Community Development Foundation Component within the city sphere of influence area be consistent with the policies outlined in the Land Use Element of Chapter 3.

I. Updates to General Plan Appendices

Several of the technical appendices to the General Plan were updated, revised or reissued as necessary to ensure that the General Plan continues to reflect current conditions and growth forecasts for Riverside County. These appendices were developed as part of GPA No. 960 to ensure up-to-date data is provided to support the policy and program directives in the General Plan and to update planning, land use, socioeconomic, potential environmental constraints (such as ambient noise or air quality levels) and other projections and analyses.

Where a General Plan Technical Appendix is updated as a part of GPA No. 960, it is indicated with a "-1" label (as in "Appendix E-1," for example) to denote the newer version. Some General Plan appendices are unchanged: B, C, D, G, H, J and L. The General Plan appendices updated as part of GPA No. 960 are as follows:

- Appendix A-1: Glossary of Terms/Acronyms (updated terms and information, where needed)
- Appendix B-1: General Planning Principles
- Appendix E-1: Socioeconomic Build-out Assumptions and Methodology (updated planning, socioeconomic and demographic assumptions)
- Appendix F-1: Population and Employment Forecasts (updated demographic data and forecasts)
- Appendix I-1: Noise Element Data (updated ambient noise data and new traffic noise modeling, as developed for the noise study prepared for this EIR, see Appendix EIR-7)
- Appendix K-1: Implementation Program (updated as needed to reflect General Plan policy changes)

- Appendix L-1: Riverside County Airport Land Use Compatibility Plans

J. Climate Action Plan

In conjunction with GPA No. 960, Riverside County prepared a Climate Action Plan to ensure that Riverside County is consistent with the State of California's overall GHG reduction plans developed to implement AB 32, California's Global Warming Solutions Act of 2006. The CAP includes a program for enacting Implementation Measures to be used to ensure that future development within unincorporated Riverside County achieves Riverside County's greenhouse gas reduction goals. See EIR Section 4.7 (Greenhouse Gases) for more information.

K. Proposals Not Included in GPA No. 960

A number of proposals that were identified for potential review in the Initial Study/NOP for this EIR were subsequently eliminated from GPA No. 960 for various reasons. The following list identifies those elements that are no longer a part of GPA No. 960. In some cases, for example, where environmental issues were deemed negligible or where regulatory deadlines required earlier processing, the proposals were processed as separate General Plan Amendments. None of these items, however, were deemed to result in or contribute to any significant or incremental environmental impacts.

- Land Use Element – Fee Lands within Native American Tribal Jurisdiction Policies (adopted under GPA No. 1088)
- Housing Element Update (adopted under GPA No. 1097)
- Administration Element Update (adopted under GPA No. 1075)
- Healthy Communities Element (new Element; adopted under GPA No. 1096)
- Multipurpose Open Space Element – Cultural Resources Policies (adopted under GPA No. 1083)

3.6 Consultations and Discretionary Actions

The County of Riverside (represented by the Riverside County Planning Department) is the Lead Agency for CEQA review of GPA No. 960. CEQA defines the "Lead Agency" as the public agency with the principal responsibility for carrying out or approving a project. Thus, it is under the County of Riverside's authority that this General Plan Amendment and EIR have been prepared. The information presented in this EIR represents the review and analysis of the County of Riverside and reflects the independent judgment of the County of Riverside.

The contents of the General Plan Amendment, its Programmatic EIR and associated technical appendices may be used by a number of public agencies in connection with a variety of discretionary decisions. Such actions may include approval, initiation, funding or contribution to any policies, public facilities or other programs intended to implement the General Plan as updated by GPA No. 960. Such actions may also include the eventual processing of development-level land use proposals (e.g., specific plans), as well as project-level review and approval of land use maps, such as tract and parcel maps, plot plans, conditional use permits, public use permits and other

discretionary County of Riverside actions related to land use implementation. Changes to zoning or other ordinances, as well as the proposal of new ordinances, may also result.

Pursuant to PRC Section 21153, the County of Riverside as Lead Agency, has consulted with each responsible agency, trustee agency, any public agency that has jurisdiction by law with respect to the proposed project, any city or county that borders the County of Riverside and all cities within the County of Riverside.

A. Project Consultations

1. Tribal Consultations

Tribal consultation per California Government Code (CGC) Section 65352.3 (i.e., SB 18, the Traditional Tribal Places Law) requires the lead agency to provide meaningful consultation to tribal governments on proposed or amended general plans and specific plans, to aid in the protection of tribal traditional places and cultural resources through local land use planning.

California State's Native American Heritage Commission (NAHC) maintains a database of tribal governments recognized by the State of California and, when requested, provides lead agencies with contact information for appropriate tribal representatives. Of the fifteen tribal governments on the NAHC list for the proposed project, only five formally requested consultations within the 90 days response period (September 2009 through December 2009). A project overview presentation was given on February 23, 2010, to all interested tribal representatives. Individual tribal consultation occurred between March and August 2010.

During the initial individual consultation meetings, the project scope was reiterated and tribal representatives identified specific areas of the proposed project for further discussion. The requested sections were sent to each tribal group. Soon thereafter, a series of one to four consultation meetings were held with the individual groups. During these consultation meetings, Riverside County Planning Department staff provided specific policy updates and clarified the objectives and goals of each proposed component of GPA No. 960. Through this process, tribal representatives were able to express concerns with the proposed project in a confidential setting. Any requests for additional information were met.

Dependent upon the level of interest shown at this stage of consultation, in August 2010 letters were sent out to either conclude the consultation efforts and/or solicit summary of comments. As the project moved into the last stage of development, a letter to each tribal group, along with the draft General Plan, was sent to the tribal representatives between June and July of 2011 to update them on the status of GPA No. 960 and provide additional consultation opportunities, as well as identify other venues for comments.

As a result of the tribal consultations, several elements have been incorporated into GPA No. 960. These include recognition of tribal boundaries and an update to the Eastern Coachella Valley Area Plan to address tribal holdings and the Salton Sea. Cultural resource protection was also enhanced throughout the General Plan; though many of these issues were ultimately addressed in GPA No. 1083, as noted in the prior section.

2. Safety Element Consultations

Government Code Section 65302(g)(5) requires the County of Riverside to consult with the California Geological Survey and the State Office of Emergency Services prior to revision of the General Plan Safety Element to ensure the State of California's latest information and data are incorporated appropriately. Towards this end, Riverside

County Planning Department staff met with representatives from the Department of Conservation and the Office of Emergency Services. In a collaborative effort, the County of Riverside updated its fire hazard maps to reflect the most-recent State Responsibility Areas and Local Responsibility Areas. See General Plan Figure S-11. Corresponding fire-related policies were also updated.

3. Airport Land Use Commission (ALUC) Consultation

Public Utilities Code (PUC) Sections 21670-21679.5 call for counties and cities to ensure the orderly expansion of the airports located in, or affected by, their jurisdictions. This includes, in particular, the adoption of land use measures to minimize the public's exposure to excessive noise and safety hazards around public airports, as well as ensuring new incompatible uses are kept out of these areas. Accordingly, Riverside County's General Plan includes policies and maps intended to assure these protections.

For the ALUC consistency review of the General Plan, Riverside County Planning Department staff worked with ALUC staff to resolve planning issues within the General Plan's mapped "Airport Influence Areas." An initial presentation was made to ALUC on April 16, 2009, and a series of monthly technical meetings between ALUC and the Planning Department occurred through December 2009. An ALUC public workshop was held on March 11, 2010, and an additional technical meeting occurred on April 12, 2010. Meetings with the Second and Fourth Supervisorial District representatives were also held on May 5 and 25, 2010, specifically to discuss potential land use changes within the Airport Influence Areas within those Districts. Meetings with an ALUC subcommittee were held on December 10, 2009 and March 1, 2010. As a result of all of these meetings, a number of revisions were made to the General Plan in regards to airports and their respective Airport Influence Areas.

On July 10, 2014, ALUC reviewed the March 2014 edition of GPA No. 960 and found it consistent with all the applicable Airport Land Use Compatibility Plans provided that certain modifications were made including amendments to: Policy LU 6.1; a paragraph in the Circulation Element addressing Local Aviation Facilities; policies within the Mead Valley, Harvest Valley/Winchester and Reche Canyon/Badlands Area Plan to address compliance with the 1984 Riverside County Airport Land Use Plan; Appendix L-1 to include the 1984 Riverside County Airport Land Use Plan and the 1992 Hemet-Ryan Airport Comprehensive Land Use Plan. To complete the ALUC consistency review, modifications requested by the Commission are incorporated into the revised and recirculated GPA No. 960 document.

B. Discretionary Actions and Future Approvals

The following list specifies non-exhaustively and non-exclusively the approvals necessary for the project. The Riverside County Board of Supervisors will review GPA No. 960 and its EIR (No. 521, e.g., this document) and supporting documents to consider whether or not to take the following actions:

- Adoption of General Plan Amendment No. 960, encompassing updated texts and maps for the Riverside County General Plan, including its 19 Area Plans and its Appendices.
- Certification of Program Environmental Impact Report No. 521 prepared for GPA No. 960.
- Approval of EIR No. 521 Findings.
- Adoption of a Mitigation, Monitoring and Reporting Program in conjunction with EIR No. 521.

Subsequent to these actions, a number of future actions may be based (in whole or in part) upon the environmental evaluations undertaken as part of EIR No. 521 for the project. Subsequent development projects

may require review and approval by various Riverside County agencies or departments, including (but not limited to):

- Changes of zone, specific plans, tentative tract and parcel maps, conditional use permits, plot plans and other discretionary development approvals.

- Consistency analysis, review and approvals of activities subject to the Western Riverside County Multi-Species Habitat Conservation Plan or Coachella Valley Multi-Species Habitat Conservation Plan.

- A variety of county service and infrastructure providers are expected to use the Riverside County General Plan, as amended by GPA No. 960, as a long-range planning document for determining how to meet the specific needs served by the agency. For example, planning future service demands for landfills (Riverside County Waste Management Department), roads (Transportation Department), regional parks (Regional Parks and Open Space), detention facilities (Riverside County Sheriff's Department), among others, would need to identify and plan for the capacities needed to serve the County of Riverside's populace as it grows over the next 50 years.

Additionally, subsequent development projects may also require review and approval by various departments or agencies outside of the County of Riverside, including (but not limited to) those listed below. It should be noted that the following actions are associated with the future development of Riverside County as it builds out pursuant to the General Plan. That is, actions of the types listed here would occur whether or not the proposed project, GPA No. 960, was approved. And, as such, these actions are listed as general items and are not directly associated with GPA No. 960.

- Future development affecting a protected (threatened or endangered) species or its Critical Habitat occurring outside of areas covered by the two Multiple Species Habitat Conservation Plans or other HCPs within Riverside County, or for species or habitats not covered by such, would need an incidental take permit from the U.S. Fish and Wildlife Service issued pursuant to the federal Endangered Species Act.

- Future development affecting Waters of the U.S. or adjacent wetlands would need a fill permit from the U.S. Army Corps of Engineers issued pursuant to Section 404 of the federal Clean Water Act (CWA).

- Prior to obtaining a CWA Section 404 permit, a future use may also need to obtain water quality certification or waiver from the applicable Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act.

- Future development affecting native habitat within a streambed may need a Streambed/ Bank Alteration Agreement issued by the California Department of Fish and Wildlife pursuant to Section 1600 *et seq.* of the California Fish and Game Code.

- Future uses, such as industrial for example, may need air quality operating permits for boilers or other large combustion-based equipment from the Southern California Air Quality Management District or the Mojave Desert Air Quality Management District.

- Future uses within or altering a 100-year floodplain or other FEMA-mapped flood hazard area would need to obtain a Letter of Map Revision (LOMR), Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Revision Based on Fill (CLOMR-F) that describes the effect that the proposed project or fill would have on the NFIP (National Flood Insurance Program) map.

- Future uses, such as industrial or medical, for example, may need hazardous material handling, use, storage and/or disposal permit(s) from the appropriate local, regional, state or federal agency. For example, a radioactive materials permit from the Nuclear Regulatory Commission or State Department of Toxic Substance Control.

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Section 4.1

Environmental Assumptions and Methods

Section 4.1
Environmental Assumptions and Methods

4.1.1 Introduction

The Riverside County General Plan is intended to be a blueprint for Riverside County's future. It describes the future growth and development within the county over the long term. It acts as a constitution for public and private development, the foundation upon which County of Riverside authorities will make growth and land use-related decisions. The General Plan is meant to express the community's goals with respect to human-made and natural environments, and to set forth policies and implementation measures to achieve these goals for the welfare and betterment of those who live, work and do business in Riverside County. Accordingly, GPA No. 960 includes a variety of revisions and updates to the General Plan, proposed to ensure the General Plan remains an effective tool for planning and implementing Riverside County's future over time.

This Program EIR reviews the potential environmental effects of the proposed project, GPA No. 960, for each of the following areas:

- Agricultural and Forestry Resources
- Land Use
- Housing and Population
- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural and Paleo. Resources
- Energy Resources
- Flood and Dam Inundation Hazards
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazardous Materials and Safety
- Mineral Resources
- Noise
- Parks and Recreation
- Public Facilities
- Transportation and Traffic
- Water Resources

Section 4.0 of the EIR presents information on the existing setting, impacts, effectiveness of regulatory compliance, mitigation measures and level of significance after mitigation for each of the above environmental issues. Thresholds of significance are also listed for each issue and provide criteria for determining the

significance of any impacts associated with the proposed project. A discussion of the assumptions and methodology used to analyze the proposed project in this Program EIR, as well as those used to project the future scenarios against which impacts were analyzed, is provided below.

4.1.2 Assumptions and Methodology for Projections

A. Background

The environmental impacts that would result from future development accommodated by the proposed project would not occur at a single time, nor would they occur in a single location. Impacts to the environment resulting from the project would occur as the result of many individual private development and public works projects undertaken in compliance with applicable provisions of the General Plan, as amended by the proposed project, over an estimated 40-year period throughout unincorporated Riverside County. Thus, the project's EIR summarizes the impacts that could collectively (cumulatively) result from these individual actions and projects. The projections developed for the current existing General Plan, as well as those for the GPA No. 960 changes, form the basis for the impact analysis contained in this EIR. They represent estimates of the population, dwelling units and employment within unincorporated areas of Riverside County that could exist at build out of the current Riverside County General Plan and for the General Plan as it would be if amended by the proposed project, GPA No. 960. Where specific land use-related (spatial) changes would result from GPA No. 960, they are analyzed as a subset of General Plan build out.

A key concept in this EIR General Plan analysis is that projections reflect a theoretical build out of all unincorporated areas, which is estimated to occur around 2060. For regional coordination and infrastructure planning purposes, the Southern California Association of Governments (SCAG) develops 20- to 25-year projections. These shorter timeframes allow for close tracking of near-term infrastructure and improvement schedules, but are driven primarily by demographics, which are constantly changing. In contrast, the General Plan is primarily concerned with land use and spatial patterns that develop over much longer periods. Hence, the shorter timeframe would not be suitable for this EIR's purposes, as it would not capture the full extent of build out expected in the county. It should be remembered, however, that the actual rate of development is driven by the economy and is not under the control of government officials. The projections used in this EIR are theoretical and are used as the basis for environmental analysis and to compare various alternative scenarios.

B. Build Out Assumptions and Factors

The projections developed for the General Plan and proposed project estimate potential population, dwelling units and employment for unincorporated areas of the county, both generally (full county) and specifically for the subset of unincorporated county areas potentially affected by specific land use-related maps and policy changes proposed under GPA No. 960. This "spatial" subset represents changes that can be reasonably foreseen to occur in a specific location. During preparation of the initial (2003) RCIP General Plan, a number of statistical analyses were performed. In particular, a series of minimum, mid-range and maximum projections were prepared and studied to determine which would yield the most appropriate build out results for the purposes of environmental analysis. Through analysis, it was determined that the midrange projections for population, dwelling units and floor-area ratios (which affect employment calculations) would be most representative of a reasonably foreseeable future build out. The resultant midrange values are shown in Table 4.1-A (Dwelling Units per Acre Midpoint Assumptions). Mid-range projections are utilized because the installation of required infrastructure (e.g., roads and utilities), as well as the presence of environmental constraints (e.g., fault hazard zones, floodways, steep

slopes, high fire hazard areas, etc.), generally preclude maximum development of vacant lands. Midrange projections are a realistic approximation of the population, dwelling unit and employment growth that results from implementation of the General Plan, that also reflect a conservative approach that does not underestimate impacts.

As part of the preparation of GPA No. 960, the Riverside County Center for Demographics Research (RCCDR) undertook examination of all factors listed in Appendix E of the existing General Plan. They evaluated the existing factors in light of the most recent data available, including official Riverside County growth projections (RCP-07 and RCP-08), current SCAG data (2008 Regional Transportation Plan, etc.), current General Plans of cities within Riverside County, published data (U.S. Census, ULI Handbooks, etc.) and statistics issued by the California Department of Finance. The resultant statistical data was used to create proposed General Plan Appendix E-1 as part of GPA No. 960. As Appendix E-1 represents the most current and appropriate growth and demographic data, it was used for the statistical analyses performed for EIR No. 521. For full details on the methodology used for the generation of these projections and assumptions, see General Plan Appendix E-1.

In preparing GPA No. 960, two sets of key build out projections were developed. First, new build out projections were calculated for the General Plan to compile all of the changes that have occurred since its October 2003 adoption (through October 2009); particularly those General Plan Amendments that altered mapped Land Use Designations (LUDs). To ensure the accuracy and consistency of these projections, in some cases further development or clarification of assumptions were also made. Also, various socioeconomic factors, such as household occupancy, for example, were also updated through input from RCCDR.

The results of these updates are codified into the assumptions and methods reflected in General Plan Appendix E-1, which is proposed as part of GPA No. 960 as a replacement for the existing General Plan Appendix E. The basic components of Appendix E-1 were used to develop the land use and associated socioeconomic calculations for build out of both the existing General Plan and a "project" scenario for how the General Plan would build out if amended pursuant to GPA No. 960. These factors and calculations are used throughout this EIR and were derived according to the following methods.

1. Land Use Data

The County of Riverside maintains a geographic information system (GIS) database in which a variety of data is stored with links to geographical locations. The database encompasses a wide variety of data, including the locations of cities, Tribal lands, federal lands, freeways and highways, etc., boundaries for school districts, water districts, park districts and other public services. It also contains countywide information on a variety of environmental constraints, including soil types, seismic fault zones, floodplains, vegetation and mineral resources, to name just a few. As a result, GIS can provide a range of information and analyses for a given area – be it a parcel, block, city or region. It also provides summarized countywide data. This GIS database is known as RCLIS, the Riverside County Land Information System.

One of the levels of information, or layers, maintained through GIS is base Land Use Designations (LUDs), in which a General Plan LUD is assigned to each parcel of land within Riverside County under County of Riverside jurisdiction. (Thus, cities, Indian Reserves, National Forests, State Parks, etc., are not assigned LUDs.) These areas are organized into the 19 Area Plans of the General Plan, plus the remaining unincorporated (far east desert) areas addressed at the end of the General Plan Land Use Element. RCLIS was used to determine the total number of acres assigned to each of the General Plan LUDs for each Area Plan and for the other unincorporated areas. This "base acreage" was then adjusted as deemed appropriate based on any applicable planning assumptions, such as for Policy Areas, Community Centers and others. General Plan Appendix E-1 provides a complete description of these additional assumptions.

2. Dwelling Units

Dwelling units represent homes of all types, from the traditional stand-alone single-family home to multi-family residences, such as apartment complexes, condominiums or townhomes, as well as mobile homes, modular homes and any other type of unit. The General Plan includes 16 types of residential land use densities, ranging from Rural Residential (which calls for 5-acre minimum lots) to Highest Density Residential (which allows 20+ units per acre). Several LUDs, such as Agriculture, that are not primarily residential but allow a limited amount of residential development (e.g., Agriculture allows one unit per 10 acres), also contribute to Riverside County residential totals.

Each residential LUD is associated with a range of dwelling units, as shown in Table 4.1-A, below. As per the methods outlined earlier, for each LUD a midpoint was determined by RCCDR based on actual housing product types and associated acreage needed for roads and rights-of-way, drainage and other easements, water and sewer facilities, and other public facilities typically found in residential areas, such as local parks, elementary schools, etc. The listed midpoints are the values used for theoretical projection purposes throughout this EIR.

To determine the number of dwelling units expected within each residential LUD, the number of gross acres provided by RCLIS was multiplied by the LUD's respective du/ac factor. For example, 400 acres of Medium Density Residential, with a density range of 2.0 to 5.0 du/acre, has a midpoint of 3.5 du/acre. Thus, for planning projection purposes, a total of 1,400 dwelling units would be associated with these 400 acres (400 ac x 3.5 du/ac = 1,400 du).

3. Population

To reflect variations of household size associated with different regions of Riverside County, separate average household size figures developed by the RCCDR were used to determine projected population. These population projections, based on adopted 2010 Riverside County projections (RCP-10), are included in Table E-2 of proposed General Plan Appendix E-1 and are reproduced in Table 4.1-B (Area-Specific Population Factors).

Population is determined by multiplying the projected number of dwelling units (derived from LUD acreage per above) by the average persons per household. For example from above, a population projection for 400 acres of Medium Density Residential located in the Temescal Canyon Area Plan would result in a population estimate of 5,040 persons (1,400 dwelling units x 3.60 persons per du).

Table 4.1-A: Dwelling Units per Acre Midpoint Assumptions

General Plan Land Use Designation	Midpoint Factor (du/acre)	Range (Min. – Max.) (du/acre)
Agriculture (AG)	0.05	0 - 0.1
Rural Residential (RR)	0.15	0.1 - 0.2
Rural Mountains (RM)	0.05	0 - 0.1
Rural Desert (RD)	0.05	0 - 0.1
Open Space – Rural (OS-RUR)	0.025	0 - 0.05
Rural Community – Estate Density (EDR-RC)	0.35	0.2 - 0.5
Rural Community - Very Low Density (VLDR-RC)	0.75	0.5 - 1.0
Rural Community – Low Density (LDR-RC)	1.50	1.0 - 2.0
Estate Density (EDR) – Community Development	0.35	0.2 - 0.5
Very Low Density (VLDR) – Comm. Development	0.75	0.5 - 1.0
Low Density (LDR) – Comm. Development	1.50	1 - 2
Medium Density (MDR) – Community Development	3.5	2 - 5
Medium High Density (MHDR) – Comm. Development	6.5	5 - 8

General Plan Land Use Designation	Midpoint Factor (du/acre)	Range (Min. – Max.) (du/acre)
High Density (HDR) – Community Development	11.0	8 - 14
Very High Density (VHDR) – Comm. Development	17.0	14 - 20
Highest Density (HHDR) – Community Development	30.0	20 - 40

Source: RCIP General Plan, Table LU-4, 2003. Proposed (GPA No. 960) General Plan Appendix E-1, 2010.

Table 4.1-B: Area-Specific Population Factors

Planning Area	Population Factor	Planning Area	Population Factor
Desert Center	3.61	Mead Valley	3.79
East Riverside County – Desert Area [1]	3.23	Palo Verde Valley	3.00
Eastern Coachella Valley	4.92	Reche Canyon / Badlands	3.03
Eastvale	3.69	Riverside Mountainous Area (REMAP)	2.74
Elsinore	3.18	San Jacinto Valley	2.82
Harvest Valley / Winchester	2.91	Southwest Area (SWAP)	3.17
Highgrove	3.21	Sun City / Menifee Valley	2.51
Jurupa	3.68	Temescal Canyon	3.60
Lake Mathews / Woodcrest	3.34	The Pass	2.88
Lakeview / Nuevo	3.21	Western Coachella Valley	2.56
March [1]	1.96	General (Unincorporated Riverside County)[2]	3.06

Footnotes:
1. Not part of an Area Plan. See General Plan Land Use Element.
2. Value per RCP-10 for unincorporated Riverside County as a whole.

Source: Developed by RCCDR for Proposed (GPA No. 960) General Plan Appendix E-1, 2010.

4. Employment

There are two types of employment projections associated with the General Plan: one, the number of potential workers expected to be living in the projected number of homes for an area; and, two, the number of jobs expected to be associated with a given non-residential land use (such as commercial, industrial, agricultural, etc.)

To determine the number of potential workers resulting from residential land uses, the estimated population is multiplied by the "participation rate." The participation rate is the percent of the population that is expected to be working and that is either employed or not employed but actively seeking work. The participation rate for Riverside County, as defined by RCCDR in the latest Riverside County population and employment forecasts (Appendix F-1), is 44.86%. That is, of the total population of Riverside County, 44.86% are of employable age and availability for participating in the work force. Using this participation rate in the earlier example, the 5,040 residents would yield 2,261 workers.

In terms of calculating jobs associated with specific land uses, for example commercial-retail, several factors must be considered. Some LUDs, such as Agriculture, have direct factors for employees per acre, as shown in Table 4.1-D (Employment Factors), below. For most LUDs, such as commercial, industrial and other employment-generating land uses, determining the number of associated jobs is a multi-step process that requires the computation of net acreage, gross square footage and permitted square footage. These steps are outlined fully in Appendix E-1. To summarize:

Gross to Net Acreage: Gross acreage (based on mapped General Plan LUD values, as reported by RCLIS) is converted to a net acreage value to accommodate the developable areas that are needed for roads, easements and other such features. For commercial, heavy industrial and business park land uses, 25% of the gross acreage is assumed necessary for these features, leaving a net of 75% of the site developable. For light industrial land uses, 20% of the gross acreage is assumed necessary infrastructure and other features. Based on this process, 200 gross

acres of land with a Commercial Retail LUD would yield 150 net acres (200 acres x 0.75 net factor), while 200 gross acres of Light Industrial would yield 160 net acres (200 acres x 0.80 net factor).

Net Acreage to Square Footage: Net acreage is converted into a square footage value by multiplying the acreage by 43,560 (the number of square feet in one acre). Hence, the examples stated above would translate into totals of 6,534,000 square feet of Commercial Retail and 6,969,600 square feet of Light Industrial uses.

Building Square Footage: Because the County of Riverside does not allow land to be covered 100% by buildings, each non-residential LUD has an associated "Floor-to-Area Ratio" (FAR) assumption which specifies the amount of a site which may be covered with buildings. FARs were developed based on building size and lot coverage of existing inventory in Riverside County and the requirements of typical constraints encountered when gross acreage is engineered into a developed site plan. In particular, the need for parking, egress, grading and slopes, infrastructure easements, landscaping, etc., all affect the total amount of developable land and, thus, net lot size.

The FAR assumptions used for this EIR analysis are presented in Table 4.1-C (Floor-to-Area Ratio Midpoint Assumptions), below. Continuing with the earlier examples, the Commercial Retail site would have a built area of 1,502,820 square feet (6,534,000 square feet x 0.23 FAR) and the Light Industrial site would have 2,648,448 square feet (6,969,600 square feet x 0.38 FAR). Again, it should be noted that the FAR values in Table 4.1-C represent midpoint assumptions determined to be most appropriate for use in estimating future theoretical build out for planning purposes.

Table 4.1-C: Floor-to-Area Ratio Midpoint Assumptions

Land Use Designation	Floor-to-Area Ratio Midpoints
Commercial Retail (CR) *	0.23
Commercial Tourist (CT)	0.25
Commercial Office (CO)	0.35
Light Industrial (LI)	0.38
Heavy Industrial (HI)	0.40
Business Park (BP)	0.30

* Pursuant to General Plan Policy 23.2, it is assumed that Commercial Retail land uses will build out 40% as Commercial Retail, with the remaining 60% converting to Medium Density Residential (MDR) land use.
Source: Proposed (GPA No. 960) General Plan Appendix E-1, Table E-4, 2010.

Employees: Lastly, once building square footage has been determined, an estimate of the number of jobs (employees) expected to be generated as a result of the given LUD acreage can be made. Employment factors for individual land uses vary and are based on research performed by RCCDR in which actual employment figures were compared against the square footage of the business' buildings to develop job generation factors. These factors are presented in Table 4.1-D, below. Concluding the previous examples, the 1,502,820 square feet of Commercial Retail land use would generate an estimated 3,006 employees (1,502,820 square feet divided by 1 employee per every 500 square feet) and the Light Industrial land use would generate an estimated 2,571 employees (2,648,448 square feet divided by 1 employee per every 1,030 square feet).

Table 4.1-D: Employment Factors

Land Use Designation	Employment Factor
Commercial Retail (CR) *	1 employee / 500 square feet
Commercial Tourist (CT)	1 employee / 500 square feet
Commercial Office (CO)	1 employee / 300 square feet
Light Industrial (LI)	1 employee / 1,030 square feet
Heavy Industrial (HI)	1 employee / 1,500 square feet
Business Park (BP)	1 employee / 600 square feet
Agriculture (AG)	0.05 employee / acre

Land Use Designation	Employment Factor
Open Space – Mineral Resources (OS-MIN)	0.03 employee / acre
Open Space – Recreation (OS-REC)	0.15 employee / acre

* Pursuant to General Plan Policy 23.2, it is assumed that Commercial Retail land uses will build out 40% of the total acreage as Commercial Retail, with the remaining 60% converting to Medium Density Residential (MDR) land use.
Source: Proposed (GPA No. 960) General Plan Appendix E-1, Table E-5 2010.

4.1.3 Riverside County Build Out Projections

The projections developed for the General Plan estimate potential population, dwelling units and employment for unincorporated areas of the county. The mapped General Plan LUDs plus related policies serve as the basis for these projections. It must be remembered that these projections reflect theoretical build out estimates for the unincorporated areas, rather than what will actually be developed over the next 50 years. As stated previously, the actual rate of development is driven by the economy and is not under the control of government officials.

Table 4.1-E: Projections for Existing General Plan Build Out by Area Plan

Area Plan	Area (Acres)	Dwelling Units	Population	Workers[1]	Jobs[2]
Western Riverside County					
Eastvale	8,108	21,094	73,944	33,171	16,788
Elsinore	80,699	15,483	46,775	20,983	14,951
Harvest Valley-Winchester	29,084	35,272	97,509	43,742	42,079
Highgrove	3,956	5,374	16,389	7,352	4,007
Jurupa	28,328	41,389	144,694	64,910	99,702
Lake Mathews-Woodcrest	49,690	22,701	72,029	32,312	4,966
Lakeview-Nuevo	27,762	41,301	125,946	56,499	14,856
Mead Valley	20,312	11,472	41,305	18,529	27,995
The Pass	65,324	17,956	49,127	22,038	4,530
Reche Canyon-Badlands	49,868	1,983	5,707	2,560	5,593
REMAP	511,850	34,408	89,565	40,179	37,497
San Jacinto Valley	53,278	24,771	66,360	29,769	17,916
Southwest	137,759	36,898	111,118	49,847	28,345
Sun City-Menifee	3,916	1,424	3,395	1,523	4
Temescal Valley	43,306	16,871	57,700	25,884	20,783
Western Riverside County Subtotal	***1,113,238***	***328,395***	***1,001,562***	***449,301***	***340,009***
Eastern Riverside County					
Desert Center	185,720	8,705	29,854	13,392	33,270
Eastern Coachella Valley	421,237	87,551	409,213	183,573	115,328
Palo Verde Valley	280,761	14,682	41,845	18,772	29,039
Western Coachella Valley	236,880	59,639	145,043	65,066	77,521
Non-Area Plan (Far East)	1,772,650	32,560	99,910	44,820	0
Eastern Riverside County Subtotal	***2,897,249***	***203,138***	***725,864***	***325,623***	***255,159***
Countywide Total	**4,010,488**	**531,532**	**1,727,427**	**774,924**	**595,168**

Footnotes:
1. Based on a Riverside County employment participation rate of 44.86%.
2. Includes all projected development within Agriculture, Commercial Retail, Commercial Tourist, Commercial Office, Light Industrial, Heavy Industrial, Business Park and Community Center LUDs.
Source: Proposed (GPA No. 960) General Plan Appendix E-1, Table E-5, 2010.

Table 4.1-F: Projections by Area Plan for General Plan Build Out with the Project

Area Plan	Area (Acres)	Dwelling Units	Population	Workers[1]	Jobs[2]
Western Riverside County					
Eastvale	8,001	20,947	73,429	32,940	16,496
Elsinore	80,685	15,401	46,526	20,871	13,671
Harvest Valley-Winchester	29,085	35,029	96,838	43,442	42,071
Highgrove	3,952	5,370	16,375	7,346	4,007
Jurupa	28,260	41,194	144,013	64,604	99,825
Lake Mathews-Woodcrest	49,702	22,699	72,023	32,309	5,057
Lakeview-Nuevo	27,746	41,275	125,870	56,465	18,666
Mead Valley	20,311	11,373	40,949	18,370	27,955
The Pass	65,327	15,161	41,481	18,604	4,543
Reche Canyon-Badlands	49,878	1,947	5,604	2,514	5,589
REMAP	511,855	25,418	66,163	29,681	4,843
San Jacinto Valley	53,274	24,333	65,188	29,243	18,014
Southwest	137,780	37,256	112,197	50,331	28,615
Sun City-Menifee	3,910	1,421	3,388	1,520	4
Temescal Valley	43,304	16,923	57,877	25,964	20,775
Western Riverside County Subtotal	***1,113,070***	***315,746***	***967,919***	***434,208***	***310,131***
Eastern Riverside County					
Desert Center	185,720	8,705	29,853	13,392	33,270
Eastern Coachella Valley	421,252	89,122	416,555	186,867	116,342
Palo Verde	281,401	14,915	42,508	19,069	27,059
Western Coachella Valley	236,894	59,691	145,168	65,122	77,548
Non-Area Plan	1,772,616	32,559	99,908	44,819	0
Eastern Riverside County Subtotal	***2,897,883***	***204,991***	***733,991***	***329,268***	***254,219***
Countywide Total	**4,010,953**	**520,737**	**1,701,910**	**763,477**	**564,350**

Footnotes:
1. Based on a Riverside County employment participation rate of 44.86%.
2. Includes all projected development within Agriculture, Commercial Retail, Commercial Tourist, Commercial Office, Light Industrial, Heavy Industrial, Business Park and Community Center land use designations.

Source: Proposed (GPA No. 960) General Plan Appendix E-1, Table E-5, 2010.

Based on the methodologies described above, a variety of socioeconomic projections (dwelling units, population and jobs) were developed for build out for each of the Riverside County Area Plans and other unincorporated areas. These projections are summarized by Area Plan in Table 4.1-E (Projections for Existing General Plan Build Out by Area Plan) with further detail provided for each Area Plan, including LUD tables, provided in Appendix EIR-2. For each area, two sets of projections are provided: The first codifies updated projections for the existing General Plan adjusted to reflect all of the General Plan Amendments adopted since October 2003; the second illustrates expected build out of the General Plan as it would exist if the proposed project, GPA No. 960, is adopted. The same baseline assumptions (as per Appendix E-1) have been used for both sets of projections to allow meaningful comparison between the two scenarios. These projections are utilized throughout this Program EIR where "plan-to-plan" discussions are presented to highlight the degree or scope of a proposed change. (See below for information on environmental baselines.)

4.1.4 Methodology for Environmental and Impact Analyses

The State CEQA Guidelines (CCR Section 15121) state that the purpose of an EIR is to serve as the informational document intended to "inform public agency decision-makers and the public generally of the significant environmental effect, identify possible ways to minimize the significant effects and describe reasonable alternatives to the project." In order to do this, the EIR provides information and analyses on a number of environ-

mental issues. Each environmental issue includes information on the environmental setting, environmental impacts and measure to mitigate significant effects. The scope and specifications generally used in the preparation of these areas for each environmental issue include the following.

A. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they exist at the time the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting will constitute the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used instead and a discussion of how it is or is not expected to differ from the existing physical conditions is provided. It should be noted here that 'substantial evidence' refers to "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact," (PRC Section 21080(e)(1)). Further, 'substantial evidence' does not include "argument, speculation, unsubstantial opinion or narrative, evidence of social or economic impacts that do not contribute to, or are not cause by, physical impacts on the environment."

Each chapter in Section 4.0 of this EIR includes a description of the specific environmental baseline data presented and used, plus a discussion of how and why the sources used were determined to be the best-supported substantial evidence available.

B. Existing Environmental Conditions

As outlined in the State CEQA Guidelines, Section 15125, an EIR must include a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation is published." For this EIR, that date is April 13, 2009. The section also states that "this environmental setting will normally constitute the baseline physical conditions."

Thus, for each issue area analyzed in this EIR, a brief summary of the local and regional environmental conditions (both naturally-occurring and man-made) in existence at the time this Program EIR was prepared has been provided. This data provides the reader with the "baseline" from which future impacts are analyzed. The existing setting provides a "snap shot" of the environment at a particular point in time.

C. Existing Regulations

Each section also includes a description of the relevant existing federal, state and local statutes and regulations that apply to the given environmental area. It should be remembered that these regulations apply to all entities and situations, with or without the proposed project. That is, these regulations represent compliance measures that must be carried out when circumstances warrant, although in some cases the lead agency (Riverside County, in this case) has the ability to determine when or how the specific regulation applies to a given case. Generally, the regulations cited indicate the regulatory or programmatic directives under which the County of Riverside operates. In most cases, the regulations are implemented on a case-by-case basis as appropriate for the given project proposal before the County of Riverside. As part of the project approval process, contractual Conditions of Approval are developed by the County of Riverside that establish explicit requirements that must be satisfied.

Various Riverside County Departments, including Planning, Transportation, Fire, Building and Safety, Environmental Health, Waste Management and Flood Control, are responsible for monitoring implementation and verifying completion of the Conditions of Approval related to their areas of governance. Specifically, a project is not allowed to go forward with its next stage of development if specific conditions are not met. These conditions can include a variety of environmental requirements designed to ensure compliance with both CEQA and the various environmental protection laws. In this way, a set of standard Conditions of Approval are developed and approved for each discretionary project approved by the County of Riverside as a means for monitoring and ensuring compliance with applicable laws, regulations and policies.

As an example of how this system works, the Conditions of Approval for a four-lot residential subdivision might specify that "Prior to Grading" the proposed site must be subject to a biological assessment to verify that no sensitive species occur on the site. Thus, an applicant would not be able to obtain a grading permit for the project site until the Riverside County Planning Department reviews a biological study for the site and signs off on it. A variety of other development milestones, such as tract map recordation, building permit issuance, occupancy permit issuance and others, can thus serve as compliance points monitored and enforced by the County of Riverside.

D. Thresholds of Significance

Determinations of the significance of potential impacts resulting from implementation of the proposed project use the thresholds of significance from Appendix G of the State CEQA Guidelines. In addition, for some environmental issues, additional or modified thresholds are included to address special areas of concern unique to the County of Riverside, for example, the Palomar Observatory Special Lighting Zone. These thresholds represent the criteria used in this EIR to determine whether or not the impacts identified are significant.

E. Project Effects

This section provides a summary of how the proposed project, GPA No. 960, would change or affect the General Plan document and affect the anticipated future build out of the General Plan relative to the environmental issue being discussed. In some instances, the proposed project would only affect resources for specific, localized areas. This is particularly true of spatial impacts associated with proposed land use-related changes, such as the deletion of specific Rural Village Overlays, the alteration of mapped LUDs for specific parcels and so on. Where such areas are foreseeable in connection to the proposed project, they are analyzed and disclosed in this EIR. In other cases, proposed changes would result in future development in locations that cannot be reasonably foreseen at this time. For such cases, additional site-specific CEQA review and analysis would be necessary and project-specific mitigation developed, if necessary, to augment the programmatic approach outlined in this EIR.

Other proposed changes are countywide, for example the Air Quality Element revisions to address greenhouse gases, and do not have specific spatial components. As such, these types of impacts are analyzed and addressed on a countywide level. Future site-specific development proposals would implement or tier off the programmatic mitigation outlined in this EIR.

For both spatial and countywide analyses, to determine the scope of project effects, it was necessary to develop both a baseline scenario describing the existing environmental conditions and a project scenario describing the projected condition of Riverside County at General Plan build out with the adoption of the changes proposed in GPA No. 960.

These two scenarios were developed by the Riverside County Center for Demographic Research (RCCDR) for Riverside County as a whole based on Board of Supervisors-adopted demographic projections, existing demographic data and the land use mapping and assumptions called for in the General Plan (existing and proposed). The demographic data used was also consistent with that submitted by the County of Riverside to the two regional governmental coordination agencies, WRCOG (Western Riverside County Organization of Governments) and CVAG (Coachella Valley Association of Governments), as well as SCAG, the Southern California Association of Governments, responsible for wide-scale regional planning in Southern California. These scenarios also formed the basis for other demographic-based data modeled and used in this EIR: traffic generation, noise generation, air quality and greenhouse gas emissions, as well as population and housing issues.

In addition, two scenarios (baseline and project build out) were also developed for the portions of the project, GPA No. 960, with the potential for reasonably foreseeable spatial effects (that is, effects tied to *specific* locations). The baseline condition was derived from SCAG land use data updated through visual analysis of Riverside County's RCLIS aerial photo bank. The aerial inspections were used to determine actual uses present on the parcels of interest, including counts of actual number of dwelling units (homes) apparent. From the actual dwelling units, population numbers were calculated according to the methods and assumptions of proposed General Plan Appendix E-1. Non-residential uses (employment figures, etc.) were also calculated per Appendix E-1 assumptions.

For the project build out scenario, the proposed General Plan Land Use Designations (LUDs) with any overlay or policy area (whichever land use option resulted in the greatest development potential) were used to represent the future build out condition of the sites. Though unlikely to occur in the real-world, a build out of 100% of these lands was assumed to represent a "worst case" scenario environmentally. From the proposed LUDs, dwelling unit numbers, populations, business square footage and employment figures were calculated. Again, these values were developed as per the methods, assumptions and factors proposed in General Plan Appendix E-1. The results of both scenarios are presented in Section 4.2 (Land Use). See Tables 4.2-F and 4.2-G, in particular.

For various environmental impacts analyzed in this EIR, the land use and demographic results of the two scenarios (baseline and project build out) were then used as the basis for various theoretical resource usage projections. For example, existing and build out electricity demand values were calculated using the same set of energy factors for both scenarios. The control of variables in this way allows for a reasonable comparison between the two values, necessary to highlight how the project would affect the resource – electricity demand, in this example – between existing use and the future contemplated by this project. The resultant impacts and any necessary mitigation are then described in the two remaining sections of the EIR chapters.

F. Impacts Analysis and Mitigation

As required by CEQA, the potential impacts that may result from implementation of the proposed project were measured against the identified thresholds at the programmatic level. The Section 4.0 chapters discuss short-term and long-term, direct and indirect project impacts. Cumulative and growth-inducing impacts are discussed separately in Section 5.0 (Additional Required CEQA Topics).

Pursuant to CEQA (PRC Sections 21100(b)(3) and 21150), when an impact is analyzed and found to be "Less Than Significant," specific project mitigation is not required. Impacts identified as "Potentially Significant" require all feasible mitigation necessary to avoid, reduce or minimize the impact to a less-than-significant level, if feasible. Where implementation of, or compliance with, an existing federal, state or county regulation or General Plan policy would aid in reducing, minimizing or avoiding an impact, it is noted under "Regulatory Compliance." The same applies to compliance with any measures from EIR No. 441, since they are currently in effect as part of

the Mitigation and Monitoring Program adopted for the 2003 RCIP General Plan as part of EIR No. 441 and are imposed in this EIR, as appropriate.

Where an impact remains significant, despite compliance with applicable statutes, policies and regulations, specific measures are proposed to reduce the impact. Specifically, CEQA requires that the Lead Agency "mitigate or avoid the significant effect on the environment" of the project "whenever it is feasible to do so." Under CEQA (Section 21061.1), "feasible" means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors."

As stated by CEQA (PRC Section 15064(b)), "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An iron clad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area."

G. Significance After Mitigation

Each chapter is concluded with a statement as to whether implementation of the regulatory compliance and mitigation measures associated with the proposed project would reduce the project's impacts to a level that is less than significant. Pursuant to CEQA Section 21081, where a significant impact has been identified in the EIR, the County of Riverside shall not approve or carry out the project unless the County of Riverside makes one or more of the following findings with respect to each significant effect:

1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.

2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

3. Specific economic, legal, social technological or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

In addition, with respect to significant effects that cannot be reduced to less-than-significant levels, the County of Riverside must find that specific overriding economic, legal, social, technological or other benefits of the project outweigh the significant effects on the environment. Pursuant to CEQA Section 21081.5, these findings must be based on substantial evidence in the record.

Section 4.2

Land Use

Section 4.2 Land Use

4.2.1 Introduction

The land use plan of the County of Riverside General Plan in many ways represents the culmination of the Vision and foundational values expressed throughout the document. The land use plan plays a large role in directly influencing the physical reality of Riverside County's future; it guides the ultimate pattern of development in Riverside County. It designates the general distribution, general location and extent of land uses, such as housing, business, industry, open space, agriculture, natural resources, recreation and public/quasi-public uses. The land use policies and maps are intended to capture and communicate Riverside County's long-term desires for the future use and development of its land. Accordingly, this section assesses the potential impacts on land use resources that could result from future development consistent with the changes to the plans and policies of the General Plan as proposed by the proposed project, GPA No. 960.

This section examines how the proposed project, GPA No. 960, would change or affect the existing baseline environmental conditions relative to land use and addresses related environmental effects. A number of the proposed GPA No. 960 land use-related changes are associated with specific, localized areas which can be evaluated spatially. This type of change includes the proposed deletion of specific Rural Village Overlays, the alteration of mapped LUDs for specific parcels and so on.

Other proposed changes, however, are not associated with specific locations. In some cases, project effects can only be assessed on a county-wide basis, such as for the new greenhouse gas reduction policies proposed for the General Plan Air Quality Element, which would apply to all new development and land uses wherever they occurred in unincorporated Riverside County. Others would affect only limited areas, but, as with the proposed incidental rural-commercial use policy, the locations in which the policy would be implemented cannot be foreseen at this time.

4.2.2 Existing Environmental Setting – Land Use

The County of Riverside covers roughly 7,300 square miles (4,670,000 acres), of which roughly 10% consist of incorporated cities. The General Plan is the master planning and policy document governing the unincorporated portions of Riverside County, approximately 6,500 square miles (approximately 4.2 million acres). See Figure 1.1 (Regional Location Map) in Section 1.0 (Summary).

Riverside County is surrounded by the counties of San Diego, Imperial, Orange and San Bernardino to the south, west and north, respectively. To the east, Riverside County abuts the County of La Paz, Arizona, where the Colorado River forms the border between the two states.

A. Jurisdictional Areas in Riverside County

Within Riverside County are 26 incorporated cities. These cities, as listed in Table 4.2-A (Cities Within Riverside County), below, have jurisdiction over their municipalities and are not included in the scope of the Riverside County General Plan, other than for planning and coordination purposes. Since the adoption of the 2003 General Plan, two new cities (Wildomar and Menifee) have been incorporated out of areas previously under Riverside County control. In 2008, the City of Wildomar incorporated in southwestern Riverside County, abutting the existing cities of Lake Elsinore and Canyon Lake. The new city encompasses roughly 8,500 acres that were previously part of Riverside County's Southwestern Area Plan. Also in 2008, the City of Menifee incorporated. This new city spans roughly a 50-square mile area encompassing nearly all of the Riverside County General Plan's existing Sun City/Menifee Area Plan. Together, these two cities encompass roughly 26,700 acres. Although the Sun City/Menifee Area Plan still exists in the Riverside County General Plan, as a result of the change, it now covers only the roughly 4,000 acres that remain under County of Riverside jurisdiction in the isolated pockets of land that were not included in the new city.

Both the existing General Plan and the proposed project's land use data have been updated to reflect the transfer of these two cities from Riverside County land use jurisdiction. The change does not, however, represent a discretionary action on the part of the County of Riverside. It should also be noted that two other new cities, Eastvale and Jurupa Valley, have been formed in the northwestern corner of the county. However, as the incorporation of these cities occurred in October 2010 and July 2011, respectively, well after the April 13, 2009, release of the NOP for this project, their incorporations are not reflected in the proposed project or this EIR. Their inclusion means that impacts to northwestern Riverside County are adequately addressed by this programmatic EIR. Even though they now represent impacts to cities (and are hence not subject to Riverside County jurisdiction), rather than the County of Riverside, such impacts are nevertheless still part of the region's impacts and their inclusion herein simply makes this EIR more conservative in that it may actually *over*estimate impacts to unincorporated Riverside County areas as a result.

Table 4.2-A: Cities Within Riverside County

Western Riverside County		Coachella Valley Region	Far Eastern Riverside County
Banning	Menifee	Cathedral City	Blythe
Beaumont	Moreno Valley	Coachella	
Calimesa	Murrieta	Desert Hot Springs	
Canyon Lake	Norco	Indian Wells	
Corona	Perris	Indio	
Eastvale*	Riverside	La Quinta	
Hemet	San Jacinto	Palm Desert	
Jurupa Valley*	Temecula	Palm Springs	
Lake Elsinore	Wildomar	Rancho Mirage	

* These cities incorporated after April 2009, thus are still included as Riverside County unincorporated areas herein.
Source: Riverside County Center for Demographic Research, Riverside County Progress Report, 2009.

Besides incorporated cities, there are a number of other governmental entities with jurisdictional areas within Riverside County, see Table 4.2-B (Other Jurisdictions with Lands in Riverside County). The federal government owns or controls large swaths of the county, for example, 1.26 million acres of National Forests and Monuments. Tribal lands span roughly 150,500 acres within the county. The Indian Tribes within the US are recognized as self-governing sovereign nations within their own tribal jurisdictions. The State of California also owns and controls nearly 40,000 acres of land within the county, including state parks, University of California campuses and research facilities, and various other uses.

Table 4.2-B: Other Jurisdictions with Lands in Riverside County

Tribes[1,2]	Federal Agencies[1]	State Agencies[1]
Agua Caliente Band of Cahuilla Indians	Army Corps of Engineers	Dept. of Fish and Wildlife
Augustine Band of Mission Indians	Bureau of Land Management	Department of Parks and Rec.
Cabazon Band of Mission Indians	Bureau of Reclamation	Dept. of Transportation
Colorado River Reservation	Department of Energy	Natural Resource Agency
Morongo Band of Mission Indians	Department of Defense	State Lands Commission
Pechanga Band of Luiseno Indians	Federal Highway Administration	University of California
Ramona Band of Mission Indians	Fish and Wildlife Service	
Santa Rosa Band of Mission Indians	National Forest Service	
Soboba Band of Luiseno Indians	National Park Service	
Torres-Martinez Desert Cahuilla Indians		
Twenty-Nine Palms Band of Mission Indians		

Footnotes:
1. This list is intended to illustrate major land holders, rather than be comprehensive or exclusive.
2. Tribal lands of federally-recognized Tribal governments residing within Riverside County.

Source: Riverside County Center for Demographic Research, Riverside County Progress Report, 2009.

B. Existing Use of Land Within Riverside County

Existing development and uses of land within Riverside County is a mosaic of varying types of uses, ownerships, character and intensity. Figure 4.2.3 (Generalized Existing Uses of Land Within Riverside County) identifies generalized existing (2008) land use throughout Riverside County based on raw data provided by SCAG and developed by the Riverside County Center for Demographic Research (RCCDR). This figure defines land uses into seven broad categories (Residential, Commercial, Industrial, Recreation and Open Space, Public Facilities, Vacant and Other), which are further divided in several underlying land use types.

The existing (2008) land use data (Table 4.2-C (Distribution of Existing Uses of Land within Riverside County), below) identifies land uses within Riverside County as a whole, as well as the distribution of land uses between cities and unincorporated areas. As shown in the table, the majority of land within Riverside County is not developed. Vacant and open lands are predominant in the eastern desert areas, particularly the easternmost third of the county. *In eastern Riverside County, the large majority of developed uses are located in the Coachella Valley region of the desert. Western Riverside County, west of the San Jacinto Mountains, contains a significant portion of urban and suburban development.* ~~The large majority of developed uses in eastern Riverside County are located in the Coachella Valley region of the desert. Much of Riverside County's urban and suburban development is also located in western Riverside County, roughly a third of the county located west of the San Jacinto Mountains.~~ Large tracts of federal lands, including National Forests, account for open space areas in southern Riverside County, much of the San Jacinto Mountains and parts of eastern desert as well.

Countywide, the overall built environment, including agricultural lands, encompasses approximately 1,300 square miles (832,000 acres), roughly 18% of the total area of Riverside County. Development is generally concentrated in the cities, with roughly 62% of the cities' territories developed, compared to only 12% of the unincorporated portion of Riverside County. The availability of vacant land also shows a similar trend, with roughly 6% located within cities and the majority, 94% located within the county. Normally cities grow outward as their edges develop and infrastructure becomes available, and typically do not annex large areas of open space or vacant lands.

Table 4.2-C: Distribution of Existing Uses of Land within Riverside County

Land Use Categories		Unincorporated (acres)	Within Cities (acres)	Countywide Total (acres)
Residential	***Subtotal***	***109,604***	***113,810***	***223,410***
Rural Residential		15,003	8,126	23,129
Single Family Residential		59,261	91,844	151,106
Multiple Family Residential		4,511	9,497	14,008
Mobile Homes		30,829	4,343	35,172
Commercial	***Subtotal***	***27,191***	***31,812***	***59,003***
Retail / Office		13,814	29,841	43,655
Tourist / Commercial Recreation		13,377	1,971	15,348
Industrial	***Subtotal***	***32,769***	***12,974***	***45,743***
Light Industry / Business Park		15,379	7,938	23,317
Heavy Industrial		1,831	2,624	4,455
Mineral Extraction		11,253	1,661	12,914
Warehouse		4,306	751	5,057
Recreation and Open Space	***Subtotal***	***988,740***	***92,036***	***1,080,776***
Natural		3,517	963	4,480
Natural (Reserve)		693,874	3,935	697,810
Recreation		4,769	22,136	26,904
Agriculture		226,934	58,597	285,531
Water		59,646	6,405	66,051
Public Facilities	***Subtotal***	***86,715***	***86,263***	***172,978***
Utilities		76,190	72,274	148,464
Other Public Facilities		3,660	6,088	9,748
Schools		6,866	7,900	14,766
Vacant	***Subtotal***	***2,874,402***	***194,301***	***3,068,703***
Other	***Subtotal***	***6,815***	***12,173***	***18,989***
	GRAND TOTAL	**4,126,237**	**543,370**	**4,669,600**

Source: SCAG, 2008. Riverside County Center for Demographic Research, 2010.

All together a total of nearly 350 square miles (223,000 acres) of land is currently developed with residential uses in Riverside County, split nearly evenly between the County of Riverside and its incorporated cities. Commercial land uses account for 59,000 acres within the county. The majority is located within the western Riverside and Coachella Valley regions; clustered near major transportation routes, such as Interstates 15 and 215 and State Routes 91, 60, 74 and 111. A total of roughly 46,000 acres countywide are devoted to industrial uses, including heavy industry, warehousing and mineral extraction, as well as business parks. Unlike most of the other built uses, approximately 72% of industrial uses are located in unincorporated areas. Owing to Riverside County's collection of physical, biological and historical resources, a vast amount of land (1,081,000 acres, 23% of the county total) is in open space use and provides for recreation, agriculture, scientific opportunity and wild land preservation. This total also includes the hundreds of thousands of acres of National Forests, State Parks and other passive recreation areas outside of County of Riverside jurisdiction. Another 3.7% (173,000 acres) of the county is devoted to various public facilities, including landfills, military bases, public airports, schools and others.

C. Planned Land Use Under the Existing Riverside County General Plan

With the 2003 adoption of the completely revised RCIP General Plan, the County of Riverside planned for future growth in Riverside County by designating some existing vacant lands for future development to accommodate future demand in a manner compatible with existing patterns. Subsequent to its adoption, the RCIP General Plan has incorporated 22 General Plan Amendments; those GPAs adopted through approximately the first half of 2009 (i.e., prior to NOP issuance). Most of the changes were focused on site-specific Land Use Designation changes, mainly associated with new or revised Specific Plans. As part of the baseline for this update, Table 4.2-

D (Existing General Plan Mapped Land Uses (Countywide)) shows the land use planned under the existing General Plan.

1. Land Use Designations

Because of the size of Riverside County, most of the General Plan's land use designations are mapped within a series of 19 Area Plans. These Area Plans reflect locality-specific plans by which the countywide policies in the main body of the General Plan are implemented, with customizations where appropriate for the unique needs of each community. It is at the Area Plan level that the General Plan plans for future land development and utilization through the application of Land Use Designations (LUDs) tied spatially to the land covered by the Area Plan. LUDs and the General Plan Foundations in which they are categorized dictate the general types of land uses, densities and intensities that could be allowed. (It should be noted that LUDs are *not* synonymous with zoning; zoning is assigned via Riverside County ordinance, not the General Plan. Also, LUDs do not necessarily reflect the existing (actual) use of land. Rather, LUDs indicate the anticipated (future) development patterns and uses planned for within unincorporated Riverside County. Also, it should be remembered that none of the Riverside County General Plan applies to incorporated cities, sovereign tribal lands, or other non-County of Riverside jurisdictions.) As shown in Figure 4.2.2 (Cities Within Riverside County) and Figure 4.2.3 (Generalized Existing Uses of Land Within Riverside County), every part of Riverside County falls within one of these plans, except for the far easternmost portion of the county, which is covered directly in the Land Use Element of the General Plan. Full summaries of existing General Plan LUDs and the LUDs proposed under GPA No. 960, as well as the associated statistical summaries, are compiled by Area Plan in Appendix EIR-2.

Table 4.2-D: Existing General Plan Mapped Land Uses (Countywide)

LAND USE DESIGNATION		EXISTING GENERAL PLAN * (Acres**)
Agriculture Foundation	***Subtotal***	***189,730***
Agriculture (AG)		189,730
Open Space Foundation	***Subtotal***	**3,282,700**
Open Space - Conservation (OS-C)		53,700
Open Space - Conservation Habitat (OS-CH)		1,203,500
Open Space – Water (OS-W)		74,100
Open Space – Recreation (OS-R)		13,940
Open Space – Rural (OS-RUR)		1,929,900
Mineral Resources (OS-M or MR)		7,550
Rural Foundation	***Subtotal***	**293,400**
Rural Residential (RR)		130,490
Rural Mountainous (RM)		140,930
Rural Desert (RD)		21,990
Rural Community Foundation	***Subtotal***	**66,980**
Estate Density Residential (EDR-RC)		31,070
Very Low Density Residential (VLDR-RC)		22,160
Low Density Residential (LDR-RC)		13,750
Community Development Foundation	***Subtotal***	**177,680**
Estate Density Residential (EDR)		3,400
Very Low Density Residential (VLDR)		19,560
Low Density Residential (LDR)		9,290
Medium Density Residential (MDR)		57,590
Medium-High Density Residential (MHDR)		14,040
High Density Residential (HDR)		4,030
Very High Density Residential (VHDR)		1,330
Highest Density Residential (HHDR)		220

LAND USE DESIGNATION		EXISTING GENERAL PLAN * (Acres**)
Commercial – Retail (CR)		4,830
Commercial – Tourist (CT)		2,630
Commercial – Office (CO)		490
Community Center (CC) and Mixed Use (MUPA)		1,200
Light Industrial (LI)		21,520
Heavy Industrial (HI)		1,700
Business Park (BP)		5,290
Public Facilities (PF)		30,550
Unincorporated Riverside County	***Subtotal***	**4,010,490 acres**
Non-County of Riverside Jurisdictional Areas	***Subtotal***	**658,110**
Incorporated Cities (CITY)		542,840
Tribal Lands (TRIBE)		103,780
Freeways (FWY)		7,060
March Air Reserve Base (MARCH)		4,440
	GRAND TOTAL	**4,668,600 acres**

* Existing General Plan includes all GPAs adopted through the end of 2009.
** Values rounded to nearest 10 acres and therefore may not sum precisely.
*** *The Southwest Area Plan was amended in 2014 by GPA 1077, which changed General Plan Land Use Designations; however GPA 1077 was completed as a separate project and thus impacts are not included in the analysis contained within this section. Refer to GPA 1077: Wine Country Community Plan and the Wine Country Community Plan Environmental Impact Report for further information on the impacts related to the project. Refer to GPA No. 960 Appendix Q for Wine Country Community Plan.*
Source: Riverside County Planning Department, Project Data, 2010.

~~Every part of Riverside County falls within one of these plans, except for the far easternmost portion of the county, which is covered directly in the Land Use Element of the General Plan. Full summaries of existing General Plan LUDs and the LUDs proposed under GPA No. 960, as well as the associated statistical summaries, are compiled by Area Plan in Appendix EIR-2.~~

The Riverside County General Plan provides land use designations for a total of approximately 4,010,500 acres (nearly 6,300 square miles) of unincorporated Riverside. Of these, nearly 82% are designated open space, while roughly 6% are designated for future urban and suburban development. Also, about 5% of Riverside County is designated agriculture, while rural and rural to urban transition areas (i.e., rural community), account for 9% of the total. Even with the significant growth of Riverside County in recent years, these LUD patterns indicate how most of Riverside County is still anticipated to remain undeveloped in near future, aside from certain pockets of targeted growth.

Data Source: Riverside County (2010)

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Highways

Waterbodies

Figure 4.2.1

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PHYSICAL FEATURES

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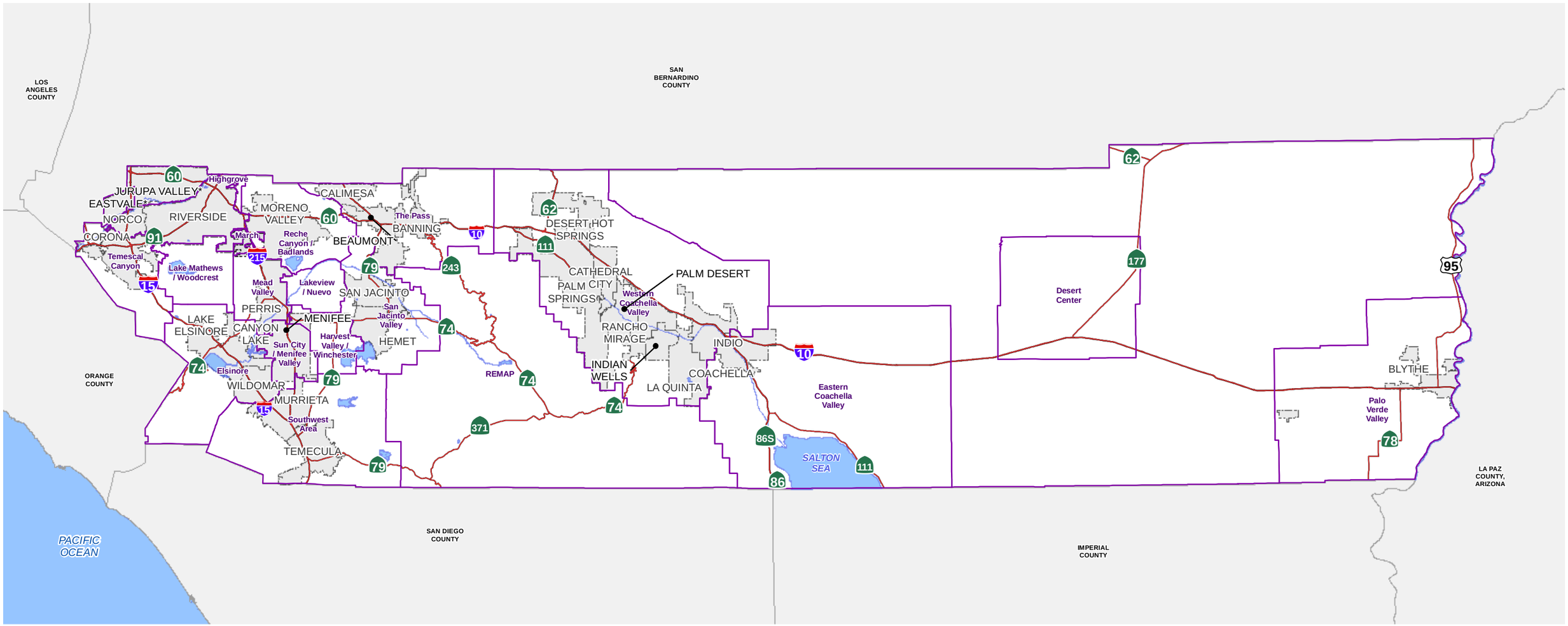

Data Source: Riverside County (2010)

Highways

Area Plan Boundary

City Boundary

Waterbodies

*** Incorporated after NOP issuance.**

Figure 4.2.2

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CITIES IN RIVERSIDE COUNTY

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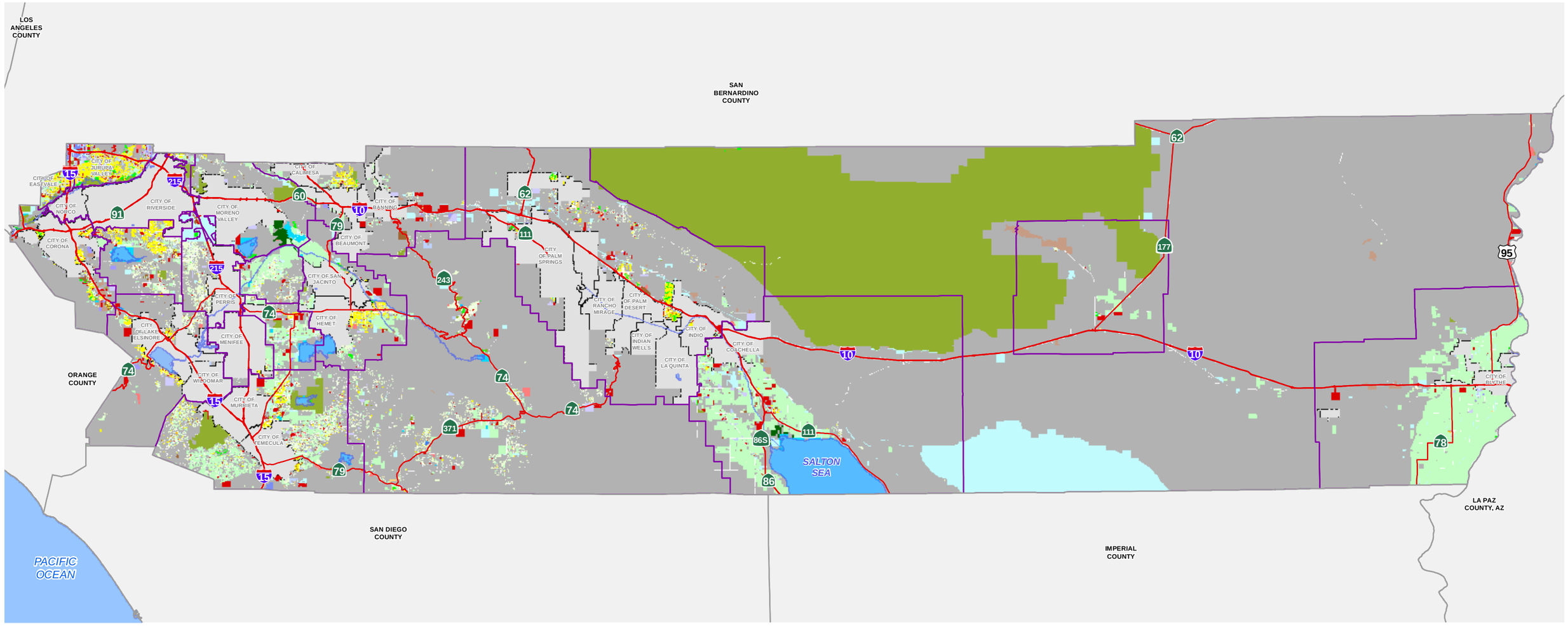

Data Source: Riverside County (2010)

- Agriculture
- Heavy Industrial
- Light Industrial and Business Park
- Mineral Extraction
- Mixed Residential
- Mobile Homes
- Multiple Family Residential
- Natural (Reserve)
- Natural (USFS)
- Other
- Other Public Facilities
- Other Residential
- Recreation
- Retail and Office
- Rural Residential
- Schools
- Single Family Residential
- Tourist and Commercial
- Utilities
- Vacant
- Warehouse
- Water
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.2.3

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RIVERSIDE COUNTY PLANNING DEPARTMENT

EXISTING USES OF LAND

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Data Source: Riverside County Planning (2009)

- Agriculture
- Rural
- Rural Community
- Open Space
- Community Development
- Tribal Lands
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.2.4

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

EXISTING GENERAL PLAN LAND USE FOUNDATIONS

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2. Specific Plans within the General Plan

A specific plan is a combined policy statement and implementation tool that is used to implement the General Plan and customized policies within a single project, such as infill development, larger multiple-use projects or a related series of projects. The specific plan serves to emphasize concrete standards and development criteria used for subsequent site plans. Since the development guidelines in a specific plan focus on the unique needs and characteristics of a specific area or community, specific plans allow for greater flexibility than is possible through conventional general plan land use designations and zoning alone.

As shown in Figure 4.2.5 (Adopted Specific Plans Within Riverside County), there are over 70 approved specific plans located throughout unincorporated Riverside County. These plans range in size from small, such as 25 acres for a commercial center, to very large, such as Specific Plan No. 327, Toscana (covering nearly 1,000 acres). Some Riverside County specific plans have subsequently been absorbed into cities through annexation. Table 4.2-E (Adopted Specific Plan Developments) provides a summary of Riverside County's specific plans.

As of 2009, specific plans encompassed nearly 65,500 acres (or 1.4%) of unincorporated Riverside County, primarily in the western and southwestern portions of the county. In total, approved specific plans within Riverside County are calculated to encompass approximately 92,000 planned housing units, approximately 37% (34,000 units) of which have been built through 2009.

Table 4.2-E: Adopted Specific Plan Developments

Specific Plan Number	Specific Plan Name	Specific Plan Number	Specific Plan Name
100	"A" Street Corridor	250	Gateway Center
102	Highland Springs	251	Lakeview Nuevo Village
106	Dutch Village	256	Sycamore Creek
107	Mission Lakes *	260	Menifee North *
113	Frank Domeno	264	Arbor Creek Estates
114	Tract No. 4437	265	Borel Airport Park *
123	Mission De Anza	266	I-15 Corridor
124	Red Mountain	270	Victoria Grove
125	Ramona Ranchos	281	Del Webb's Sun City
127	Republic	284	Quinta Dos Lagos
130	El Nido	286	Winchester 1800
134	Sky Mesa	288	The Crossroads in Winchester
136	River City	293	Winchester Hills
144	Lake Hills	300	Eastvale
152	Horsethief Canyon	303	Kohl Ranch
167	Green River Meadows *	305	Eagle Mountain Landfill
170	Tesoro	306	Eagle Mountain Townsite
175	Riverview Ranch	307	Johnson Ranch
176	Wildrose	308	Gavilan Hills Golf Course
182	Four Seasons	310	Domenigoni/Barton Properties
183	Rancho Nuevo	312	French Valley
184	Rancho Bella Vista	313	Morgan Hill
198	Belle Meadows	317	The Retreat
210	Agua Mansa	322	BSA Properties
211	Andreas Cove	323	Spring Mountain Ranches
212	Mesa Grande	325	Lake Mathews Golf & CC
213	Winchester Properties	327	Toscana
221	Mountain Springs (Trilogy)	330	Springbrook Estates
224	Woodcrest Country Club	331	Enclave
229	Boulder Springs	333	Renaissance Ranch

Specific Plan Number	Specific Plan Name	Specific Plan Number	Specific Plan Name
231	Adams 34 Ranch *	335	The Resort
238	Crown Valley Village	336	Desert Dunes
239	Stoneridge	337	Emerald Meadows
243	Rio Vista	341	Majestic Freeway Business Center
246	McCanna Hills	343	Northstar
Grand Total: 70 Specific Plans			

* Denotes Specific Plans that have been partially annexed into various cities within Riverside County over the years.
Source: Riverside County GIS RCLIS Data, 2009

3. Public Airports and Airport Land Use Plans

There are a total of 14 public airports located within or affecting Riverside County territory. Their locations are shown in Figure 4.2.6 (Public Airport Locations in Riverside County). These airports can be grouped into three categories:

a. Public Use General Aviation Airports Within Unincorporated Areas

Flabob Airport: Affects portions of the Jurupa Area Plan. (Now located within the newly incorporated City of Jurupa Valley, but treated as unincorporated since the City of Jurupa Valley's incorporation occurred after the April 2009 NOP issue date for this EIR.)

French Valley Airport: Affects portions of the Southwest Area Plan.

Hemet-Ryan Airport: Affects portions of the Southwest and Harvest Valley/Winchester Area Plans.

Bermuda Dunes Airport: Affects portions of the Western Coachella Valley Area Plan.

Jacqueline Cochran Regional Airport: Affects portions of the Eastern Coachella Valley Area Plan.

Chiriaco Summit Airport: This small facility affects portions of Eastern Coachella Valley Area Plan.

Blythe Airport: Affects portions of the Palo Verde Valley Area Plan. (Located outside City of Blythe.)

b. Public Use General Aviation Airports Located in Cities

These public, general aviation airports are located within cities, but also affect a portion of unincorporated Riverside County.

Corona Municipal Airport: Located in Corona; affects portions of the Temescal Canyon Area Plan.

Chino Airport: Located in Chino, San Bernardino County; affects portions of the Eastvale Area Plan.

Riverside Municipal Airport: Located in the City of Riverside; affects portions of the Eastvale and Jurupa Area Plans.

Perris Valley Airport: Located in Perris; does not affect any of unincorporated Riverside County.

Palm Springs International Airport: Located in Palm Springs; affects portions of the Western Coachella Valley Area Plan.

Banning Municipal Airport: Located in Banning; affects portions of (San Gorgonio) Pass Area Plan.

c. Military Facilities

March Air Reserve Base (MARB): *The March Air Force Base was established in 1918 and has operated almost continually since. In 1993, March Air Force Base transformed from an operational Air Force Base to an Active Duty Reserve Base, effective in 1996. Shortly afterward, the Air Force and March Joint Powers Authority (JPA) formally signed a "Joint Use Agreement," for the shared use of the airfield facilities. The JPA is comprised of the County, and the Cities of Moreno Valley, Perris, and Riverside. The March JPA regulates, manages and operates the March Inland Port, targeted for air cargo operations. Thus, March Air Reserve Base (MARB) now accommodates both military aircraft and civilian aircraft. The County of Riverside Airport Land Use Commission administers a comprehensive land use plan (CLUP) for operation of the aviation field, to ensure that land uses in and around the airport are compatible.*

MARB affects ~~a large swath of~~ western Riverside County, including portions of the Harvest Valley/Winchester, Highgrove, Lake Mathews/Woodcrest, Mead Valley, Lakeview/Nuevo and Reche Canyon/Badlands Area Plans. *MARB is located* on federal land amid the cities of Moreno Valley, Perris and Riverside. ~~MARB accommodates both military aircraft and civilian aircraft.~~ Most of the military flights at MARB are route-type flights by fixed wing aircraft.

Chocolate Mountain Aerial Gunnery Range (CMAGR): This naval training facility spans 460,000 acres of Riverside and Imperial counties east of the Salton Sea. Roughly 108,000 acres of the site's BLM and U.S. Department of Defense lands are within the county, mostly falling in the Eastern Coachella Valley Area Plan, with lesser amounts within the Far Eastern Desert area not covered under a stand-alone Area Plan. The CMAGR is actively used for military training exercises involving ground troops and, in particular, military aircraft. Both rotary wing and fixed wing aircraft frequent the site, including jets traveling occasionally at supersonic speeds. The CMAGR averages over 300 days of use annually, including 6,000-7,000 training sorties annually for fixed wing aircraft (one sortie represents one flight by one aircraft from takeoff to landing, but may include any number of bombing, strafing or other training runs). Sorties per day tend to average between five and roughly 20 for most CMAGR airspace areas. See Section 4.15 (Noise) for additional information on the CMAGR.

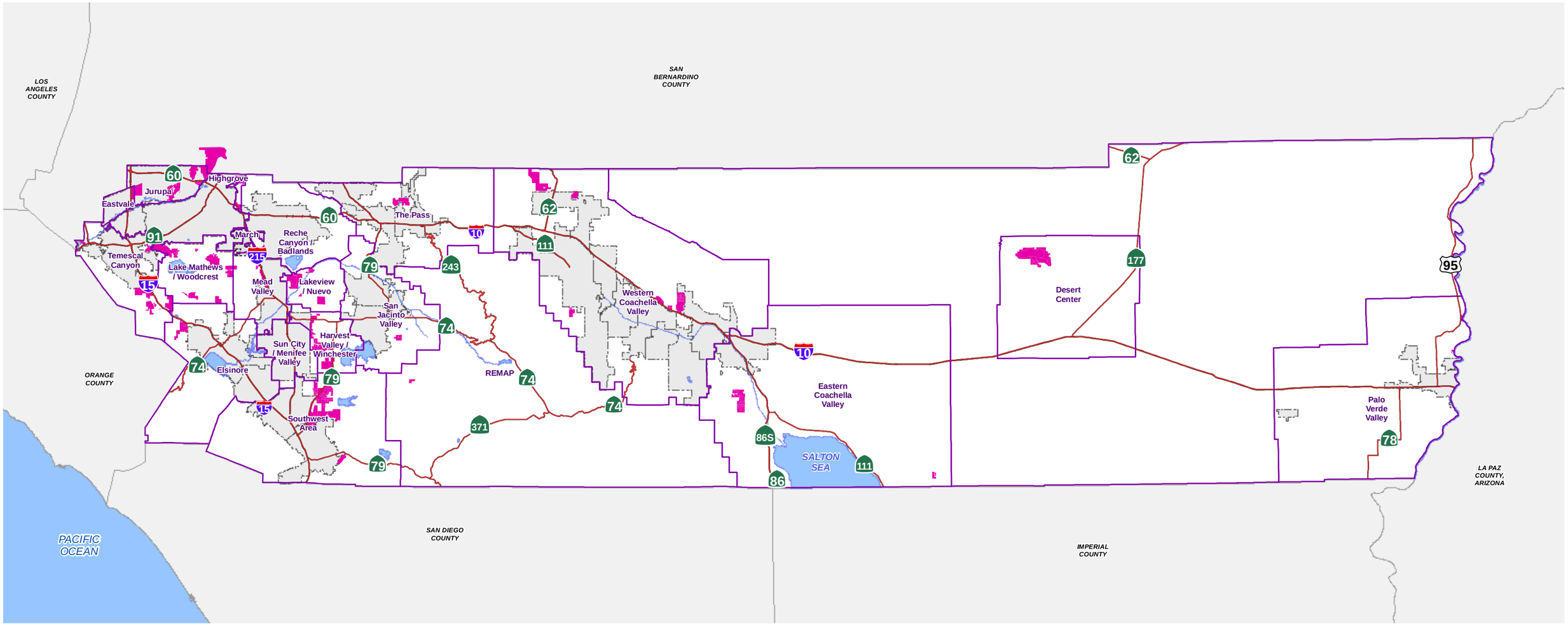
Table 4.2-F: Air Facilities In and Around Riverside County

Air Facility	Location (City)[1]	Date of Adopted Compatibility Plan
Larger Public Airports		
~~March Global Port March Inland Airport / Joint Air Reserve Base (Joint Use)~~ *March Air Reserve Base/March Inland Airport (Joint Use)*	Moreno Valley	May 29, 1986
Palm Springs International	Palm Springs	March 10, 2005
LA / Ontario International [2]	Ontario, San Bernardino County	NA
Smaller Public Use Airports		
Banning Municipal	Banning	October 14, 2004
Bermuda Dunes	Bermuda Dunes (Riv. Co.)	December 9, 2004
Blythe	Blythe	October 14, 2004
Chino [2]	Chino	March 20, 2000
Chiriaco Summit	Chiriaco Summit (Riv. Co.)	October 14, 2004
Jackie Cochran (formerly Desert Resorts Regional)	Thermal (Riv. Co.)	June 9, 2005
Corona Municipal	Corona	October 14, 2004
Flabob [3]	Jurupa Valley	December 9, 2004
French Valley Airport	Murrieta/Temecula	December 9, 2004

Air Facility	Location (City)[1]	Date of Adopted Compatibility Plan
Hemet-Ryan	Hemet	March 18, 1992
Perris Valley	Perris	October 23, 1975
Riverside Municipal [3]	Riverside	March 10, 2005
Private Air Facilities (No Public Use)		
Lake Riverside Estates	Anza	NA
AHA-Quin	Blythe (Colorado River Tribes)	NA
Blythe Service Center, Southern California Edison Company	Blythe	NA
Clayton	Blythe	NA
CYR Aviation	Blythe	NA
W R Byron	Blythe	NA
SCE Palm Springs District, Southern California Edison Co.	Cathedral City	NA
Chapin Medical Pad	Corona	NA
Corona Regional Medical Center	Corona	NA
Desert Center	Desert Center (Riv. Co.)	October 14, 2004
Julian Hinds Pump Airstrip, Metro. Water Dist. of So. Cal.	Desert Center (Riv. Co.)	NA
Devers Substation, Southern California Edison Company	Desert Center (Riv. Co.)	NA
Landells	Desert Hot Springs	NA
Ernst Field	Hemet	NA
Hemet Valley Hospital Helistop	Hemet	NA
John F Kennedy Memorial Hospital	Indio	NA
Skylark	Lake Elsinore	NA
University Medical Center	Moreno Valley	NA
Tenaja Valley	Murrieta	NA
Desert Air Sky Ranch	North Shore, Salton Sea (Riv Co.)	NA
Desert Regional Medical Center	Palm Springs	NA
Castle	Perris	NA
Eisenhower Medical Center	Rancho Mirage	NA
Riverside Community Hospital	Riverside	NA
Johnson	Riverside	NA
Lake Mathews, Metropolitan Water District of So. California	Riverside	NA
Riverside Metro Center	Riverside	NA
Southern California Edison San Jacinto Valley Service Center	Romoland	NA
Billy Joe	Temecula	NA
Wolf Ranch	Temecula	NA
Inland Valley Regional Medical Center	Wildomar	NA
Pines Airpark	Winchester	NA
Military Air Facilities		
Chocolate Mountain Aerial Gunnery Range[4]	East of Salton Sea (Riv. Co.)	NA
March Joint Air Reserve Base / Global Port (Joint Use)	Moreno Valley	May 29, 1986

Footnotes:
1. Closest city or community to the air facility location. Public facilities in unincorporated areas noted with "Riv. Co."
2. Facility located outside of Riverside County, although affected airspace does occur within Riverside County.
3. Due to incorporation, airport now located within a municipality and does not affect unincorporated Riverside County.
4. Aerial bombing range with restricted military airspace; not an airport per se.

Source: Riverside County, Riverside County Airport Land Use Compatibility Plan, October 14, 2004, as amended.



Data Source: Riverside County Planning (2010)

Specific Plans

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.2.5

December 16, 2013

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ACIT GEOGRAPHIC INFORMATION SERVICES

RIVERSIDE COUNTY PLANNING DEPARTMENT

BOARD OF SUPERVISORS Riverside County, California

SPECIFIC PLANS WITHIN RIVERSIDE COUNTY

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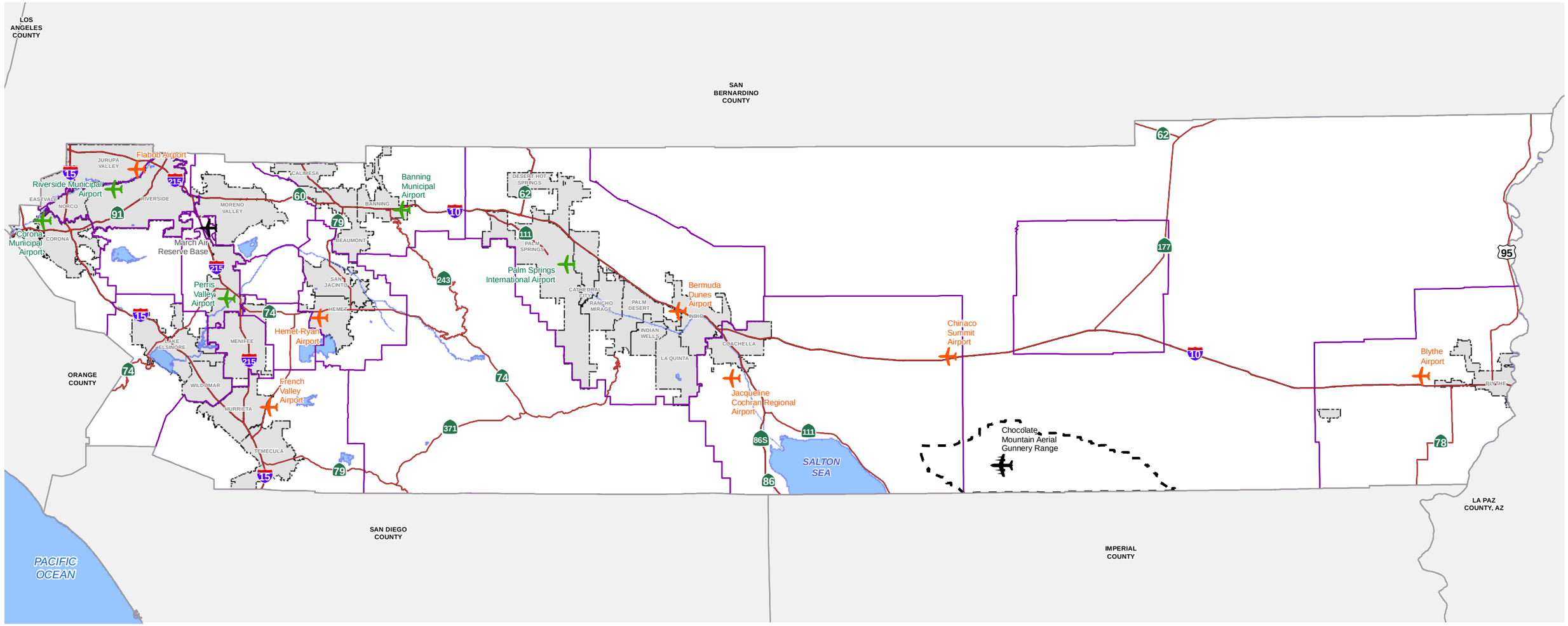

Data Source: Riverside County ALUC (2011)

- Public Use General Aviation Airport (Unincorporated Area)
- Public Use General Aviation Airport (Within Cities)
- Military/Civilian Facility
- Military Facility
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.2.6

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

AIRPORT LOCATIONS

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d. Airport Land Use Compatibility Plans and Airport Influence Areas

Airports in Riverside County provide an important travel function for passengers, as well as benefit the regional economy ~~for passengers as well as benefit and regional economies.~~ Future population growth in Riverside County would create additional demand for air transportation. At the same time, growth and urbanization can ~~also~~ threaten existing *and* ~~as well as~~ future airports by introducing incompatible land uses, people and property into airport~~s'~~ vicinities. To protect airports' future expansion needs from encroaching incompatible land uses, and to ensure the public is protected from excessive noise and air-related safety hazards, the State Aeronautics Act (Public Utilities Code Section 21670 *et seq.*) calls for the adoption of airport land use compatibility plans by the Riverside County Airport Land Use Commission (ALUC). *This will* ~~to~~ ensure that existing and future land uses planned around public use airports are compatible and safe~~ty~~.

As defined by the Riverside County Airport Land Use Commission, all of the public airports listed in Table 4.2-F (Air Facilities In and Around Riverside County), except Palm Springs International and Perris Valley, have influence areas that affect lands within unincorporated areas of Riverside County. These *influence areas* are mapped in the Riverside County General Plan. For more details, refer to the appropriate Area Plan's Airport Influence Area section for the airport in question.

Since 2004, the Riverside County ALUC has adopted new airport land use compatibility plans for all but three of the fourteen airports addressed in the General Plan (see Table 4.2-F). March Air Reserve Base/*March Inland Airport*, Hemet-Ryan *Airport* and Perris Valley Airport~~s~~ *use airport land use compatibility plans adopted before 2004* ~~do not yet have completed land use compatibility plans~~. *As required by state law, an airport land use compatibility plan has been adopted for all public use and military airports in the county. Preparation of compatibility plans for private use airports is at the discretion of the ALUC.* ~~either this plan or an earlier one has been adopted for all of the public use and military airports in the county, while preparation of compatibility plans for private use airports is at the option of ALUC.~~ Private air facilities are also included in the table; they are not required to have ACLUPs, but still must conform to FAA requirements regarding airspace and airport operations. The location of the public-serving airport facilities in the county are shown in Figure 4.2.6 (Public Airport Locations in Riverside County).

As developable land becomes increasingly scarce, growth pressures may lead to the encroachment of urban development adjacent to airports. Such encroachment can result in conflicts between the new uses and the goals and policies outlined in local airport's Airport Land Use Plan. Hence, one of the functions of Riverside County's General Plan is to ensure consistency with the purposes of the airport land use laws and ALUC compatibility plans via the land use plans and policies of the General Plan. Under the existing General Plan, future development has the potential to encroach on lands adjacent to public airports. The policies and land use designation changes proposed in GPA No. 960 would serve to improve coordination and compatibility between airport land use plans and the surrounding land uses.

The Public Resources Code (PRC) creates a connection between the Airport Land Use Planning Handbook (ALUPH) and CEQA documents, such as this EIR. Specifically, PRC Section 21096 requires that lead agencies must use it as "a technical resource" when assessing airport-related noise and safety impacts of projects located in the vicinity of airports. The most recent edition of the ALUPH was completed in January 2002 and is available from the Caltrans Division of Aeronautics website at (www.dot.ca.gov/hq/planning/aeronaut). Airport master plans primarily deal with onsite airport activities while an ACLUP mainly deals with offsite airport land use compatibility issues.

CPUC Section 21675(a) requires that ALUC plans be based on a long-range airport master plan. If such a plan does not exist for a particular airport, an airport layout plan may be used, subject to approval by the California Division of Aeronautics. Thus, the ACLUP for each airport within an ALUC's the jurisdiction is based on the

respective airport master plan or, as allowed by the statutes, a State-approved airport layout plan. State law also requires each local agency having jurisdiction over land uses within an ALUC planning area to modify its general plan and any affected specific plans to be consistent with the ACLUP. A local agency may only overrule ALUC by a two-thirds vote of its governing body after making findings that the agency's plans are consistent with the intent of State of California airport land use planning statutes. Additionally, the local agency must notify both ALUC and the California Division of Aeronautics at least 45 days in advance of its decision to overrule and must hold a public hearing on the proposed overruling (CPUC Section 21676(a) and (b)).

A general plan does not need to be identical with an ACLUP in order to be consistent with it. To meet the consistency test, a general plan must specifically address compatibility planning issues *(*either directly or through reference to a zoning ordinance or other policy document*),* and it must avoid direct conflicts with compatibility planning criteria. In general, GPA No. 960 includes LUD updates where necessary to ensure consistency with ACLUPs. However, in three cases this step is not included in GPA No. 960. Current General Plan LUDs reflecting an existing built community differ from the most recent ACLUP for the Bermuda Dunes Airport. Similar issues with the existing General Plan occur for the French Valley and Jackie Cochran airports due to prior approved specific plans.

Due to the processing complexities involved in resolving such issues, associated LUD changes for these areas are not proposed as part of GPA No. 960. Rather, GPA No. 960 does not change either the existing baseline conditions for these three ALUP areas, nor propose any future development changes. Further, the General Plan includes policies (LU 15.2-15.6) requiring land use proposals be consistent with both plans prior to application approval. Thus, for any proposed projects within the three unaddressed ACLUP areas, ALUC consistency reviews and findings (or Board of Supervisors overruling findings) are required*. This* ~~and~~ would address ~~these~~ compatibility issues at the level of individual future development proposals, should they occur (independent of GPA No. 960).

4.2.3 Policies and Regulations Addressing Land Use

A. State Regulations

1. California Planning and Zoning Law

The legal framework in which California cities and counties exercise local planning and land use functions is set forth in the California Planning and Zoning Law, Sections 65000 - 66499.58. Under State of California planning law, each city and county must adopt a comprehensive, long-term general plan. State law gives cities and counties wide latitude in how a jurisdiction may create a general plan, but there are fundamental requirements that must be met. These requirements include the inclusion of seven mandatory elements described in the Government Code, including a section on land use. Each of the elements must contain text and descriptions setting forth objectives, principles, standards, policies and plan proposals; diagrams and maps that incorporate data and analysis; and mitigation measures.

2. Subdivision Map Act

This Act (CGC Section 66410, et seq.) establishes statewide uniformity in local subdivision procedures, while giving the cities and counties the authority to regulate the design and improvement of subdivisions, require dedications of public improvements or related impacts fees and require compliance with the objectives and

policies of the general plan. This includes the authority to approve and design street alignments, grades and widths, drainage and sanitary facilities, lot size and configuration, traffic access and other measures, "as may be necessary or convenient to insure consistency with, or implementation of, the general plan or any applicable specific plan" (CGC Sections 66418 and 66419). Accordingly, these regulatory powers are the basis by which the County of Riverside promotes and implements the various policies and procedures outline in Riverside County's General Plan.

3. California Office of Planning and Research (OPR) General Plan Guidelines

To assist local governments in meeting general plan requirements, the OPR is required to adopt and periodically revise guidelines for the preparation and content of general plans (Government Code Section 65040.2). These are advisory guidelines, not mandated requirements, and serve as a reference tool for cities and counties in the preparation of local general plans. The guidelines include information on the required contents of a general plan, sustainable development and environmental justice, formatting, public participation and implementation.

4. State Aeronautics Act

This Act (Public Utilities Code [PUC] Section 21001 et seq.) requires that Airport Land Use Commission prepare airport land use compatibility plans (ALUCPs). ALUCPs promote compatibility between airports and the land uses that surround them to the extent that these uses are not already developed with incompatible land uses. They are intended to protect the safety of people, property and aircraft on the ground and in the air in the vicinity of the airport. They also address measures to ensure noise protection through land use planning and other measures.

B. Riverside County Regulations

1. Riverside County Ordinances

These existing Riverside County ordinances implement and guide various aspects of land use development, while protecting existing uses, people and property within Riverside County from conflict.

Ordinance No. 348 - Zoning and Land Use Ordinance: Establishes allowable uses of land and sets standards for what and how land may be developed. Protects the people and property of Riverside County from development of unsuitable land uses and ensures built areas are developed safely and with minimal conflict with surrounding lands.

Ordinance No. 448 - Airport Approaches Zoning: This ordinance was adopted pursuant to the Airport Approaches Zoning Law, (CGC Sections 50485-50485.14) and shall be liberally construed in support of the purposes and provisions within Section 50485-50485.14. Any proceedings for additions or amendments to the official plan of airports are required to conform to this ordinance.

Ordinance No. 460 - Subdivision Regulations: This ordinance regulates subdivisions pursuant to the Subdivision Map Act. All land divisions throughout unincorporated Riverside County are subject to all of the applicable provisions of the Subdivision Map Act and this ordinance.

Ordinance No. 461 - Road Improvement Standards and Specifications: This ordinance establishes proper standards, specifications and directions for the design and construction of any road or other land division improvements required to be constructed in the unincorporated territory of Riverside County.

Ordinance No. 509 - Agricultural Preserves: This ordinance establishes uniform rules for the agricultural and compatible uses allowed within an agricultural preserve. The ordinance ensures that incompatible uses are not allowed within established agricultural preserves and sets forth the powers of the County of Riverside in establishing and administering agricultural preserves pursuant to the California Land Conservation Act of 1965 (CGC Section 51200, et seq.), which are to be devoted to agricultural and compatible uses. Land uses not covered in the ordinance are prohibited within agricultural preserves.

Ordinance No. 576 - Regulating County Airports: The purpose of this ordinance is to provide minimum standards to safeguard life, limb, property and public welfare by regulating and controlling the various activities on airports, heliports or STOL (short takeoff and landing) ports owned or operated, or both, by the County of Riverside.

Ordinance No. 659 - Development Mitigation Fee for Residential Development: This ordinance establishes an impact mitigation fee to help mitigate the impacts caused by new developments on public facilities within Riverside County. The fees will be used to help establish new County of Riverside facilities that are necessary to meet the increased demand that will come about due to new development. These facilities include new fire and police stations, courts, libraries, regional parks and other facilities necessary to provide services to the residents of Riverside County.

Ordinance No. 671 - Consolidated Fees for Land Use and Related Functions: The purpose of this ordinance is to provide for the consolidation of certain schedules of fees related to the land use matters as provided for in the separate ordinances, resolutions and rules of the County of Riverside.

Ordinance No. 673 - Establishing the Coachella Valley Transportation Uniform Mitigation Fee: This ordinance establishes a mitigation fee program for funding the engineering, the purchase of right-of-way and construction of transportation improvements required of land developments within the Coachella Valley.

Ordinance No. 726 - Transportation Management Requirements - New Development Projects: This ordinance is intended to meet the requirements of the Riverside County Congestion Management Program and the Air Quality Management Plan as well as to promote consideration of transportation demand management objectives early in the development review process. Often, conventional land development promotes reliance on the single occupancy vehicle. This ordinance establishes policies and procedures to encourage and promote the use of alternative transportation modes through project design and facility planning.

Ordinance No. 748 - Traffic Signal Mitigation Program: This ordinance establishes a means of equitably assessing the costs of Traffic Signal installations needed to mitigate the cumulative environmental impacts resulting from the additional traffic generated by new development projects.

Ordinance No. 824 - Western Riverside County Transportation Uniform Mitigation Fee (TUMF) Program: This ordinance establishes fees to fund the mitigation of cumulative regional transportation impacts resulting from future development. The mitigation fees collected through the TUMF program will be utilized to complete transportation system capital improvements necessary to meet the increased travel demand and to sustain current levels of traffic.

Ordinance No. 875 - Establishing a Local Development Mitigation Fee for Funding the Preservation of Natural Ecosystem Accordance with the Coachella Valley Multiple Species Habitat Conservation Plan: This ordinance is to establish a Local Development Mitigation Fee to aid in maintaining biological diversity and their supporting natural ecosystem processes; the protection of vegetation communities and natural areas within the county, Coachella Valley and surrounding mountains located in central Riverside County which are known to support threatened, endangered or key sensitive populations of plant and wildlife species; the maintenance of economic development within the unincorporated area of Riverside County by providing a streamlined regulatory process from which development can proceed in an orderly process; and the protection of the existing character of Riverside County and the region through the implementation of a system of reserves to provide permanent open space, community edges and habitat conservation for species covered by the MSHCP.

2. Multiple Species Habitat Conservation Plans (MSHCPs)

A Multiple Species Habitat Conservation Plan (MSHCP) is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in Riverside County. Several such plans affect lands within Riverside County. The two preeminent plans affecting the largest portions of the county are the Western Riverside County MSHCP and the Coachella Valley MSHCP. Each of these plans coordinates multi-jurisdictional habitat-planning and conservation efforts in Southern California with the overall goal of maintaining biological and ecological diversity while accommodating appropriate development and infrastructure needs. The MSHCPs allow Riverside County and participating cities to maintain a strong economic climate in the region while addressing the requirements of the state and federal Endangered Species Acts. Towards these ends, Riverside County maintains and tracks all of the acquisitions and conservation of lands and periodically updates the General Plan Land Use maps accordingly.

C. Existing Riverside County General Plan Policies

The following existing General Plan polices address various facets of land use planning and regulation within the County of Riverside.

1. Land Use (LU) Element Policies

Policy LU 1.1: Allow for the continued occupancy, operation and maintenance of legal uses and structures that exist at the time of the adoption of the General Plan and become non-conforming due to use, density and/or development requirements.

Policy LU 1.3: Notify city planning departments of any discretionary projects within their respective spheres-of-influence in time to allow for coordination and to comment at public hearings.

Policy LU 1.6: Coordinate with local agencies, such as LAFCO, service providers and utilities, to ensure adequate service provision for new development.

Policy LU 1.8: As required by the Airport Land Use Law, submit certain proposed actions to the Riverside County Airport Land Use Commission for review. Such actions include proposed amendments to the general plan, area plans, or specific plans, as well as proposed revisions to the zoning ordinance and building codes.

Policy LU 2.1: Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Map (Figure LU-1) and the Area Plan Land Use Maps, in accordance with the following:

a. Provide a land use mix at the countywide and area plan levels based on projected need and supported by evaluation of impacts to the environment, economy, infrastructure, and services.

b. Accommodate a range of community types and character, from agricultural and rural enclaves to urban and suburban communities.

c. Provide for a broad range of land uses, intensities, and densities, including a range of residential, commercial, business, industry, open space, recreation, and public facilities uses.

d. Concentrate growth near community centers that provide a mixture of commercial, employment, entertainment, recreation, civic, and cultural uses to the greatest extent possible.

e. Concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character of Riverside County to the greatest extent possible.

f. Site development to capitalize upon multi-modal transportation opportunities and promote compatible land use arrangements that reduce reliance on the automobile.

g. Prevent inappropriate development in areas that are environmentally sensitive or subject to severe natural hazards.

Policy LU *8.8* (Previously LU 7.8): Stimulate industrial/business-type clusters that facilitate competitive advantage in the marketplace, provide attractive and well landscaped work environments, and fit with the character of our varied communities.

Policy LU *9.2* (Previously LU 8.2): Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and federal and state regulations such as CEQA, NEPA, the Clean Air Act and the Clean Water Act.

Policy LU *9.3* (Previously LU 8.3): Incorporate open space, community greenbelt separators, and recreational amenities into Community Development areas in order to enhance recreational opportunities and community aesthetics, and improve the quality of life. (AI 9, 28)

Policy LU *15.2* (Previously LU 14.2): Review all proposed projects and require consistency with any applicable airport land use compatibility plan as set forth in [General Plan] Appendix L*-1* and as summarized in the Area Plan's Airport Influence Area section for the airport in question.

Policy LU *15.8* (Previously LU 14.6): In accordance with FAA [Federal Aviation Administration] criteria, avoid locating sanitary landfills and other land uses that are artificial attractors of birds within 10,000 feet of any runway used by turbine-powered aircraft and within 5,000 feet of other runways. Also avoid locating attractors of other wildlife that can be hazardous to aircraft operations in locations adjacent to airports. (AI 3)

Policy LU *21.2* (Previously LU 17.2): Require that adequate and available circulation facilities, water resources, sewer facilities and/or septic capacity exist to meet the demands of the proposed land use.

Policy LU *21.3* (Previously LU 17.3): Ensure that development does not adversely impact the open space and rural character of the surrounding area.

Policy LU *28.2* (Previously LU 22.2): Accommodate higher-density residential development near community centers, transportation centers, employment and services areas.

Policy LU *28.6* (Previously LU 22.6): Require setbacks and other design elements to buffer residential units to the extent possible from the impacts of abutting agricultural, roadway, commercial and industrial uses.

Policy LU *28.9* (Previously LU 22.9): Require residential projects to be designed to maximize integration with and connectivity to nearby community centers, rural villages and neighborhood centers.

Policy LU *30.3* (Previously LU 24.3): Protect industrial lands from encroachment of incompatible or sensitive uses, such as residential or schools, that could be impacted by industrial activity.

Policy LU *30.4* (Previously LU 24.4): Concentrate industrial and business park uses in proximity to transportation facilities and utilities, and along transit corridors.

Policy LU *30.6* (Previously LU 24.6): Control the development of industrial uses that use, store, produce or transport toxins, generate unacceptable levels of noise or air pollution, or result in other impacts.

Policy LU *31.1* (Previously LU 25.1): Accommodate the development of public facilities in areas appropriately designated by the General Plan and area plan land use maps.

Policy LU *31.3* (Previously LU 25.3): Require that new public facilities protect sensitive uses, such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking and operational hazards.

Policy LU *32.12* (Previously LU 26.12): Since it is a land use designation within the Community Development Foundation Component, the Community Center designation may be enlarged, reduced, added, or eliminated for any site within a Community Development area through quarterly General Plan amendments (GPAs). However, the area of any one Community Center (whether included in the General Plan at the time of its initial adoption or subsequently added through a general plan amendment) shall not be permitted to be enlarged by a cumulative total (through one or more GPAs) of more than 10% during any eight-year certainty period.

Policy LU *36.1* (Previously LU 31.1): Preserve the character of Eastern Riverside County Desert Areas through application of those land use designations reflected on [General Plan] Figure LU-6, Eastern Riverside County Desert Areas Land Use Plan.

2. Circulation (C) Element Policies

Policy C 1.1: Design the transportation system to respond to concentrations of population and employment activities, as designated by the Land Use Element and in accordance with the [General Plan] Circulation Plan, Figure C-1.

Policy C 1.2: Support development of a variety of transportation options for major employment and activity centers, including direct access to transit routes, primary arterial highways, bikeways, park-n-ride facilities and pedestrian facilities.

Policy C 1.4: Utilize existing infrastructure and utilities to the maximum extent practicable and provide for the logical, timely and economically efficient extension of infrastructure and services.

Policy C 1.5: Evaluate the planned circulation system as needed to enhance the arterial highway network to respond to anticipated growth and mobility needs.

Policy C 1.7: Encourage and support the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle lanes and paths, and mixed-use community centers.

Policy C 3.11: Generally locate commercial and industrial land uses so that they take driveway access from General Plan roadways with a classification of Secondary Highway or greater, consistent with design criteria limiting the number of such commercial access points and encouraging shared access. Exceptions to the requirement for access to a Secondary Highway or greater would be considered for isolated convenience commercial uses, such as stand-alone convenience stores or gas stations at an isolated off-ramp in a remote area. Industrial park type developments may be provided individual parcel access via an internal network of Industrial Collector streets.

Policy C 3.12: Improve highways serving as arterials through mountainous and rural areas to adequately meet travel demands and safety requirements while minimizing need for excessive cut and fill.

Policy C 3.16: Dedicate necessary rights-of-way as part of the land division and land use review processes.

Policy C 3.21: Consider granting a reduction in improvement requirements for land divisions involving parcels greater than 20 acres in size and designated as agriculture on the General Plan Land Use map.

Policy C 3.30: Design roadways to accommodate wildlife crossings whenever feasible and necessary.

Policy C 3.31: Through the development review process, identify existing dirt roads serving residential areas which may be impacted by traffic from new developments and design new developments such that new traffic is discouraged from using existing dirt roads. When this is unavoidable, require that new developments participate in the improvement of the affected dirt roads.

Policy C 4.1: Provide facilities for the safe movement of pedestrians within developments, as specified in the County ordinances regulating the division of land of the County of Riverside.

Policy C 4.6: Consult the County Transportation Department as part of the development review process regarding any development proposals where pedestrian facilities may be warranted. The County may require both the dedication and improvement of the pedestrian facilities as a condition of development approval.

Policy C 6.1: Provide dedicated and recorded public access to all parcels of land, except as provided for under the statutes of the State of California.

Policy C 6.2: Require all-weather access to all new development.

Policy C 7.2: Work with property owners to reserve right-of-way for potential CETAP corridors through site design, dedication and land acquisition, as appropriate.

Policy C 7.4: Coordinate with transportation planning, programming and implementation agencies such as Caltrans, Riverside County Transportation Commission, Western Riverside Council of Governments, Coachella Valley Association of Governments, and the cities of Riverside County on various studies relating to freeway, high occupancy vehicle/high occupancy toll lanes, and transportation corridor planning, construction, and improvement in order to facilitate the planning and implementation of an integrated circulation system.

Policy C 7.8: Collaborate with all incorporated cities and all adjacent counties to implement and integrate right-of-way requirements and improvement standards for General Plan roads that cross jurisdictional boundaries. Detailed procedures have been developed and include the following:

a. For development under County jurisdiction but within the sphere of influence (SOI) of a city having roadway standards different from the County, city and County staff will cooperate and agree on a reasonable choice of design standards for the particular circumstances involved, and negotiate logical transitions from city to County standards.

b. In general, for such development under County jurisdiction but within the SOI of an incorporated jurisdiction, city standards should apply if the staffs concur that annexation to the city will logically occur in the short to intermediate range future. Where annexation seems doubtful into the long term future, County standards should apply.

c. Transition areas at meeting points of roadways designed to differing city and County standards or differing functional classifications should be individually designed to facilitate satisfactory operational and safety performance. Further, the County should update the road standards to reflect the intent of this policy and standards agreed upon by the County and other local agencies.

Policy C 8.5: Participate in the establishment of regional traffic mitigation fees and/or road and bridge benefits districts to be assessed on new development. The fees shall cover a reasonable share of the costs of providing local and subregional transportation improvements needed for serving new development in the unincorporated area.

Policy C *20.9* (Previously C 20.7): Incorporate specific requirements of the Western Riverside County Multiple Species Habitat Conservation Plan and the Coachella Valley Multiple Species Habitat Conservation Plan into transportation plans and development proposals.

Policy C *20.10* (Previously C 20.8): Avoid, where practicable, disturbance of existing communities and biotic resource areas when identifying alignments for new roadways or for improvements to existing roadways and other transportation system improvements.

3. Multipurpose Open Space (OS) Element Policies

Policy OS 6.1: During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

Policy OS 8.1: Cooperate with federal and State agencies to achieve the sustainable conservation of forest land as a means of providing open space and protecting natural resources and habitat lands included in the MSHCPs.

D. Proposed New or Revised County General Plan Policies

The following proposed polices address issues related to land use planning and regulation.

1. Land Use (LU) Element Policies

Policy LU 1.5: The County shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality, ~~and~~ watershed and habitat management~~, child care~~ with cities, local and regional agencies, stakeholders, Indian nations and surrounding jurisdictions.

Policy LU 1.7: ~~Within five years of the adoption of this General Plan, r~~ *R*eview all Specific Plans that have been in effect for 20 or more years in order to determine whether the types and intensities of proposed development remain appropriate for undeveloped areas within the Specific Plan boundaries. In conjunction with each Foundation General Plan Amendment (eight-year) cycle, prepare a report on Specific Plan implementation addressing all Specific Plans, with particular attention to Specific Plans that have reached their twentieth anniversary during that eight-year period.

Policy LU 3.1: Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Maps (Figure LU-1) and the Area Plan Land Use Maps in accordance with the following concepts:

a. Accommodate communities that provide a balanced mix of land uses, including employment, recreation, shopping, *public facilities* ~~child care~~ and housing. ~~Encourage the siting of child care centers compatible with community needs, land use and character, and encourage such centers to be available, accessible and affordable for all economic levels.~~

b. Assist in and promote the development of infill and underutilized parcels which are located in Community Development areas, as identified on the General Plan Land Use Map.

c. Promote parcel consolidation or coordinated planning of adjacent parcels through incentive programs and planning assistance.

d. Create street and trail networks that directly connect local destinations, and that are friendly to pedestrians, equestrians, bicyclists, and others using non-motorized forms of transportation.

e. Re-plan existing urban cores and specific plans for higher density, compact development as appropriate to achieve the RCIP Vision.

f. In new towns, accommodate compact, transit adaptive infrastructure (based on modified standards that take into account transit system facilities or street network).

g. Provide the opportunity to link communities through access to multi-modal transportation systems.

Policy LU 5.4: Ensure that development and conservation land uses do not infringe upon existing *essential public facilities and* public utility corridors, ~~including~~ *which include County regional landfills,* fee-owned rights of-way and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.

Policy LU *7.6* (Previously LU 6.7): *Require* ~~B~~*b*uffer*ing to the extent possible* and/or *the* maintain*ing of* a natural edge for proposed development directly adjacent to ~~n~~*N*ational ~~f~~*F*orests.

Policy LU *9.1* (Previously LU 8.1): Provide for permanent preservation of open space lands that contain important natural resources, *cultural resources,* hazards, water features, watercourses *including arroyos and canyons*, and scenic and recreational values.

Policy LU *9.4* (Previously LU 8.4): Allow development clustering and/or density transfers in order to preserve open space, natural resources, *cultural resources,* and/or biologically sensitive resources. *Wherever possible, development on parcels containing 100-year floodplains and blue line streams and other higher-order watercourses and areas of steep slopes adjacent to them shall be clustered so as to keep development out of the watercourse and adjacent steep slope areas, and to be compatible with other nearby land uses.*

Policy LU *15.3* (Previously LU 14.3): Review all subsequent amendments to any airport land use compatibility plan and either *amend the General Plan to be consistent with the compatibility plan* ~~adopt the plan as amended~~ or overrule the Airport Land Use Commission as provided by law (Government Code Section 65302.3).

Policy LU *21.4* (Previously LU 17.4): Encourage clustered development where appropriate on lots smaller than the underlying land use designation would allow. *The density yield of the underlying land use designation may be clustered on one-half acre lots; however, for sites located adjacent to the Community Development Foundation Component, 10,000 square foot minimum lots may be considered.* ~~While lot sizes may vary, the overall project density must not exceed that of the underlying land use designation unless associated with an incentive program.~~

Policy LU *25.2* (Previously LU 19.2): Provide for a balanced distribution of recreational amenities. ~~in Open Space, Rural and Community Development General Plan land uses.~~

Policy LU *28.5* (Previously LU 22.5): Integrate a continuous network of parks, plazas, public squares, bicycle trails, transit systems and pedestrian paths *into new communities and developments* to provide both connections within each community and linkages with surrounding features and communities.

***NEW* Policy LU 29.10:** *Floor to Area Ratio (FAR) is intended for planning purposes only. The Planning Director or his/her designee shall have the discretion to authorize use of a FAR that is less intense in order to encourage good project design and efficient site utilization.*

***NEW* Policy LU 30.9:** *Floor to Area Ratio (FAR) is intended for planning purposes only. The Planning Director or his/her designee shall have the discretion to authorize use of a FAR that is less intense in order to encourage good project design and efficient site utilization.*

Policy LU *31.2* (Previously LU 25.2): Protect major public facilities, such as landfill and solid waste *processing* ~~disposal~~ sites and airports, from the encroachment of incompatible uses.

2. Circulation (C) Element Policies

Policy C 1.3: Support the development of transit connections *between Riverside County and regional activity centers in other counties as well as transit connections* that link the Community Centers located throughout the county and as identified in the Land Use Element and in the individual Area Plans.

Policy C 3.17: Ensure dedications are made, where necessary, for additional rights-of-way or easements outside the road right*s*-of-way ~~that are~~ needed to establish slope stability, ~~or~~ drainage and *related* structures. These dedica-

tions shall be made by land dividers or developers to the responsible agency during the land division and land use review process.

Policy C 4.3: Assure *and facilitate* pedestrian access from developments to existing and future transit routes and terminal facilities through project design.

Policy C *4.8* (Previously C 4.9): Coordinate with all transit operators to ensure that *ADA compliant* pedestrian facilities are provided along and/or near all transit routes, whenever feasible. New land developments may be required to provide pedestrian facilities due to existing or future planned transit routes even if demand for pedestrian facility *may* ~~is~~ not *be* otherwise warranted.

Policy C *4.9* (Previously C 4.10): Review all existing roadways without pedestrian facilities when they are considered for improvements ~~(whether maintenance or upgrade)~~ to determine if new pedestrian facilities are warranted. New roadways should also be assessed for pedestrian facilities.

Policy C 6.3: Limit access points and intersections of streets and highways based upon the road's General Plan classification and function. *Require that* ~~A~~ *a*ccess points ~~must~~ be located ~~a sufficient distance away from major intersections to allow for safe, efficient operation~~ *so that they comply with Riverside County's minimum intersection spacing standards. Under special circumstances the Transportation Department may consider exceptions to this requirement*.

Policy C 7.1: Work with incorporated cities to mitigate the cumulative impacts of incorporated and unincorporated development on the countywide transportation system.

Policy C 7.3: Incorporate the Regional Transportation Plan *of the Southern California Association of Governments (SCAG) and*~~,~~ the Riverside County Congestion Management Program~~, and the Riverside County Short- and Long-Range Transit Plans~~ into the Circulation Element and ~~encourage~~ *with* the active participation of Caltrans*, work to expedite* the design *and implementation* of state highway capital improvement projects.

Policy C 7.6: Support ~~the development of a new internal East West CETAP Corridor in conjunction with a new Orange County CETAP connection. Such corridor(s) would be constructed simultaneously to avoid further congestion on Interstate 15. Or, in the alternative, the East-West Corridor, would be constructed simultaneously with~~ major capacity enhancements on ~~the~~State Route 91, between ~~Pierce Street~~ *the counties of Riverside* and ~~the~~ Orange ~~county line and the capacity improvement of Interstate 15 (north) to westbound State Route 91 overpass~~.

Policy C 7.9: Review development applications in cooperation with RCTC and as appropriate, to identify the precise location of CETAP corridors and act to preserve such areas from any permanent encroachments, pending dedication or acquisition. *Coordinate with RCTC to evaluate and update the CETAP corridors periodically as conditions warrant.*

Policy C 8.7: Review and update the County *of Riverside* Road and Bridge Benefit District fee structure ~~for~~*and* development impact fees ~~annually~~ *periodically* to ensure that capacity expansion projects are developed and constructed in a timely manner.

Policy C 15.3: Develop a trail system which connects *Riverside* County parks and recreation areas while providing links to open space areas, equestrian communities, local municipalities and regional recreational facilities (including other regional trail systems)*, and ensure that the system contains a variety of trail loops of varying classifications and degrees of difficulty and length*.

Policy C 15.4: *Periodically* ~~R~~ review and update the *Trails and Bikeways Plan ([General Plan] Figure C-7)* ~~Regional Trail Map~~ in accordance with the review procedures and schedule of the General Plan, in order to *ensure* ~~assure~~ *its* compatibility with the other ~~elements~~ *components* of the *Riverside* County General Plan, and with the similar plans of *agencies, such as* Western Riverside County Council of Governments *(WRCOG),* Coachella Valley Association of Governments *(CVAG)*, Riverside County Transportation Commission *(RCTC)*, *Regional Conservation Authority, Riverside County Habitat Conservation Authority* and all jurisdictions within and abutting Riverside County. *This shall include consistency with the WRCOG and CVAG non-motorized planning documents.*

3. Multipurpose Open Space (OS) Element Policies

Policy OS *17.1* (Previously OS 17.3): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when conducting review of possible *legislative actions, such as* general plan amendments*,* ~~and/or~~ zoning *ordinance amendments, etc.* ~~changes.~~

Policy OS *17.2* (Previously OS 17.1): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when conducting review of development applications.

Policy OS *17.3* (Previously OS 17.2): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when developing transportation or infrastructure projects that have been designated as covered activities in the applicable MSHCP.

Policy OS 18.1: Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCPs~~, if adopted~~.

4.2.4 Thresholds of Significance for Land Use

The project would result in a significant impact on land use if it would:

A. Physically divide an established community.

B. Conflict with any applicable land use plan, policy or regulation or an agency with jurisdiction over the project (including, but not limited to, the general plan) adopted for the purpose of avoiding or mitigating an environmental affect.

C. Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.2.5 Effect of GPA No. 960 on the General Plan and on Land Use

The proposed project, GPA No. 960, includes changes to a variety of General Plan policies, maps and implementing directions related to land use. A detailed description of the individual items encompassed by this project is provided in Section 3.0 (Project Description). Because the General Plan is concerned mainly with the physical build out of Riverside County, many of the changes associated with GPA No. 960 affect planned land usage. In particular, proposed changes affect land use overlays, land use designations and policies that affect the conversion of rural, semi-rural, agricultural and vacant lands to suburban or urban uses in various parts of the county.

Table 4.2-G (Land Uses Under Existing General Plan and Proposed Project), below, shows the acreage covered by each of the General Plan land use designations (LUDs) within unincorporated Riverside County under the existing General Plan and as it would be as a result of adoption of the proposed project for those components of the project with known or foreseeable spatial components. It should be noted that both scenarios in the table represent theoretical build out of Riverside County pursuant solely to the mapped LUDs and the mid-point values established in General Plan Appendix E-1 (as described in detail in Section 4.1 (Environmental Assumptions and Methods) of this EIR). It is not to be construed as representing official or actual build out entitlements for either the existing or proposed General Plan.

Among other things, the proposed project would update or add several land use overlays, land use designations and policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in various locales throughout the county. As with the current General Plan, future development consistent with GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas in some locations.

By definition, a general plan is most basically a blueprint for guiding a city or county's future growth and development. As such, the changes to Riverside County's General Plan proposed by GPA No. 960 have the potential to affect the future growth and development of the unincorporated portions of Riverside County in several ways. Some land use changes would serve to increase the development potential (density or intensity) for a given site or area, such as when an existing LUD is changed from Open Space-Water (OS-W), which does not permit development, to Open Space-Rural (OS-RUR), which allows low-density residential development (one home per 20 acres). In terms of environmental impact, if this change occurred on a 100-acre parcel of vacant (undeveloped) land, it could eventually result in the introduction of five new homes.

Similarly, some land use changes would decrease development potential; for example, when land designated in the existing General Plan as "Medium Density Residential" (MDR, 2-5 dwelling units per acre), is reduced to "Estate Density Residential" (EDR, one dwelling unit per 2 acres). Accordingly, a change of this sort on a 100-acre parcel of vacant land could result in the introduction of up to 50 new homes on the site. In this case, it should be noted that the environmental impact is based on the difference between the existing site condition (vacant), rather than the existing General Plan LUD (which would have allowed up to 500 homes on the same parcel). In the given example, the entire 100-acre site would be subject to physical environmental impacts (for example, going from native, undisturbed vegetation to fully graded). And, demographically, the site could be said to theoretically house around 153 new residents, based on Riverside County's average home occupancy rate of 3.06 people per unit.

Lastly, some land use-related project changes would be ascribed as neutral, in that they merely change development potential incrementally, rather than grossly increasing or decreasing it. An example of this would be changing a site's LUD from Medium Density Residential to Business Park. For the vacant 100-acre parcel example, in both cases the entire 100-acre site would be subject to ground-disturbing environmental impacts. The key difference here would be that the residential use would provide new homes and about 150 new residents. These new residents would need schools, medical facilities, libraries and so on. The business park, on the other hand, would provide office and retail jobs instead, and also increase commuter traffic.

Thus, this chapter mainly concerns itself with the two kinds of land use changes with the potential for adverse environmental effects: those resulting in development on land that would have otherwise remained undeveloped and those resulting in development of increased density or intensity compared to that accommodated under the existing General Plan. The other outcomes, which would not adversely affect existing land use, are not discussed further here. Thus, the following proposed GPA No. 960 components are not included: deletion of Rural Village Overlays from the communities of El Cariso, Aguanga and Anza (thus leaving the existing General Plan's base

Data Source: Riverside County Planning

- Agriculture
- Rural
- Rural Community
- Open Space
- Community Development
- Other
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.2.7

December 16, 2013

Miles

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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

GPA NO. 960 - PROPOSED GENERAL PLAN LAND USE FOUNDATIONS

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LUDs unchanged and in effect); deletion of the San Jacinto Agriculture/Potential Development Study Area (also leaving existing General Plan base LUDs unchanged and in effect).

All of these changes involve elimination of future (unrealized) development potential, rather than changes to any of the existing land uses existing in these areas. Additionally, deletion of such areas does not change the base LUDs underlying the sites; development of which was analyzed previously in EIR No. 441 for the 2003 RCIP General Plan. Likewise, the two new policies affecting potential floor-area-ratios (FARs) for commercial or industrial building footprints (proposed policies LU 29.10 and 30.9) would enable smaller building footprints, rather than increased intensities, and thus would not trigger any additional adverse environmental effects. For further information on the details of the various components of GPA No. 960, see Section 3.0 (Project Description). In terms of overall land use effects, the items proposed under GPA No. 960 would result in the net changes indicated in Table 4.2-G (Land Uses Under Existing General Plan and Proposed Project).

It should be noted that the following projections are based on the assumption that all of the changes proposed under GPA No. 960 actually result in future development and fully build out. That is, it is a theoretical, worst-case scenario that likely over-states the actual development potential in the real-world. The actual future development of the individual parcels and areas affected by GPA No. 960 proposals are subject to the discretion of many hundreds to thousands of individual property owners, including both private individuals, business entities and even various public agencies and other entities. The County of Riverside has little to no control over the decision to propose development (new or redeveloped) on a given site. (Though the County of Riverside will have the discretion to review and approve or deny such development applications for most cases within unincorporated Riverside County). Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply (i.e., existing home inventory) and even infrastructure availability (water supply, electricity, etc.)

Table 4.2-G: Land Uses Under Existing General Plan and Proposed Project

GENERAL PLAN LAND USE	Existing GP Acreage	Proposed* Acreage	Change in Acreage	Percent Change
AGRICULTURE FOUNDATION	**189,730**	**188,880**	**-850**	**-0.4%**
Agriculture (AG)	189,730	188,880	-850	-0.4%
RURAL FOUNDATION	**293,400**	**292,550**	**-850**	**-0.3%**
Rural Residential (RR)	130,490	132,110	1,620	1.2%
Rural Mountainous (RM)	140,930	139,260	-1,670	-1.2%
Rural Desert (RD)	21,990	21,080	-900	-4.1%
RURAL COMMUNITY FOUNDATION	**360,380**	**64,300**	**-2,680**	**-4.0%**
Estate Density Residential (RC-EDR)	31,070	28,150	-2,930	-9.4%
Very Low Density Residential (RC-VLDR)	22,160	22,370	220	1.0%
Low Density Residential (RC-LDR)	13,750	13,780	30	0.2%
OPEN SPACE FOUNDATION	**3,282,700**	**3,292,050**	**9,360**	**0.3%**
Open Space-Conservation (OS-C)	53,700	54,060	360	0.7%
Open Space-Conservation Habitat (OS-CH)	1,203,500	1,213,820	10,320	0.9%
Open Space-Water (OS-W)	74,100	74,350	250	0.3%
Open Space-Recreation (OS-R)	13,940	13,950	10	0.0%
Open Space-Rural (OS-RUR)	1,929,900	1,928,330	-1,570	-0.1%
Open Space-Mineral Resources (OS-MIN)	7,550	7,550	0	0.0%
COMMUNITY DEVELOPMENT FOUNDATION	**177,680**	**173,170**	**-4,510**	**-2.5%**
Estate Density Residential (EDR)	3,400	2,710	-690	-20.3%
Very Low Density Residential (VLDR)	19,560	19,630	70	0.3%
Low Density Residential (LDR)	9,290	8,940	-350	-3.8%
Medium Density Residential (MDR)	57,590	55,820	-1,770	-3.1%
Medium-High Density Residential (MHDR)	14,040	13,990	-50	-0.4%

GENERAL PLAN LAND USE	Existing GP Acreage	Proposed* Acreage	Change in Acreage	Percent Change
High Density Residential (HDR)	4,030	4,070	40	0.9%
Very High Density Residential (VHDR)	1,330	1,270	-60	-4.8%
Highest Density Residential (HHDR)	220	240	20	8.2%
Commercial Retail (CR)	4,830	3,810	-1,030	-21.2%
Commercial Tourist (CT)	2,630	2,800	170	6.7%
Commercial Office (CO)	490	490	0	-0.6%
Light Industrial (LI)	21,520	20,010	-1,510	-7.0%
Heavy Industrial (HI)	1,700	1,700	0	0.0%
Business Park (BP)	5,290	5,370	80	1.5%
Public Facilities (PF)	30,550	31,140	580	1.9%
Community Center (CC)	220	220	0	0.0%
Mixed Use Planning Area (MUPA)	980	980	0	0.1%
RIVERSIDE COUNTY TOTAL:	**4,010,490**	**4,010,950**	***470***	

* Reflects General Plan build out scenario as it would exist if GPA No. 960 is adopted.
Source: Riverside County Center for Demographic Research Project Application Data, 2010.

Table 4.2-H: Proposed Land Use Changes Associated With GPA No. 960

Project Component	Approx. Area[1]	Existing Uses of Land[2]	Actual DUs[3]	Proposed (GPA No. 960) LUDs[3, 4]	Theo Build Out DUs[5]
Areas of Potential Affects					
Northeast Business Park					
Overlay to allow existing Agricultural uses (AG), such as dairylands and grazing, to develop as Business Park (BP) in the future as area urbanizes.	260 ac	agri, water, ranch	0 du	AG (or BP as an Alternate LUD)	0 - 10 du[8]
Good Hope Rural Village Overlay					
RVO to allow an alternate development pattern for the area as urbanization alters area needs.	220 ac	ind, ag-res, sfr, vac; **<1%:** agri, comr, pf, ranch, rural res	131 du	MDR, VLDR-RC	250 du
Meadowbrook Rural Village Overlay					
RVO to allow an alternate development pattern for the area as urbanization alters area needs.	630 ac	agri, comr, ind, pf, mob park, ag-res, sfr, rural res, vac; **<1%:** util, ranch, rural res	313 du	CR, RM, VLDR; **<1%:** OS-CH	530 du
Lakeland Village Policy Area					
Changes to various LUDs to accommodate revisions to Lake Elsinore floodplain maps.	290 ac	comr, ind, water, pf, rec, mob park, ag-res, sfr, vac; **<1%:** util, rural res	416 du	CR, LI, MDR, OS-C; **<1%:** HDR	210 du
Blythe Airport Region					
Changes to various LUDs to address ALUC map land use and safety constraints.	1,050 ac	agri, ind, pf, ranch, ag-res, rural res, sfr, vac; **<1%:** util	346 du	AG, EDR, EDR-RC, LI, MHDR, OS-RUR, PF, RR; **<1%:** LDR, OS-C	1,340 du
Riverside Municipal Airport Region[7]					
Changes to various LUDs to address ALUC map land use and safety constraints.	50 ac	agri, rec, ag-res, rural res, vac	21 du	EDR, OS-REC, VLDR	10 du
Flabob Airport Region[7]					
Changes to various LUDs to address ALUC map land use and safety constraints.	430 ac	agri, pf, school, util, rec, ranch, ag-res, rural res, sfr, vac; **<1%:** mfr apts	298 du	EDR, HDR, LDR, PF, VLDR, MHDR, OS-C, OS-REC, RR; **<1%:** CR, MDR	870 du
Salton Sea Region Agriculture and Fish Farms					
Changes to various LUDs to protect and preserve the region's agricultural uses, particularly aquaculture ("fish farms").	860 ac	agri, water, pf, vac; **<1%:** mob park	107 du	AG	40 du

Project Component	Approx. Area[1]	Existing Uses of Land[2]	Actual DUs[3]	Proposed (GPA No. 960) LUDs[3, 4]	Theo Build Out DUs[5]
Categorical LUD Revisions					
Changes to various LUDs to correct prior mapping errors or oversights, or to clarify planning intent.	6,900 ac	agri, water, pf, util, ranch, rural res, sfr, vac; **<1%:** ind, rec, mob park, ag-resi	430 du	EDR, MDR, OS-C, OS-CH, OS-RUR, OS-W, PF, RD, RM, RR, VLDR-RC; **<1%:** CR, CT, EDR-RC, LI HDR,LDR, OS-REC, VLDR	1,300 du
Areas of Neutral Affects					
Aguanga Rural Village Study Area					
Remove RVSA designation. Area to develop per underlying LUDs.	6,120 ac	agri, rural res, ag-res, vac; **<1%:** comr, school, util, ranch, rec	384 du	AG, EDR-RC, OS-C, OS-CH, OS-RUR, RR, RM; **<1%:** CR, TRIBE, OS-W, VLDR, VLDR-RC	840 du
Anza Rural Village Study Area					
Remove RVSA designation. Area to develop per underlying LUDs and per new policy area.	71,110 ac	agri, ranch, rural resi, vac; **<1%:** water, pf, ag-resi	3,022du	AG, EDR-RC, OS-C, RR, OS-CH, OS-RUR, RM; **<1%:** TRIBE, OS-W, VLDR, VLDR-RC, CR, OS-REC	8,160 du
El Cariso Rural Village Study Area					
Remove RVSA designation. Area to develop per underlying LUDs.	210 ac	ag-res, rural res, sfr, vac; **<1%:** agri, comr, ind	55 du	RM, RR	30 du
Chiriaco Summit Rural Village Study Area					
Remove RVSA; change to "Policy Area." No change in development potential.	660 ac	vac; **<1%:** pf	0 du	OS-RUR	20 du
San Jacinto Ag/Potential Development Study Area					
Remove RVSA designation. Area to develop per underlying LUDs.	7,660 ac	agri, pf, rural res, sfr, vac; **<1%:** min, util, ranch, ag-res	320 du	AG, LDR-RC, MDR, OS-CH, RM, VLDR-RC; **<1%:** OS-W, VLDR	1,170 du
Sky Valley Rural Village Study Area					
After analysis, no revisions proposed. Development potential remains as per existing General Plan.	100 ac	ind, school, rural res, vac; **<1%:** sfr	10 du	RR	20 du
Habitat Conservation					
Parcels acquired by conservation agencies (RCA) for open space conservation (as OS-CH) under the WRC-MSHCP.	14,890 ac	vac	0 du	OS-CH	0 du
Totals	**111,440 acres**		**5,853 du**		**14,790 du (approx. 150% increase)**

Key:
agri = agriculture/crops
pf = public facilities
util = utilities/infrastructure
rural res = rural residential
Tribe = Indian lands (non-county)
comr = commercial
rec = recreation
sfr = single-family residences
mfr apt = multi-family apartments
du = dwelling units (residences)
ind = industrial
school = schools
mob park = mobile home park
vac = vacant
min = mineral/mining
ranch = animal-agri
ag-res = multiple sfr on lot

Footnotes:
1. Rounded to nearest 10 acres (or nearest 1 acre, if total less than 10 acres). Thus, totals may not sum precisely.
2. Uses and LUDs encompassing less than one-tenth of 1% of the total area of the project component omitted.
3. As determined through visual analysis. See Appendix EIR-3.
4. See General Plan, Table 3, for full Land Use Designation (LUD) descriptions. The "theoretical" values listed here are for comparison purposes and are not equivalent to the official build out projections included in either the existing or proposed General Plan.
5. Theoretical build out = number of dwelling units resulting if 100% of project area developed as per GPA No. 960-proposed LUDs. Includes 60% of Commercial-Retail (CR) acres developing as medium-density residential (MDR).
6. "/RC" indicates LUDs for both the Community Development and Rural Community (RC) Foundations included.
7. Within the areas incorporated as new cities (Eastvale and Jurupa Valley) subsequent to this project's inception.
8. "AG" LUD allows up to 1 du per 20 acres; no residences allowed under "BP" LUD.

Source: Riverside County Planning Department, Project Application, GIS analysis, 2010.

Note: Through the adoption of GPA 1077: Wine Country Community Plan, the Temecula Valley Wine Country Policy Area was created in the Southwest Area Plan. However, the amendment was adopted after the date of the NOP for GPA 960 and as such it is not included within the analysis contained in the Land Use Section of this document. Refer to GPA No. 960 Appendix Q.

4.2.6 Land Use - Impacts and Mitigation

The following land use-related impacts that could result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

A. Would the project physically divide an established community?

Impact 4.2.A - Physically Divide an Established Community: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. None of the proposed changes, however, are in a location or of an extent that would physically divide an established community. Thus, this impact would be less than significant. Moreover, compliance with existing regulatory programs, Riverside County ordinances and existing General Plan policies would further reduce the already insignificant impact to communities.

1. Analysis of Impact 4.2.A

The physical arrangement of the built environment within Riverside County would change as development is authorized pursuant to the General Plan, including those policies, plans and provisions amended as per the proposed project. In addition to Policy Areas, the General Plan also protects existing communities through a variety of policies, as well as the application of land use designation (LUD) mapping. All of the mapped LUDs in the General Plan fall within Foundation Components, which limit the types and intensities of development. See page LU-38 of the General Plan for additional details on the Foundations, their implementation and use.

In terms of the General Plan changes proposed by GPA No. 960, spatial analysis indicates they would not result in future development that would cause the physical division of an established community through placement of a freeway, railroad, airport, dam or large area of open space. Neither the revisions to the Land Use Element nor the Circulation Element would result in any new significant open space areas, roadway networks or other large-scale infrastructure (canals, freeways, etc.) that could physically divide an establish community. In terms of land use, there are no new large-scale changes to land use designations, especially to open space designations, that would physically divide a community. Areas being designated as Open Space-Conservation Habitat under GPA No. 960 have been selected specifically because of their location away from conflict with urban development. The proposed changes to policy areas and overlays, particularly the rural village study areas and overlays, also serve to further define and clarify expected land use for those areas. They provide guidance to enhance future development, rather than cause future disruptions or divisions. Also, as shown in Table 4.2-G, some of the land use changes proposed under GPA No. 960 would serve to *remove* barriers to development, such as with the Rural Village Overlays, which establish alternate LUDs for rural areas anticipated to urbanize in the future as the County of Riverside grows.

In summary, the General Plan and its Area Plans are able to guide where and how future development will occur through the various means described above. The changes proposed by GPA No. 960 further enhance these means and, as outlined above and in Section 4.2.4 (Thresholds of Significance for Land Use), would not result in the physical division or disruption of any existing community. Further, as outlined below, because the General Plan (in general) and the individual Area Plans (specifically) provide policies that reflect the unique combination of conditions throughout Riverside County, future development accommodated by the proposed project would not disrupt or divide the physical arrangement of any established communities.

2. Regulatory Compliance for Impact 4.2.A

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, programs, Riverside County ordinances and General Plan policies would further reduce or minimize this already insignificant impact.

a. Compliance with State and County Regulations

Compliance with the following State of California and County of Riverside regulations would further prevent already insignificant impacts to physical access to and through established communities in unincorporated Riverside County. As expressed by the California Supreme Court, Riverside County's General Plan serves as the "constitution for future development." Accordingly, it has been developed and implemented pursuant to California's planning and zoning codes, as outlined in Section 4.2.3 (Policies and Regulations Addressing Land Use), to ensure that it contains the necessary elements (including objectives, standards, policies and plans, as well as maps and mitigation measures) to ensure growth and development within the county occur in an organized and appropriate manner. Among others, the Subdivision Map Act (CGC Section 66410, *et seq.*) is one of the laws that underpin the County of Riverside's legal authority to regulate and exert discretionary authority over a variety of development activities. The County of Riverside's various ordinances, also outlined in Section 4.2.3, provide specific directives on how and where such development activities can and cannot occur. Compliance with these requirements would aid in protecting established communities within the county from disruption or division.

b. Compliance with Existing Riverside County General Plan Policies

The following existing policies of the Riverside County General Plan would further reduce the already insignificant land use impacts to established communities. See Section 4.2.3.C for full text of each of these policies.

Land Use Policies: LU 1.1, 1.3, 1.6, 1.8, 2.1, 15.2, 28.6, 28.9, 30.3, 30.4, 30.6, 31.1, 31.2, 31.3, 36.1

Circulation Policies: C 1.1, 1.2, 1.3, 1.4, 1.7, 3.11, 3.12, 3.21, 3.30, 3.31, 4.1, 4.3, 4.9, 6.1, 6.2, 7.1, 7.2, 7.4, 7.8, 8.5, 20.9 and 20.10

Multipurpose Open Space Policies: OS 8.1

c. Compliance with Proposed New or Revised Riverside County General Plan Policies

The following proposed revised policies of the Riverside County General Plan would further reduce the already insignificant land use impacts to established communities due to physical division. See Section 4.2.3.C for full text of each of these policies.

Land Use Policies: LU 1.5, 3.1, 5.4, 7.6, 9.1, 9.4, 21.4, 25.2

Circulation Policies: C 3.17, 4.6, 4.8, 6.3, 7.3, 7.6, 8.7, 15.3, 15.4

Multipurpose Open Space Policies: OS 17.1, 17.2, 17.3, 18.1

3. Significance of Impact 4.2.A After Mitigation

The analysis presented above indicates development accommodated by the project, GPA No. 960, would have less than significant impacts on established communities due to physical division. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies would further reduce or avoid the insignificant impacts associated with the project.

B. Would the project conflict with any applicable land use plan, policy or regulation or agency with jurisdiction over the project (including, but not limited to, the general plan) adopted for the purpose of avoiding or mitigating an environmental effect?

Impact 4.2.B - Conflict With Land Use Policies Intended to Avoid or Mitigate an Environmental Effect: The proposed project contains new and revised policies, maps and data intended to clarify and enhance, not conflict, with the Riverside County General Plan, Riverside County ordinances and other regulatory programs, including those items adopted for the purpose of avoiding or mitigation an environmental effect. This impact would be less than significant. Moreover, compliance with existing regulatory programs and General Plan policies would further reduce the already insignificant impact.

1. Analysis of Impact 4.2.B

The changes proposed under GPA No. 960 are intended to clarify existing policies, correct errors and oversights and provide additional guidance where appropriate to further the physical growth and development of Riverside County. As such, the proposed changes in the general sense serve to enhance, rather than impede, the land use plans, policies and programs of the Riverside County General Plan, ordinances and other regulatory programs. Project impacts on Riverside County land use plans, policies and regulations would be less than significant. Consistency with various environmental regulations and programs are discussed by topic throughout this EIR. In addition, the project would also affect the following plans:

Airport Land Use Compatibility Plans (ALUCPs): The General Plan contains maps, policies and programs to preserve aviation ways, protect flight paths and minimize impacts to residents and workers in the airport vicinity and associated safety zones. Generally, countywide airport policies are provided in the General Plan Land Use Element. Map and policies particular to the specific public airports and facilities affecting Riverside County are provided in the applicable Area Plans.

Airports in Riverside County provide an important function for passengers as well as for local and regional economies. Future population increases projected for Riverside County would create an additional demand for air transportation. Since 2004, the Riverside County Airport Land Use Commission (ALUC) has adopted new land use compatibility plans for eleven of the fourteen public airports in Riverside County. Three airports, March Air Reserve Base, Hemet-Ryan Airport and Perris Valley Airport have not been completed to date. As land suitable for development becomes increasingly scarce, urban development may occur adjacent to airports. Such encroaching development may result in conflicts between new development and the goals and policies outlined in local Airport Land Use Plans (ALUPs). Thus, the General Plan is a tool for implementing and ensuring consistency with the purposes of these ALUPs.

Implementation of General Plan policies and land use designations related to airport land use plans reduces the effects of development encroachment of land adjacent to airports and protects the safety of residents and workers in the airport vicinity. The proposed policies and land use designation changes included in GPA No. 960, which

include improved land use mapping and LUD coordination for the Blythe, Flabob and Riverside Municipal Airports, would only serve to increase the level of compatibility between airport land use plans and the surrounding land uses. The proposed LUD changes within Riverside Municipal, Flabob and Blythe Airport Influence Areas facilitate parcel-level consistency that enhances the vision and goals of the Riverside County ALUC. GPA No. 960 does not propose changes for any other ALUPs within Riverside County and, thus, would not affect them. Overall, the project's effect on airport safety and ALUPs would be less than significant.

Other Plans: In terms of other agencies with jurisdiction over the project, project effects and impacts are discussed under the applicable environmental resource of this EIR. In particular, Section 4.8 (Biology) includes analysis of impacts to and consistency with the Western Riverside County and Coachella Valley Multi-species Habitat Conservation Plans, as well as others. The greenhouse gas chapter (Section 4.17) discusses the creation and implementation of a County Climate Action Plan to ensure implementation of and compliance with California's greenhouse gas reduction plans (e.g., AB 32). Section 4.14 (Mineral Resources) discusses County of Riverside compliance with SMARA, the State of California's Surface Mining and Reclamation Act. See these and other chapters in Section 4 of the EIR for additional information on these issues.

2. Regulatory Compliance for Impact 4.2.B

The analysis indicates this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, programs, policies and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

a. Compliance With Federal and State Regulations

Compliance with the following federal, state and county regulations would further prevent already insignificant impacts to land use plans, policies and regulations adopted to avoid or mitigate environmental effects.

State Aeronautics Act and Riverside County Airport Land Use Plans: All discretionary development proposals are reviewed against the applicable ALUPs. Pursuant to the State Aeronautics Act, the County of Riverside requires consistency between the two and makes findings for projects considered appropriate within airport safety zones. The proposed project is consistent with and would, in fact, enhance coordination of land use planning between the Riverside County General Plan and the ALUPs for the Flabob, Blythe and Riverside Municipal Airports.

Ordinance No. 448 - Airport Approaches Zoning: This ordinance supports of the purpose and provisions of CGC Section 50485. Any proceedings for additions or amendments to the official plan of an airport are required to conform to this ordinance.

Ordinance No. 576 – Regulating County Airports: As described in Section 4.2.3, this Riverside County ordinance provides regulations and standards that ensure airports are operated safely to protect residents, visitors, workers and property within the county.

b. Compliance With Existing Riverside County General Plan

The following existing Land Use Element policies (LU 1.8, 15.2, 15.8, 31.1 and 31.2) of the Riverside County General Plan would further reduce the already insignificant impact. See Section 4.2.3.C for full text of each of these policies.

c. Compliance With Proposed New or Revised General Plan Policies

The following new or revised policies of the Riverside County General Plan would further reduce the already insignificant impact to land use. See Section 4.2.3.C for full text of each of these policies.

Land Use Policy: LU 5.4

Multipurpose Open Space Policies: OS 17.1, 17.2, 17.3 and 18.1

3. Finding of Significance for Impact 4.2.B

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on land use policies, plans and regulations adopted for the purpose of avoiding or mitigation an environmental effect. In addition, compliance with the above-listed existing regulations, Riverside County ordinances and General Plan policies would further reduce or avoid the insignificant impacts associated with the project.

C. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Impact 4.2.C - Conflict With Any Habitat Conservation Plan or Natural Community Conservation Plan: This impact is analyzed under Impact 4.8.6 of Section 4.8 (Biology). To summarize, this project does not include any General Plan changes that would preclude or hinder the Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) in effect within Riverside County. Additionally, future development accommodated by the proposed General Plan changes would be required to comply with all applicable HCP requirements and fully analyze, avoid and develop adequate mitigation for any significant biological effects prior to project approval or construction. As such, this project would not conflict with any applicable HCP or NCCP. See Section 4.8 for full discussion.

4.2.7 Significance After Mitigation for Land Use

The analysis presented above indicates that future development consistent with the proposed project, GPA No. 960, would have less than significant impacts on land use-related environmental issues, including physical division of an established community, consistency with land use plans, policies and regulations adopted to avoid or mitigate environmental effects, and conflicts with habitat conservation plans. Moreover, compliance with the above-listed existing regulatory programs, standards and General Plan policies would further prevent or reduce any impacts associated with the project.

Section 4.3

Population and Housing

Section 4.3 Population and Housing

4.3.1 Introduction

Population and housing are among the fastest changing statistical categories for Riverside County. The information provided in this section is intended to aid decision-makers in their consideration of the demographic and planning matters affecting the long-range future of Riverside County and the effect of the project, GPA No. 960, on these issues. To facilitate this, a variety of new data and information was developed as part of the project, as described below.

Related to these demographic issues, the project includes updates to two General Plan Appendices, which are labeled to indicate their relationship to prior General Plan Appendices. Appendix E-1, "County Socioeconomic Buildout Assumptions" provides an updated set of planning assumptions for predicting build out conditions. It is used for both the updated baseline (existing General Plan) land use-related build out projections used in this EIR, as well as those prepared to reflect the changes proposed by GPA No. 960. Appendix F-1, "County Population and Employment Forecast," prepared by the Riverside County Center for Demographics Research (RCCDR), updates Riverside County's socioeconomic data and forecasts. Together, these documents, plus project application data, provide the base data for the analysis presented in this chapter. Where other sources are used, they are noted accordingly. See Section 4.3.5 (Effect of GPA No. 960 on the General Plan and on Population and Housing) for additional details.

The current Regional Housing Needs Assessment (RHNA) "planning period," as established by SCAG and addressed in the General Plan Housing Element, is January 1, 2006, through June 30, 2014 *(4th cycle)*. The Riverside County General Plan's Housing Element was updated for this planning period and to comply with State of California housing law under General Plan Amendment No. 1097 adopted on June 25, 2013. *Riverside County is currently updating the Housing Element for the next RHNA "planning period" from October 2013 to October 2021 (5th cycle) in a separate process outside of General Plan Amendment No. 960. Thus, the data and analysis in this section is based on General Plan Amendment No. 1097, the most recently adopted General Plan Housing Element (4th cycle). The planning period of 2006-2014 for the 4th cycle more closely coincides with the baseline date adopted for GPA No. 960.*

4.3.2 Existing Environmental Setting - Population and Housing

The County of Riverside encompasses approximately 7,295 square miles (4,668,480 acres). Of this total, the majority (6,386 square miles, that is 4,087,300 acres) is unincorporated territory. The remaining approximately 12.5% encompasses 28 incorporated cities. Note, the cities of Eastvale and Jurupa Valley incorporated after the public circulation of the CEQA Notice of Preparation (NOP) for GPA No. 960 and thus post-date the baseline for this EIR (April 2009). Leaving the Eastvale and Jurupa Valley areas in this EIR ensures that the County of

Riverside unincorporated data represents a 'worst-case' scenario of greater extent than would occur if the cities were treated as separate municipalities.

With few exceptions, the County of Riverside's land use authority extends only to privately-held lands within the unincorporated portion of Riverside County. (Despite their inclusion in this EIR section, the County of Riverside has no jurisdictional authority over either the City of Eastvale or Jurupa Valley.) Other entities, such as the federal government, Indian Tribes and the State of California, control various lands within the boundaries of Riverside County. Some of these areas cover extensive portions of the county. For example, the Cleveland and San Bernardino National Forests, under the jurisdiction of the U.S. Forest Service, together encompass over 8% of unincorporated Riverside County territory. Sovereign lands controlled by Indian Nations within the county total another 2%. See Section 4.2 (Land Use) for further details on these land use issues. Although the County of Riverside has no jurisdiction over these lands, where applicable (for example, under 'Forestry,' in Section 4.5 (Agricultural and Forestry Resources)), this EIR analysis does nonetheless address potential impacts to these areas.

A. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they exist at the time of issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting constitutes the baseline physical conditions for which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein does not represent a single point in time (i.e., April 13, 2009). Rather, the data set that is best supported by substantial evidence is used.

For the baseline population, employment and housing data presented and used herein, the following sources were determined to be the best-supported substantial evidence available and were used for the reasons stated. Land use data and other environmental data sets are described in their respective chapters elsewhere. For example, see Section 4.2 for additional land use details.

The population, jobs and housing data presented in this subsection were developed pursuant to proposed General Plan Appendices E-1 and F-1. The land use-based data and associated build out projections use these documents in conjunction with GIS-based acreage and land use data for the current General Plan, inclusive of all approved General Plan Amendments through 2009. Though extending past the April 2009 NOP date, this point in time is used to capture the full cycle of General Plan Amendments, which typically only occur quarterly. All land-use based data and projections made for GPA No. 960 reflect proposed changes to this same baseline data set.

As indicated in General Plan Appendix F-1, all demographic (as opposed to land use) based projections and modeling used herein are based on the Board of Supervisors-approved Riverside County Projections for 2010 (RCP-10), unless noted otherwise. This 2010 data set is used because it is a more accurate reflection of Riverside County conditions than the next-prior available data set, which was the 2007 RCP. (No official RCP was issued for 2008 or 2009). RCP-10 was also used because (unlike 2010 U.S. Census data), it is consistent with the baseline data used in other areas, for example the traffic modeling assumptions used in RIVTAM, Riverside County's new, completely revised and updated countywide traffic model. In cases where demographic data from before April 2009 is used, it generally represents a 'worst-case' scenario because it reflects conditions in which rapid near-term growth was still being predicted. In other cases, however, data developed after April 2009 is used to more accurately reflect current expected growth rates.

B. Population

Population growth in Riverside County as a whole has been quite rapid over the past two decades. As reported in proposed General Plan Appendix F-1, the population grew from approximately 1.2 million 1990 to nearly 2.1 million as of January 1, 2008. Riverside County's population is now larger than that of ten states in the nation and it is now the eleventh-most populous county in the United States. Population grew most markedly after the 2000 U.S. Census. Between 2000 and 2008, Riverside County's population increased by over a half million people, making it one of the fastest growing metropolitan areas in the United States for that period. The majority of the population growth has been from migration into Riverside County as people relocated from adjacent counties, such as Los Angeles, San Diego and Orange Counties. In 2007, the unincorporated portion of Riverside County had a population of 537,600 persons. As illustrated in Table 4.3-A (Population Growth Trends, 1997-2007), between 1997 and 2007, the population of unincorporated Riverside County increased by 26.7%.

Table 4.3-A: Population Growth Trends, 1997-2007

Region	1997 (people)	2007 (people)	Change	
			Total	Percent
Unincorporated Riverside County *	393,900	537,600	+143,700	+26.7 %
Riverside County (Total) **	1,420,600	2,034,800	+614,200	+30.2 %

* The Unincorporated Riverside County total includes the now incorporated population of the City of Eastvale (incorporated in 2010) and the City of Jurupa Valley (incorporated in 2011).

** Includes both unincorporated Riverside County and cities within the county (as of January 2008).
All values rounded to nearest 100.

Source: Riverside County Center for Demographic Research, 2008 Riverside County Progress Report, 2008.

C. Housing

Housing has been the major driver of growth in Riverside County between 2000 and 2009. As indicated in Table 2 of proposed Appendix F-1, during this period Riverside County's housing stock grew by more than 34% (roughly 199,700 units). Household (i.e., occupied housing unit) growth during this same period generally paralleled housing growth with approximately 171,400 new households. Average household size also increased steadily during that time, from 2.49 persons per household in 1990 to a peak of 3.09 persons per household in 2004. Since the 2004 peak, average household size has declined slightly and stood at 3.06 persons per household as of 2009.

The demand for housing in Riverside County is largely a demand for single-family homes in affordable price ranges. Accordingly, roughly 83% of the housing units added between 2000 and 2009 were single-family detached units. Only approximately 33,600 of the new units added during this period were other housing types, such as condominiums and townhomes (i.e., single-family attached units), apartment complexes (i.e., multiple-family units) and mobile homes.

Since 2006, however, housing demand and home values have been greatly affected by changes in the national and local economies, as well as mortgage and banking industry changes. As a result, since 2006, the vacancy rate of existing homes has increased, while the construction of new homes has dropped. This downturn in housing ~~starts~~ has also affected employment in the region, as many construction jobs were lost.

Table 4.3-B: Housing Growth Trends, 1990-2007

Region	1990 (units)	2007 (units)	Change	
			Total	Percent
Unincorporated Riverside County *	161,400	200,900	+39,500	+19.7
Riverside County **	483,800	753,800	+269,900	+35.8

* The Unincorporated Riverside County total includes housing units from the now incorporated City of Eastvale (incorporated in 2010) and the City of Jurupa Valley (incorporated in 2011).

** Includes both unincorporated Riverside County and cities within the county (as of January 2008).
All values rounded to nearest 100.

Source: Riverside County Center for Demographic Research, 2008 Riverside County Progress Report, 2008.

Table 4.3-C: Housing Unit Building Permits Issued, 1990-2012

Year	Single Family Structures	All Multi-Family Structures	Total Units
1991	6,900	2,383	9,283
1992	7,627	593	8,220
1993	7,004	270	7,274
1994	7,650	365	8,015
1995	~~6,739~~ *7,378*	~~67~~ *182*	~~6,806~~ *7,560*
1996	~~7,053~~ *7,127*	~~487~~ *472*	~~7,540~~ *7,599*
1997	~~8,770~~ *8,042*	~~977~~ *938*	~~9,747~~ *8,980*
1998	~~10,643~~ *9,671*	~~1,884~~ *1,868*	~~12,527~~ *11,539*
1999	~~12,490~~ *11,823*	~~1,664~~ *1,472*	~~14,154~~ *13,295*
2000	13,323	1,702	15,025
2001	16,778	2,234	19,012
2002	20,912	1,343	22,255
2003	25,424	4,929	30,353
2004	29,182	4,264	33,446
2005	30,350	4,023	34,373
2006	~~20,958~~ *20,882*	~~3,885~~ *3,883*	~~24,843~~ *24,765*
2007	~~9,790~~ *9,717*	~~2,178~~ *2,617*	~~11,968~~ *12,334*
2008	*3,820*	*1,943*	*5,763*
2009	*3,406*	*666*	*4,072*
2010	*4,027*	*520*	*4,547*
2011	*2,275*	*989*	*3,264*
2012	*3,107*	*945*	*4,052*

Source: Riverside County Center for Demographic Research, 2008 and updated per Riverside County Progress Report, 2013.

Based on an allocation process initiated by the California Department of Finance and further refined by the Southern California Association of Governments (SCAG), as well as the Western Riverside Council of Governments (WRCOG) and the Coachella Valley Association of Governments (CVAG), the County of Riverside was tasked with a "fair share" target for the provision of housing in the region. According to the State of California, the "fair share" of regional housing is the number of additional dwelling units that would be required to accommodate the anticipated growth in households, replace expected demolitions and conversion of housing units to non-housing uses and achieve a future vacancy rate that allows for the healthy functioning of the housing market. These RHNA targets were projected for the period ending July 2014 *(4th cycle)*. According to the RHNA, Riverside County is projected to need a total of 57,172 additional housing units by 2014, with roughly 75% of the units located in western Riverside County and the remaining 25% in the Coachella Valley region of the county. Housing needs broken down by income group are as shown in Table 4.3-D (Regional Housing Needs Assessment, 2006-2014).

Although Riverside County contains large amounts of vacant land, the suitability of such lands can vary greatly from one location to another and a variety of physical, environmental and economic constraints affect were new homes can actually be built. For example, some areas are already developed or "built out," while others must be set aside for roads, parks, water storage facilities and other infrastructure. Some areas contain sensitive biological

resources that must be protected; other areas are underlain by seismic faults that would be hazardous to build on. These types of constraints all affect the potential housing capacity achievable with Riverside County.

Table 4.3-D: Regional Housing Needs Assessment, 2006-2014

Region	Total Adjusted Need	Income Category			
		Very Low	Low	Moderate	Above Moderate
WRCOG Area* (Western Riverside County)	43,114	10,704	6,939	7,827	17,643
CVAG Area (Coachella Valley Region)	14,058	3,247	2,263	2,615	5,933
Unincorporated Riverside County - Total	57,172	13,952	9,202	10,442	23,576

* WRCOG data adjusted to equal Total Adjusted Need Adopted. SCAG data did not equal the sub-region total.
Data includes housing needs for the cities of Menifee and Wildomar, which incorporated in 2008.
Source: SCAG, Final Regional Housing Needs Assessment, June 2007.

D. Employment

Table 4.3-E (Annual Average Payroll Employment by Industry, Riverside County *2004-2013* ~~1999-2007~~ shows average annual employment by industry for Riverside County for *2004* ~~1999~~ through *2013* ~~2007~~ as reported by the California Employment Development Department (CEDD). These figures represent CEDD estimates of the number of jobs in Riverside County for which workers are receiving a wage or salary. These figures do not include self-employed people or military personnel. *According to the American Community Survey (2008-2012), approximately 71,000 workers are self-employed in Riverside County and approximately 4,500 in military service.* ~~According to the 2000 Census, there were approximately 53,000 self-employed people working in Riverside County and 2,400 people in military service.~~ In a small number of cases, more than one job is held by a single person. Based on statistical analysis of U.S. Census and CEDD data performed by the RCCDR, the number of multiple job holders is assumed to be minimal.

Employment in Riverside County rose by *32,300 jobs between 2004 and 2013* ~~196,500 between 1999 and 2007~~. Of this growth, roughly 85% was concentrated in *four* ~~five~~ industrial sectors: *Personal, Medical, and Other Services (+37,000); Local Government (+11,400); Transportation, Warehousing and Public Utilities (+10,400); and Retail Trade (+5,700)* ~~Business-Related Services (26,100); Construction (26,200); Retail Trade (30,200); Personal, Medial and Other Services (59,200); and Local Government (25,400~~). *The Construction sector had the largest decrease in jobs, at a loss of 28,000 employees.* A full breakdown of job growth by sector is present in Table 4.3-E, below.

Table 4.3-E: Annual Average Payroll Employment by Industry, Riverside County, 2004-2013

Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Basic Subtotal	**192,200**	**203,100**	**216,500**	**217,900**	**206,200**	**187,300**	**182,300**	**185,200**	**190,200**	**198,100**
Farm	15,100	15,000	14,200	13,000	13,100	12,400	12,400	12,400	12,900	12,400
Natural Resources and Mining	500	600	700	700	500	500	400	400	400	300
Manufacturing	50,900	53,400	57,000	54,400	48,400	39,000	37,900	38,600	39,500	39,100
Transportation, Warehousing & Public Utilities	13,600	15,700	17,000	20,900	21,200	19,700	19,400	20,200	21,100	24,000
Wholesale Trade	16,800	18,400	20,500	21,100	20,400	18,700	19,100	19,700	20,600	22,300
Finance, Insurance and Real Estate	20,800	22,200	23,600	23,000	22,300	20,700	19,300	18,600	19,300	20,000
Business Related Services	54,000	57,100	62,600	63,000	58,000	53,600	50,300	52,200	53,900	57,400
Federal Government	6,600	6,600	6,600	6,400	6,600	6,900	7,600	7,000	6,800	6,800
State Government	13,900	14,100	14,300	15,400	15,700	15,800	15,900	16,100	15,700	15,800
Population-Serving Subtotal	**355,500**	**380,700**	**398,500**	**392,700**	**377,200**	**350,900**	**343,400**	**355,700**	**364,200**	**381,900**
Construction	70,400	78,400	80,700	68,900	54,700	40,400	35,400	34,100	35,200	42,400
Retail Trade	76,300	82,100	85,900	88,000	84,900	78,800	78,500	81,600	81,600	82,000

Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Personal, Med. and Other Services*	131,600	138,100	143,500	148,700	149,300	145,100	143,900	148,900	157,800	168,900
Local Government	77,200	82,100	88,400	87,100	88,300	86,600	85,600	91,100	89,600	88,600
Grand Total	**547,700**	**583,800**	**615,000**	**610,600**	**583,400**	**538,200**	**525,700**	**540,900**	**554,400**	**580,000**
Percent Basic	35.09%	34.79%	35.20%	35.69%	35.34%	34.80%	34.68%	34.24%	34.31%	34.16%
Percent Pop.-Serving	64.91%	65.21%	64.80%	64.31%	64.66%	65.20%	65.32%	65.76%	65.69%	65.84%

* Includes: "educational and health services," "accommodation and food services" and "other services."
Source: California Employment Development Department, 2014 ~~2008.~~

~~Table 4.3-E: Annual Average Payroll Employment by Industry, Riverside County 1999-2007~~

~~Sector~~	~~1999~~	~~2000~~	~~2001~~	~~2002~~	~~2003~~	~~2004~~	~~2005~~	~~2006~~	~~2007~~
~~**Basic Subtotal**~~	~~**162,000**~~	~~**171,400**~~	~~**172,200**~~	~~**177,800**~~	~~**187,100**~~	~~**192,200**~~	~~**203,100**~~	~~**216,500**~~	~~**217,500**~~
~~Farm~~	~~17,300~~	~~17,600~~	~~16,700~~	~~16,200~~	~~16,200~~	~~15,100~~	~~15,000~~	~~14,200~~	~~13,700~~
~~Natural Resources and Mining~~	~~500~~	~~500~~	~~500~~	~~500~~	~~500~~	~~500~~	~~600~~	~~700~~	~~700~~
~~Manufacturing~~	~~49,400~~	~~51,800~~	~~50,600~~	~~49,800~~	~~50,000~~	~~50,900~~	~~53,400~~	~~57,000~~	~~54,900~~
~~Transportation and Public Utilities~~	~~10,200~~	~~10,200~~	~~10,500~~	~~10,800~~	~~12,300~~	~~13,600~~	~~15,700~~	~~17,000~~	~~18,300~~
~~Wholesale Trade~~	~~12,400~~	~~13,500~~	~~15,000~~	~~16,300~~	~~16,300~~	~~16,800~~	~~18,400~~	~~20,500~~	~~21,200~~
~~Finance, Insurance and Real Estate~~	~~15,700~~	~~16,000~~	~~16,800~~	~~17,600~~	~~19,500~~	~~20,800~~	~~22,200~~	~~23,600~~	~~23,100~~
~~Business Related Services~~	~~37,900~~	~~42,200~~	~~42,500~~	~~46,500~~	~~52,000~~	~~54,000~~	~~57,100~~	~~62,600~~	~~64,000~~
~~Federal Government~~	~~6,400~~	~~6,800~~	~~6,300~~	~~6,300~~	~~6,400~~	~~6,600~~	~~6,600~~	~~6,600~~	~~6,600~~
~~State Government~~	~~12,200~~	~~12,800~~	~~13,300~~	~~13,800~~	~~13,900~~	~~13,900~~	~~14,100~~	~~14,300~~	~~15,000~~
~~**Population-Serving Subtotal**~~	~~**273,800**~~	~~**294,100**~~	~~**314,600**~~	~~**332,600**~~	~~**351,500**~~	~~**384,500**~~	~~**417,200**~~	~~**431,500**~~	~~**414,800**~~
~~Construction~~	~~43,700~~	~~48,400~~	~~53,400~~	~~55,000~~	~~60,800~~	~~70,400~~	~~78,400~~	~~80,700~~	~~69,900~~
~~Retail Trade~~	~~57,300~~	~~60,000~~	~~62,400~~	~~66,200~~	~~70,000~~	~~76,300~~	~~82,100~~	~~85,900~~	~~87,500~~
~~Personal, Med. and Other Services*~~	~~113,200~~	~~121,200~~	~~129,100~~	~~135,000~~	~~144,700~~	~~160,600~~	~~174,600~~	~~180,900~~	~~172,400~~
~~Local Government~~	~~59,600~~	~~64,500~~	~~69,700~~	~~76,400~~	~~76,000~~	~~77,200~~	~~82,100~~	~~84,000~~	~~85,000~~
~~***Grand Total***~~	~~***435,800***~~	~~***465,500***~~	~~***486,800***~~	~~***510,400***~~	~~***538,600***~~	~~***576,700***~~	~~***620,300***~~	~~***648,000***~~	~~***632,300***~~
~~Percent Basic~~	~~37.20%~~	~~36.80%~~	~~35.40%~~	~~34.80%~~	~~34.70%~~	~~33.30%~~	~~32.70%~~	~~33.40%~~	~~34.40%~~
~~Percent Pop.-Serving~~	~~62.80%~~	~~63.20%~~	~~64.60%~~	~~65.20%~~	~~65.30%~~	~~66.70%~~	~~67.30%~~	~~66.60%~~	~~65.60%~~

~~* Includes: "health care and social assistance," "accommodation and food services" and "other services."~~
~~Source: California Employment Development Department, 2008.~~

For analysis purposes, the above industry groups are sorted into two broad categories: "Basic" and "Population Serving." Basic industries are those driven primarily by factors broader than local consumption demand. A common example of a basic industry is a manufacturing firm that provides goods that are consumed outside of the region. Basic industries create new income for an area and typically support spin-off industries. Population-serving industries, on the other hand, are those driven primarily by the demands of local population or consumers. Population-serving industries provide goods and services needed by the population of the region it serves. A retail store and a dentist office are examples of population-serving businesses. Since population-serving industries rarely grow significantly beyond the size of the resident population, the strength of a local economy is often measured by the size of its basic industries.

According to Table 4.3-E statistics, both basic and population-serving employment increased over the last decade; however, population-serving employment increased at a faster rate. Hence, as a share of total employment, basic employment in Riverside County has *declined slightly from 35.09% in 2004 to 34.16% in 2013, whereas population-serving jobs increased from 64.91% to 65.84%.* ~~37.2% in 1999 to 34.4% in 2007, whereas population-serving jobs increased from 62.8% to 65.6%.~~ Of the high-growth industries cited in the table, all but one of them were population-serving.

4.3.3 Policies and Regulations Addressing Population and Housing

A. State Regulations

California Government Code (CGC) Sections 65580-65589.8: These sections of the CGC require the preparation of a Housing Element as one of seven elements mandated for a jurisdiction's general plan. Specifically, the law requires that the element provide "an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives and scheduled programs for the preservation, improvement and development of housing." CGC Section 65588 requires that housing elements be updated not less frequently than every five years. Each revision must describe the progress made on achieving the goals and objectives of the previous housing element.

State law requires that the Housing Element provide for the development of local housing programs designed to meet Riverside County's "fair share" of housing needs for all income groups, as assigned by SCAG, WRCOG and CVAG, based off the State Department of Finance's projections of statewide housing needs as apportioned by the State Department of Housing and Community Development. A jurisdiction's "fair share" of the regional housing need is the number of additional dwelling units that would be required to accommodate the anticipated growth in households, replace expected demolitions and conversion of housing units to non-housing uses and achieve a future vacancy rate that allows for the healthy functioning of the housing market.

The residential character of Riverside County is, to a large extent, determined by the variety of its housing, their locations and their maintenance levels. The General Plan Housing Element forms an official response to the need to provide housing for all economic segments of the population. It establishes policies that will guide County of Riverside government decision-making and sets forth an action plan to implement housing goals through 2014.

B. County Regulations

The following existing regulations and policies are intended to guide residential development within Riverside County to ensure that population and housing needs are met. These policies are not part of proposed GPA No. 960. Rather, they are policies that have been approved by the County of Riverside as separate prior discretionary actions.

Ordinance No. 588 - Home Mortgage Finance Program: This ordinance establishes a home mortgage finance program pursuant to Part 5 of Division 31 of the California Health and Safety Code. Under the program, the County of Riverside issues revenue bonds to provide funds to be used to provide "housing which is affordable by persons on the lower end of [the] purchasing spectrum."

Ordinance No. 760 – Mobile Home Park Rent Stabilization: This ordinance is aimed at facilitating and encouraging "fair bargaining between mobile home owners and park owners in order to achieve mutually satisfactory agreements regarding space rental rates." The goal is to preserve the value of these parks for their owners while also preserving the value of the mobile homes for their owners and preventing "unreasonable space rental adjustments." The ordinance applies to "all mobile home residential rental spaces located within the unincorporated area of Riverside County, except if otherwise exempt" for various reasons. Also, mobile home parks constructed after January 1, 1990, are exempt from the ordinance.

C. Existing Riverside County General Plan Policies

The following existing General Plan polices address various facets of planning and regulation related to population and housing within Riverside County.

1. Land Use Element (LU) Policies

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

Policy LU *8.1* (Previously LU 7.1): Accommodate the development of a balance of land uses that maintain and enhance the county's fiscal viability, economic diversity and environmental integrity.

2. Circulation Element (C) Policies

Policy C 1.1: Design the transportation system to respond to concentrations of population and employment activities, as designated by the Land Use Element and in accordance with the Circulation Plan, Figure C-1.

Policy C 1.4: Utilize existing infrastructure and utilities to the maximum extent practicable and provide for the logical, timely, and economically efficient extension of infrastructure and services.

Policy C 1.5: Evaluate the planned circulation system as needed to enhance the arterial highway network to respond to anticipated growth and mobility needs.

Policy C 3.16: Dedicate necessary rights-of-way as part of the land division and land use review processes.

D. Proposed New or Revised Riverside County General Plan Policies

The following proposed revisions to General Plan polices address various facets of population and housing planning and regulation within Riverside County.

1. Land Use Element (LU) Policies

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children)~~, transportation systems and fire/police/medical services.

Policy LU *9.4* (Previously LU 8.4): Allow development clustering and/or density transfers in order to preserve open space, natural resources, *cultural resources,* and/or biologically sensitive resources. *Wherever possible, development on parcels containing 100-year floodplains and blue line streams and other higher-order watercourses and areas of steep slopes adjacent to them shall be clustered so as to keep development out of the watercourse and adjacent steep slope areas, and to be compatible with other nearby land uses.*

2. Circulation Element (C) Policies

Policy C 2.4: The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service *targets* ~~standards~~.

Policy C 7.9: Review development applications in cooperation with RCTC and as appropriate, to identify the precise location of CETAP corridors and act to preserve such areas from any permanent encroachments, pending dedication or acquisition. *Coordinate with RCTC to evaluate and update the CETAP corridors periodically as conditions warrant.*

4.3.4 Thresholds of Significance for Population and Housing

The project would result in a significant impact on population or housing if it would:

A. Induce substantial population growth in an area, either directly (e.g. by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure).

B. Displace substantial numbers or existing housing, necessitating the construction of replacement housing elsewhere.

C. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.3.5 Effect of GPA No. 960 on the General Plan and on Population and Housing

The project, GPA No. 960, would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and standards and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. This section summarizes population and housing-related changes to the General Plan and discusses the effects of these proposed changes on population and housing. Specific impacts and mitigation are then evaluated according to identified significance thresholds in the subsequent section (4.3.6).

It should be noted that the General Plan's Housing Element is updated according to a separate cycle in conjunction with the Regional Housing Needs Analysis. As such, the most recent Housing Element revision was adopted June 25, 2013, pursuant to GPA No. 1097. For this reason, no changes to the current Housing Element are proposed as part of GPA No. 960.

A. Proposed Changes to the General Plan

The existing General Plan addresses population and housing issues in the Land Use (LU) Element, the Housing Element and within individual Area Plans. GPA No. 960 includes a num0ber of changes that affect land use within Riverside County and, indirectly, population and housing as well. As noted above, however, it does *not*

include any changes to the Housing Element itself. For text of the specific General Plan policy changes included as part of GPA No. 960, see Section 4.3.3.C, above.

1. General Plan Appendix E-1: Socioeconomic Buildout Assumptions and Methodology

This appendix to the General Plan outlines both the procedures used to turn land use designations and acreages into theoretical socioeconomic projections. These specifically include assumptions for residential land use (e.g., dwelling units per acre, persons per dwelling unit), commercial and industrial (e.g., gross to net acreage, floor-area-ratio, jobs per square foot, etc.) and other uses. The appendix also includes details on specific assumptions associated with policy areas, community centers, rural village overlays and other special planning areas. As part of GPA No. 960, all of the assumptions and data in this appendix was examined and, where necessary, updated or expanded. In addition, all of the build out projections included in the General Plan (Land Use Element and the Area Plans) were recalculated based on the methods, assumptions and factors updated in Appendix E-1 (see below). These changes directly affect the number of housing units assumed to result from various land use designations and policies.

2. General Plan Appendix F-1: Population and Employment Forecasts

This appendix was also updated as part of GPA No. 960. Appendix F-1 presents the socioeconomic forecasts developed for the County of Riverside by the Riverside County Center for Demographic Research (RCCDR) and also presents SCAG data for the region. While Appendix E-1 addresses developing theoretical build out projections based on *land use* specifically, the forecasts of Appendix F-1 are based on demographic data, socioeconomic and population trends (birth and death rates, immigration, emigration, etc.) and other factors independent of land use. Simply put, this demographics data indicates *how many* people will live and work in Riverside County in the future. The land use plans of the General Plan and its Area Plans indicate *where* these people will live and work. The demographic data presented in Appendix F-1 directly indicates the populations expected to occur in Riverside County.

3. Land Use and Socioeconomic Build Out Results

As noted above, as part of GPA No. 960 all of the land use-based and demographic data in the General Plan was updated to reflect RCCDR demographic forecasts for Riverside County (per Appendix F-1) and land use assumptions (per Appendix E-1). In particular, this includes all of the land use-related build out projections included in the General Plan. Both the Land Use Element and the individual Area Plans were recalculated based on the methods, assumptions and factors updated in Appendix E-1. These updates were necessary both to reflect updated Appendix E-1 assumptions and to address the various changes to land use proposed by GPA No. 960 (e.g., changes to land use designations, policy areas, rural village overlays and study areas, etc.). These changes enable the General Plan to more accurately reflect the theoretical populations, dwelling units and jobs anticipated from build out of the General Plan, as amended by GPA No. 960. The project includes updated General Plan Tables LU-1, LU-2, LU 4 and LU 5, as well as similar tables from the individual Area Plans. See the general summary presented in Table 4.3-F (Theoretical Build Out Projections (Land Use-Based Capacities)) of this EIR. These tables include dwelling units totals which indicate the specific area's total *capacity* for possible residences.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies

and others as described in Section 3.0 (Project Description) of the EIR. As the specific effect of these policies on housing and population cannot be foreseen at this time, they are not analyzed further in this section.

B. Analysis of GPA No. 960 Effects on Population and Housing

In order to analyze project effects on population and housing, the Riverside County Planning Department worked with RCCDR to develop several socioeconomic scenarios for future growth within the county. These included build out projections for the existing (2008) General Plan, as well as for the General Plan as it would be if GPA No. 960 is adopted. These are referred to as the (existing) General Plan and "project" build out scenarios, respectively, throughout this EIR. As Riverside County build out is currently projected to be reached around 2060, a second set of project projections were also developed for the General Plan at horizon year (2035) to enable comparison with the current (2008) SCAG Regional Transportation Plan.

For existing conditions, values from the official "2010 Riverside County Projections" (RCP-10) were used, except jobs data was taken from 2008 (the most recent year available from the California Department of Finance). RCP-10 was used instead of the prior projections from 2007 (RCP-07) because it was determined that due to the economic slow-down since 2007, the RCP-07 projections over-estimated expected growth. Use of such inflated data would have caused the under-reporting of changes, and hence potential impacts, associated with the project. In this case, use of RCP-10 represents a more conservative, 'worst-case' scenario that is appropriate for a programmatic EIR.

Table 4.3-F, below, shows the acreage covered by each of the General Plan LUDs within unincorporated Riverside County under the existing General Plan and as it would be as a result of adoption of the project. From these land uses and acreages, socioeconomic projections were made for dwelling units, populations, jobs, etc. It should be noted that both scenarios in the table represent theoretical build out of Riverside County based on the mapped LUDs and mid-point values established in General Plan Appendix E-1. This data is a demonstration of planned county capacity, not necessarily the actual build out conditions that would exist in 2060. Since *the location* in which a given population settles is, in part, affected by this available land use capacity, the data nevertheless provides an important perspective on the demographic changes expected in Riverside County over time, both with and without the project.

As shown in Table 4.3-F, the existing General Plan's mapped Land Use Designations (LUDs) for the roughly 4,010,000 acres of land in unincorporated Riverside County would yield approximately 520,900 dwelling units at build out. Through the use of population growth factors developed for each individual Area Plan by the RCCDR, as well as employment and other factors, at build out the existing (2008) General Plan would yield roughly an additional 1,702,700 people and add 561,500 jobs. For the General Plan as amended per GPA No. 960, future development projections indicate its build out would yield approximately 520,900 dwelling units, 1,702,700 people and 561,800 jobs.

In analyzing the resultant data, several key trends were noted. First, a comparison between the build out projections for the existing General Plan and project scenarios indicates the net result of the project would be to slightly *decrease* the planned capacity of Riverside County, i.e., the number of people, homes and jobs expected in Riverside County at full build out (2060). Specifically, housing would be decreased by 2.0%, population by 1.4% and employment by 5.6%. These decreases are due primarily to GPA No. 960's proposed revisions to existing overlays, policy areas and study areas in the General Plan. As detailed in Section 3.0 and Section 4.2, a number of these overlays and policy areas where found to have planned for more urban development than could be supported for a given area due to various factors (e.g., distance from existing urban centers or infrastructure, lack of potable water, presence of sensitive habitat, etc.) GPA No. 960 proposals would correct this issue with the resultant decreases as seen in Table 4.3-G (Comparison of Regional Projections), particularly for employment.

Second, as with the existing General Plan, the amended General Plan would accommodate a substantial amount of growth within unincorporated Riverside County between now and build out. The housing supply would more than double under both scenarios. Population would grow even more, by roughly 269% and 264%, respectively, and employment would more than quadruple for both scenarios. The existing General Plan shows jobs increasing to nearly 500,000. Under the project scenario, jobs would increase slightly less, to roughly 462,000. This is still, however, a 463% increase over existing levels.

Third, it is important to note the results of the interim Year 2035 analysis (see Table 4.3-G) which can be compared to SCAG forecasts. The data developed by RCCDR indicates that despite recent economic conditions, growth is nonetheless anticipated for all three sectors – jobs, housing and population.

Table 4.3-F: Theoretical Build Out Projections (Land Use-Based Capacities)

Area Plan	EXISTING (2008) GENERAL PLAN				GPA 960 - PROPOSED GEN. PLAN				CHANGES BETWEEN EXISTING AND PROPOSED GEN PLANS		
	acres	du's	pop.	jobs	acres	du's	pop.	jobs	du's (% change)	pop. (% change)	jobs (% change)
Eastvale[1]	8,108	21,094	73,944	16,788	8,001	20,947	73,429	16,787	- 147 (- 0.7%)	- 515 (- 0.7%)	- 1 (0.0%)
Elsinore [2]	80,699	15,483	46,775	14,950	80,685	15,401	46,526	13,670	- 83 (-0.5%)	- 250 (- 0.5%)	- 1,280 (-8.6%)
Harvest Vlly/ Winchester	29,084	35,272	97,509	42,078	29,085	35,029	96,838	42,070	- 242 (-0.7%)	- 670 (- 0.7%)	- 8 (0.0%)
Highgrove	3,956	5,374	16,389	4,009	3,952	5,370	16,375	4,009	- 5 (- 0.1%)	- 14 (- 0.1%)	0 (0.0%)
Jurupa	28,219	41,389	144,694	99,593	28,260	41,194	144,013	99,825	-195 (- 0.5%)	- 681 (- 0.5%)	232 (0.2%)
Lk Mathews/Woodcrest	49,690	22,701	72,029	4,967	49,702	22,699	72,023	5,059	- 2 (0.0%)	- 6 (0.0%)	91 (1.8%)
Lakeview/Nuevo	27,762	41,301	125,946	14,837	27,746	41,275	125,870	18,636	- 25 (- 0.1%)	- 77 (- 0.1%)	3,799 (25.6%)
Mead Vlly	20,312	11,472	41,305	27,995	20,311	11,373	40,949	27,955	- 99 (- 0.9%)	- 355 (- 0.9%)	- 40 (- 0.1%)
San Jacinto Valley	53,278	24,771	66,360	17,914	53,274	24,333	65,188	18,010	- 438 (- 1.8%)	- 1,173 (- 1.8%)	96 (0.5%)
Southwest	137,759	36,735	110,628	28,345	137,780	37,256	112,197	28,615	521 (1.4%)	1,569 (1.4%)	270 (1.0%)
Sun City/ Menifee [2]	3,916	1,424	3,395	4	3,910	1,421	3,388	4	- 3 (- 0.2%)	- 7 (- 0.2%)	0 (0.0%)
Temescal Cyn	43,306	16,871	57,700	20,784	43,304	16,923	57,877	20,775	52 (0.3%)	177 (0.3%)	- 8 (0.0%)
Western Riverside County Subtotal	*486,088*	*273,886*	*856,674*	*292,264*	*486,010*	*273,220*	*854,672*	*295,415*	*- 665 (- 0.2%)*	*- 2,003 (- 0.2%)*	*3,151 (1.1%)*
The Pass	65,324	17,956	49,127	4,467	65,327	15,161	41,481	4,480	-2,795 (- 15.6%)	- 7,646 (- 15.6%)	13 (0.3%)
Reche Cyn/Badlands	49,868	1,983	5,707	5,598	49,878	1,947	5,604	5,594	- 36 (- 1.8%)	- 103 (- 1.8%)	- 4 (- 0.1%)
REMAP	511,850	34,408	89,565	37,463	511,855	25,418	66,163	4,842	- 8,990 (- 26.1%)	-23,402 (- 26.1%)	-32,621 (-87.1%)
Central Riverside County Subtotal	*627,042*	*54,347*	*144,398*	*47,528*	*627,060*	*42,526*	*113,247*	*14,916*	*-11,821 (- 21.8%)*	*-31,15 (- 21.6%)*	*-32,612 (-68.6%)*
Desert Center	185,720	8,705	29,854	33,270	185,720	8,705	29,853	33,270	0 (0.0%)	- 1 (0.0%)	0 (0.0%)
E. Coachella Valley	421,237	87,551	409,213	115,328	421,252	89,282	417,303	113,589	1,731 (2.0%)	8,090 (2.0%)	- 1,739 (- 1.5%)

Area Plan	EXISTING (2008) GENERAL PLAN				GPA 960 - PROPOSED GEN. PLAN				CHANGES BETWEEN EXISTING AND PROPOSED GEN PLANS		
	acres	du's	pop.	jobs	acres	du's	pop.	jobs	du's (% change)	pop. (% change)	jobs (% change)
Palo Verde	280,761	14,682	41,845	29,040	281,401	14,915	42,508	27,054	233 (1.6%)	663 (1.6%)	-1,986 (-6.8%)
W. Coachella Valley	236,880	59,639	145,043	77,524	236,894	59,691	145,168	77,545	51 (0.1%)	125 (0.1%)	21 (0.0%)
Far E. Desert (Non Area Plan)	1,772,650	32,560	99,910	0	1,772,616	32,559	99,908	0	-1 (0.0%)	-2 (0.0%)	0 (0.0%)
Eastern Riverside County Subtotal	*2,897,249*	*203,138*	*725,864*	*255,162*	*2,897,883*	*205,151*	*734,739*	*251,458*	*2,014 (1.0%)*	*8,875 (1.29%)*	*- 3,704 (- 1.5%)*
Countywide Grand Total	**4,010,378**	**531,370**	**1,726,937**	**594,955**	**4,010,953**	**520,897**	**1,702,658**	**561,789**	**- 10,472 (- 2.0%)**	**- 24,279 (- 1.4%)**	**- 33,166 (- 5.6%)**

Footnotes:
1. Eastvale Area Plan includes the City of Eastvale, which had not yet incorporated as of April 2009.
2. The cities of Wildomar and Menifee are omitted from these Area Plans, as they incorporated prior to April of 2009.

Source: Riverside County Center for Demographic Research, Base-Alt 2008 Scenario, 2010.

Table 4.3-G: Comparison of Regional Projections

STATISTIC	Existing Conditions[1]	RCP-10[2] Projection YEAR 2010	RCP-10 Projection YEAR 2035	SCAG RTP Projections YEAR 2035	Exist. Gen. Plan Build Out Capacity YEAR 2060[3]	Project/Gen. Plan Build Out Capacity YEAR 2060[3]
Population Total	**2,078,601**	**2,153,186**	**3,396,287**	**3,596,681**	**4,734,094**	**4,709,325**
Unincorporated[4]	553,461	468,016	909,072	1,243,632	1,727,427	1,702,658
Incorporated	1,525,140	1,685,170	2,487,215	2,353,049	3,006,667	3,006,667
Housing Units Total	**773,402**	**798,347**	**1,250,549**	**1,334,839**	**1,571,969**	**1,561,334**
Unincorporated[4]	206,954	171,932	324,571	444,020	531,532	520,897
Incorporated	566,448	626,415	925,978	890,819	1,040,437	1,040,437
Employment Total	**700,266**	**663,951**	**1,285,284**	**1,413,522**	**1,914,120**	**1,879,954**
Unincorporated[4]	107,887	99,794	283,203	337,971	595,955	561,789
Incorporated	592,379	564,157	1,002,081	1,075,551	1,318,165	1,318,165

Footnotes:
1. Data source: Riverside County Progress Report, 2009. Values reported for 2008; 2007 for jobs.
2. Data source: Riverside County Projections 2010 (RCP-10). Except, 2008 values for jobs, based on California Department of Finance data. Year 2010 wage and salaries employment data from California Employment Development Department, plus self-employment estimates from American Community Survey.
3. Estimated General Plan build out year.
4. Riverside County assumptions on cities' General Plans were used. Unincorporated Riverside County totals include the cities of Eastvale and Jurupa Valley since they incorporated after the NOP date for this EIR.

Source: Riverside County Center for Demographic Research, 2010, and sources noted in footnotes, above.

When compared to current SCAG forecasts, however, county growth under the project scenario would be less than that forecast by SCAG in the current (2008) Regional Transportation Plan (RTP). This indicates that future county growth accommodated by the project would not exceed that planned for regionally, nor would it cause excessive indirect growth-related effects to infrastructure, regional utilities or public services. See Section 5.0 (Mandatory CEQA Items) for further details and analysis of regional consistency, as well as growth-inducing effects.

At the Area Plan level, the proposed project would have very little effect on acreage. Three Area plans would slightly lose acreage (-4.1% for Eastvale, -5.7% for Highgrove and -3.3% for Lake Mathews/ Woodcrest Area Plan); four others would change by 0.5% or less and the rest would essentially have no change. In terms of dwelling units, the Pass Area Plan would lose roughly 15.6%, including nearly 2,800 Very Low Density Residential (VLDR) dwelling units (du). REMAP (the Riverside Environs Mountainous Area Plan) would show the greatest change, losing 26.1% of its dwelling unit capacity, nearly 5,600 du of Medium-Density Residential (MDR), 2,400 du of Medium-High Density Residential (MHDR) and 1,000 du of Estate Density Residential (Rural Community Foundation) (RC-EDR). These losses are mainly due to the elimination of the Aguanga and Anza Rural Village Study Areas, which were planned for higher intensities under the existing General Plan.

Similarly, trends for population changes are similar to those for residential build out. The Pass Area Plan would see roughly 7,600 fewer people than projected under the existing General Plan's build out. With roughly 23,400 fewer people, REMAP would see the largest reduction in population at build out.

For employment projections, REMAP in particular would also see significant capacity reductions; 87.1% fewer jobs than originally planned. This results from reductions in the overall amount of Commercial-Retail (CR) and Light Industrial (LI) land uses in the Area Plan, yielding a decrease in jobs of roughly 12,800 and 19,900, respectively. Two other Area Plans would also see lesser adjustments to employment projections. The Reche Canyon/Badlands Area Plan would see a 6.8% reduction in potential jobs, mainly due to reductions in acreage designated for Business Parks (BP). The Elsinore Area Plan would have roughly 1,100 fewer jobs due to reductions in CR acreage, yielding an 8.6% decrease, due mainly to the deletion of the excess capacity originally proposed for the El Cariso Rural Village Study Area.

4.3.6 Population and Housing - Impacts and Mitigation

A. Would the project induce substantial population growth in an area, either directly (e.g. by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?

Impact 4.3.A - Induce Direct or Indirect Population Growth: Future development consistent with the project would affect population growth both directly and indirectly. Overall, in terms of direct growth, the project's land use changes would serve to limit and slightly reduce the development capacity of Riverside County, yielding 1.4% less population growth than that projected for the existing General Plan. Projected reductions in dwelling units (- 2.0%) and, in particular, jobs, which would be reduced by 5.6%, would also indirectly limit population growth. Thus, overall growth rates associated with the project would not be increased over those proposed and planned for in the existing General Plan. Overall, the project represents a reduction in county capacity, yielding covers population growth forecasts, both compared to the existing General Plan and to current SCAG (2008 RTP) projections. Since the project's build out projections are for less population, housing and jobs than forecast under the existing General Plan and existing regional plans (SCAG RTP, etc.), project impacts on population growth, both direct and indirect, would be less than significant. Moreover, compliance with existing General Plan policies would further reduce the already insignificant impact associated with population growth.

1. Analysis of Impact 4.3.A

The General Plan is intended to serve as a guide to the future development occurring within Riverside County, outlining the uses considered appropriate for various regions and coordinating the provision of infrastructure with the protection of natural resources. Thus, as a plan, it is expected to deal with population growth. This is also true of the General Plan as it would exist as amended by GPA No. 960. Accordingly, since population growth is an intrinsic part of a general plan, the proposed project would be considered to cause "substantial" population growth: if any of its LUD changes, plans or policies would result in an increase in population beyond that already planned for and accommodated by the existing General Plan; if it would cause a growth rate in excess of that forecast in the existing General Plan; or, if it would do either of these relative to existing regional plans, such as the SCAG Regional Transportation Plan (RTP), etc.

As shown in Table 4.3-F, the project would not result in an increase in population directly at the countywide level. Rather, it plans for 1.4% fewer people than that of the existing General Plan. Nor would it do so indirectly; it also calls for 2.0% fewer dwelling units and 5.6% fewer employment uses. Thus, overall, population growth and its associated environmental effects would be similar to (or slightly less than) that already projected and analyzed for the existing General Plan (via EIR No. 441). In addition, population forecasts for the General Plan, as amended per GPA No. 960, would be less than that originally forecast for various regional plans, as shown in Table 4.3-G. Thus, the population growth associated with future development accommodated by the project also would not be substantial on this basis. (Also see Section 5.5 (Cumulative Impacts) for more on regional consistency).

An analysis was also made of actual population changes; that is the difference between existing (2008) and General Plan build out (2060) populations with and without the project. In terms of actual population growth, that data in Table 4.3-G indicates that that the project-amended General Plan would yield a population increase of roughly 1,149,200 people over approximately 52 years. This amounts to an annual growth rate of 3.99%. This annual rate of population increase is not considered substantial as it is in line with (actually, slightly less than) that currently projected under the existing General Plan (a 1,174,000 increase yielding an annual growth rate of

4.08%). For this reason, the increase in population over baseline conditions as a result of future development accommodated by the project is not considered "substantial."

In terms of direct population growth, on a local level no Area Plan would see a "substantial" population increase as a result of the project's changes. Only five Area Plans are forecast to see any population growth beyond that already planned in the General Plan. The Temescal Canyon and Western Coachella Valley Area Plans would add less than 0.5% each (177 and 125 additional people, respectively). The Southwest Area Plan (SWAP) would add roughly 1.4% (1,570) more people and Eastern Coachella Valley Area Plan (ECVAP) would add the most additional people: 8,090. This total, however, is still only 2.0% more than that already planned for ECVAP. Thus, this increase is not "substantial."

In terms of indirect population growth, as noted in Table 4.3-F, the project would result in an overall decrease in the number of dwelling units and employment uses (jobs) developed at General Plan build out in roughly 2060. At the local level, one Area Plan (ECVAP) would gain roughly 1,730 more dwelling units than originally planned. But, as already notes, this is only a 2% increase is not substantial growth. Two other Area Plans gaining dwelling units would see even smaller increases; 230 dwelling units for the Palo Verde Area Plan (a 1.6% increase) and 520 dwelling units for SWAP (a 1.4% increase). Similarly, three Area Plans would see small gains in terms of jobs; Lake Mathews/ Woodcrest Area Plan would gain 90 jobs (1.8% increase), the San Jacinto Valley Area Plan would gain roughly 100 jobs (0.5% increase) and SWAP would gain roughly 270 jobs (1.0% increase). Again, none of these increases would be considered "substantial."

One area, the Lakeview/Nuevo Area Plan (LVNAP), would gain nearly 3,800 additional jobs; an increase of 25.6%. This amount, however, is not expected to indirectly cause populations in the region to increase above or beyond those already forecast and accommodated by the revised General Plan, as the plan already provides sufficient housing capacity to readily house these workers in and around this Area Plan should they choose to move near their workplaces. For this reason, the project is not anticipated to result in a substantial indirect population growth in this area.

Lastly, as described in Section 3.0, the project includes several components that address large-scale development patterns, intensities and densities. These include the Good Hope and Meadowbrook Rural Village Land Use Overlays (RVOs) and the Lakeland Village and Northeast Business Park Policy Areas as well. Although these areas are being planned generally for increased urbanization, the data in Table 4.3-F (in which these new proposals are included in their respective Area Plans) shows that they do not contribute to any substantial population increases over those already planned under the existing General Plan for the reasons discussed above.

Thus, for all of these reasons, GPA No. 960 would not substantially increase population growth either locally or at the countywide level. And, overall, future development accommodated by the project would result in less than significant direct and indirect population growth impacts.

2. Regulatory Compliance for Impact 4.3.A

In addition to Housing Element requirements, under the existing General Plan the County of Riverside has implemented a number of policies and programs in regards to the population and housing. Given the broad scope of factors that affect population, housing and employment, many of the policies in the General Plan directly or indirectly address aspects of these issues. The Vision chapter of the General Plan summarizes the intricate impacts related to population growth the best. It points out that the General Plan was envisioned and crafted with the basic notion that Riverside County would see significant growth in its population over time. Thus, the focus of the discussion and policies in the General Plan is on the management and quality of this growth, rather than preventing growth within Riverside County all together. Additionally, the above analysis indicates that this

impact would be less than significant and hence no project-specific mitigation is needed. Thus, the following policies would further reduce or minimize this already insignificant impact. See Section 4.3.3.C for full text of each of these policies.

Policies LU 5.1, 5.2, 8.1 and 9.4: Policies LU 5.1 and 5.2 require development approval not exceed infrastructure support. Policy LU 8.1 ensures that growth does not infringe on necessary land uses, including rights-of-way and open space and Policy LU 9.4 allows clustering to facilitate growth without adversely affecting sensitive resources.

Policies C 1.1, 1.4, 1.5, 2.4, 3.16 and 7.9: Policies C 1.1, 1.4 and 1.5 require circulation infrastructure respond to growth needs. Policy C 2.4 requires new development to provide necessary circulation improvements to ensure adequate levels of service and Policies C 3.16 and 7.9 ensure that growth does not impinge upon lands needed for future circulation infrastructure.

3. Significance of Impact 4.3.A After Mitigation

For the reasons outlined above, future development accommodated by GPA No. 960 would have less than significant impacts on both direct and indirect population growth. In addition, compliance with the above-listed General Plan policies would further reduce or avoid the insignificant impacts associated with the project.

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Impact 4.3.B - Displace Residential Units: The project includes revisions to the existing General Plan that would affect the future development capacity of Riverside County. Future development pressure could result in redevelopment of existing uses, particularly in rural areas (e.g., agricultural lands and large-lot rural residential) and on under-utilized urban and suburban parcels. However, aerial analysis indicates that none of the areas proposed for land use changes under GPA No. 960 contain substantial numbers of existing houses whose loss would necessitate construction of replacement housing elsewhere. Thus, the project's effects on existing housing would be less than significant. Moreover, compliance with existing regulatory programs, including existing General Plan policies, would further reduce this already insignificant impact to housing inventory.

1. Analysis of Impact 4.3.B

The project includes revisions to the existing General Plan that would alter capacity and may affect future development. Future development pressure could result in redevelopment of existing uses, particularly in rural and agricultural areas, as well as on underutilized urban and suburban parcels. On a countywide level, the data presented in Section 4.3.5 shows that the build out capacity of the General Plan, even with the changes proposed by GPA No. 960 (see Table 4.3-F), would accommodate more dwelling units than needed on a demographic level (as per projections, see Table 4.3-G). In total, the analysis demonstrates that the project would neither displace substantial numbers of existing housing nor necessitate construction of replacement housing elsewhere.

As with all future development accommodated by the General Plan, it is expected that existing built land uses, including residences, would generally remain and that new development would occur predominantly on vacant or sparsely developed land because Riverside County's inventory of vacant land makes this type of new development generally more economical than redevelopment, particularly for the type of large-scale projects with the greatest potential for displacing substantial numbers of people or residences. Where occurring on vacant land, future development consistent with GPA No. 960 would not displace any existing residential units. A significant impact

would only occur where residences were displaced by development or redevelopment. As capacity (available homes) exceeds demand, it is not expected to cause displacement necessitating replacement construction elsewhere.

Additionally, since as demonstrated in Table 4.3-F, there would be sufficient space available within unincorporated Riverside County for the development of replacement housing without further displacement effects, it can reasonably be surmised that any potentially significant impacts associated with the construction of any replacement housing would be mitigated through the means proscribed in the original General Plan EIR No. 441 (and/or herein) for any other future residential development and as outlined for future development within this EIR as well (in particular as discussed under Section 4.2 of this EIR). The end result would be less than significant impacts to housing inventory and the people that occupy them.

2. Regulatory Compliance for Impact 4.3.B

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Thus, the following existing policies of the Riverside County General Plan would further reduce the already insignificant housing impacts. See Section 4.3.3.C for full text of each of these policies.

Policies LU 8.1 and 9.4: Policy LU 8.1 ensures that future development be developed in a balanced manner. Policy LU 9.4 allows clustering to facilitate growth without adversely affecting sensitive resources.

Policies C 2.4 and 7.9: Policy C 2.4 requires new development, which includes residential, to provide necessary circulation improvements to ensure adequate levels of service. Policy C 7.9 ensures that future development, which includes residential, does not impinge upon lands needed for future circulation infrastructure.

3. Significance of Impact 4.3.B After Mitigation

The above analysis indicates that future development accommodated by GPA No. 960 would have less than significant impacts on housing. It would not displace substation numbers of existing housing nor necessitate construction of replacement housing elsewhere. In addition, compliance with the above-listed existing General Plan policies would further reduce or avoid the insignificant impacts associated with the project.

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Impact 4.3.C - Displace People: The project includes revisions to the existing General Plan that would affect the future development capacity of Riverside County. In general, future development pressure could result in redevelopment of existing uses, particularly in rural areas (e.g., agricultural lands and large-lot rural residential) and on under-utilized urban and suburban parcels. However, none of the areas proposed for land use changes under GPA No. 960 contain substantial numbers of existing homes whose loss would displace substantial numbers of residents. Thus, the project's effects on residents would be less than significant. Moreover, compliance with including existing General Plan policies would further reduce this already insignificant impact.

1. Analysis of Impact 4.3.C

As outlined in Impact 4.3.B, the project includes revisions to the existing General Plan that alters the capacity of Riverside County and thus may affect future development. In general, future development pressure could result

in redevelopment of existing uses, particularly in rural and agricultural areas, as well as on underutilized urban and suburban parcels. On the countywide level, the data presented in Section 4.3.5 shows that the build out capacity of the General Plan, even with the changes proposed by GPA No. 960 (see Table 4.3-F), would accommodate more dwelling units than needed on a demographic level (as per projections, see Table 4.3-G). Thus, the analysis demonstrates that the project would neither displace substantial numbers of people nor necessitate construction of replacement housing elsewhere to house them.

As with all future development accommodated by the General Plan, it is expected that existing built land uses, including residences, would generally remain and that new development would occur predominantly on vacant or sparsely developed land, because Riverside County's inventory of vacant land makes this type of new development generally more economical than redevelopment, particularly for the type of large-scale projects with the greatest potential for displacing substantial numbers of people or residences. Where occurring on vacant land, future development consistent with GPA No. 960 would not displace any existing residents. A significant impact would only occur where existing residences were displaced by development or redevelopment. However, as capacity (available homes) exceeds demand, it is not expected to cause displacement necessitating replacement construction elsewhere.

Additionally, since as demonstrated in Table 4.3-F, there would be sufficient space available within unincorporated Riverside County for the development of replacement housing without further displacement effects, it can reasonably be surmised that any potentially significant impacts associated with the construction of any replacement housing would be mitigated through the means proscribed in the original General Plan EIR No. 441 (and/or herein) for any other future residential development and as outlined for future development within this EIR as well (in particular as discussed under Section 4.2). The end result would be less than significant impacts to housing inventory and the people occupying them.

2. Regulatory Compliance for Impact 4.3.C

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. The following policies would serve further reduce or minimize this already insignificant housing-related impact. See Section 4.3.3.C for full text of each of these policies.

Policies LU 8.1 and 9.4: Policy LU 8.1 ensures that future development not infringe on necessary land uses, including rights-of-way and open space. Policy LU 9.4 allows clustering to facilitate growth without adversely affecting sensitive resources.

Policies C 2.4 and 7.9: Policy C 2.4 requires new development, which includes residential, to provide necessary circulation improvements to ensure adequate levels of service. Policy C 7.9 ensures that future development does not impinge upon lands needed for future circulation infrastructure.

3. Significance of Impact 4.3.C After Mitigation

The above analysis indicates that future development accommodated by the project, GPA No. 960, would have less than significant impacts on people and their housing needs. It would not displace substantial numbers of people nor necessitate construction of replacement housing elsewhere. In addition, compliance with the above-listed existing General Plan policies would further reduce or avoid the insignificant impacts associated with the project.

4.3.7 Population and Housing - Level of Significance After Mitigation

The analysis presented above indicates that future development accommodated by the project, GPA No. 960, would have less than significant impacts on housing and population-related environmental issues, including inducement of substantial population growth, either directly or indirectly, displacement of substantial numbers of people or existing homes or triggering the need for construction of replacement housing. Moreover, compliance with the above-listed General Plan policies would further prevent or reduce the insignificant impacts associated with the project.

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Section 4.4

Aesthetics and Visual Resources

Section 4.4
Aesthetics and Visual Resources

4.4.1 Introduction

This chapter reviews and analyzes aesthetic and visual resources associated with the proposed project, General Plan Amendment No. 960 (GPA No. 960). These resources include scenic vistas and viewsheds, scenic highways and scenic/visual resources, such as trees, rock outcroppings and elements of the built environment like historic buildings. This chapter also includes light and glare, which can adversely affect visual resources, ecosystems and the nighttime use of the Palomar Astronomical Observatory (which relies on dark skies for scientific purposes).

4.4.2 Existing Environmental Setting – Aesthetic and Visual Resources

Riverside County encompasses over 7,200 square miles extending roughly 200 miles in width from the Colorado River (Arizona border) to within 14 miles of the Pacific Ocean. Riverside County shares borders with Orange, San Diego, Imperial and San Bernardino Counties. Within Riverside County, there are 26 incorporated cities with individual identities set among a mixture of rural communities, small towns, deserts and open space areas. (For the purposes of GPA No. 960, the cities of Eastvale and Jurupa Valley have been treated as part of unincorporated Riverside County, as the cities did not incorporate until October 1, 2010, and July 1, 2011, respectively, after the date of this project's CEQA Notice of Preparation. The two other new cities, Wildomar and Menifee, which both incorporated in 2008, are included as municipalities in this EIR.) The various communities within unincorporated areas are defined by the built environment and the surrounding topography, which includes river valleys, lakes, low desert, mountains, foothills and rolling plains.

Since elements of GPA No. 960 occur throughout Riverside County, for visual assessment purposes, Riverside County is divided into eastern and western regions by the San Jacinto Mountains. A deep valley known as the San Gorgonio Pass, formed by the San Jacinto and San Gorgonio Mountains, serves as a natural link between these two areas. The San Bernardino, Little San Bernardino and Pinto Mountains form a portion of Riverside County's northern boundary while numerous mountain ranges, including those in the Santa Rosa Wilderness and Cleveland National Forest, serve as boundaries along the southern and western edges of Riverside County.

A. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they exist at the time the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental

setting constitutes the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used and a discussion of how it is or is not expected to differ from the existing physical conditions would be provided. It should be noted here that 'substantial evidence' typically refers to "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact," (PRC Section 21080(e)(1)). Further, 'substantial evidence' does not include "argument, speculation, unsubstantial opinion or narrative, evidence of social or economic impacts that do not contribute to, or are not cause by, physical impacts on the environment."

For the scenic and aesthetic resource baseline data presented and used herein, the following sources were determined to be the best-supported substantial evidence available and were used for the reasons stated. Land use data and other environmental data sets are described in their respective chapters elsewhere.

The data sources used herein for this section include: The 2004, 2006 and 2008 Field Reports issued by the California Department of Conservation, Farmland Mapping and Monitoring Program, in addition to the 2007 aerial photographs of the Riverside County Land Information System. The field reports, which map farmland and describe those previously mapped farmlands that have been converted to more urban uses, are the most recent data available from the State of California, which performs biennial farmland mapping updates as directed by state law. The latest aerial photographs depicted in the Riverside County Land Information System were flown in 2007 and show activity and uses for parcels within Riverside County. Riverside County highways, including scenic highways and roadways are also visible from the photographs. Together the data sources provide the information needed to establish the baseline used in determining potential impacts to aesthetic and visual resources pursuant to the proposed GPA No. 960.

B. Visual Character

A scenic vista is a view of an area that is visually and aesthetically pleasing and is generally associated with rural open spaces. This includes viewsheds of water bodies, ridgelines, mountain tops, skylines and other natural features. A viewshed is simply an area of land, water or other environmental element that is visible to the human eye from a fixed vantage point. Scenic and visual resources are generally defined to include the smaller-scale features within a viewshed, such as individual trees or boulders, as well as components of the built environment, such as windmills in rural areas and so on. They can also include, though are not limited to, land formations (natural or cultural modification), rock outcroppings, undisturbed natural areas (e.g., riparian areas, oak woodlands, etc.), open space, view corridors associated with designated scenic routes, points of historic or cultural significance, agricultural areas (e.g., vineyards, citrus groves) and other human-made features.

The following information summarizes the primary aesthetic resources and visual character within Riverside County. Since the project has the potential to affect areas throughout the county, the visual character of Riverside County is depicted and described in a general manner to provide a basic understanding of the major physical features, landmarks and characteristics of Riverside County. Specifics on localized areas expected to be affected by the project are addressed under Section 4.4.5 (Effect of GPA No. 960 on the General Plan and on Aesthetic and Visual Resources), later in this chapter. Additional details may also be found in each of the region-specific Area Plans of the General Plan and also in the 1999 Riverside County Integrated Plan Existing Setting Report.

Based on the descriptions in the 1999 Existing Setting Report, 15 visual analysis areas were identified to facilitate a greater understanding of the unique aspects, features and visual characteristics common in the various regions

of Riverside County. The boundaries of the regions are selected to capture areas of common physical characteristics and similar development patterns. Table 4.4-A (Summary of Visual Character and General Changes) provides a brief summary of the visual characteristics of these 15 areas. A more detailed, though dated, examination of Riverside County aesthetic resources for each region or area is included in Section 4.8 of the 1999 Existing Setting Report, which also includes a detailed photo essay.

Since 1999, when the Existing Setting Report was prepared, Riverside County's visual character has undergone substantial changes in the urban/suburban fringe areas as growth fueled the urbanization of existing suburban areas and the conversion of open, vacant lands to developed uses. According to the State of California, Riverside County, including its cities, accounted for roughly 23% of all new urban areas within California between 2006 and 2008. Between 2000 and 2008, the California Department of Conservation estimates that "developed or built-up land" in Riverside County increased by 60,862 acres. Much of this build up has been concentrated around existing city centers and other urban centers. Areas that have had considerable amount of visual changes associated with growth are noted in Table 4.4-A, below.

1. Western Riverside County

Western Riverside County is loosely bounded by the Santa Ana Mountains and Cleveland National Forest on the west and the San Jacinto Mountains and the San Bernardino National Forest on the east. Topography varies dramatically in this region, ranging from low-lying valleys to rolling hillsides and steep mountainous terrain with large rock outcroppings. Major features of this area include the Santa Ana River basin, Lake Mathews, Lake Perris, Lake Elsinore, Lake Skinner, Vail Lake, Hemet Lake, the San Jacinto River, Murrieta Creek, the Santa Rosa Plateau, the Santa Margarita River and the vineyard/citrus region near Temecula. The Diamond Valley Reservoir south of Hemet is the largest reservoir in Southern California. Western Riverside County includes numerous unincorporated communities as well as the cities of Corona, Riverside, Beaumont, Banning, Norco, Lake Elsinore, Perris, Hemet, San Jacinto, Moreno Valley, Calimesa, Canyon Lake, Murrieta, Wildomar, Menifee and Temecula.

2. Eastern Riverside County

Eastern Riverside County is loosely bounded by the Colorado River on the east and the Santa Rosa and San Jacinto Mountains on the west. The area includes the San Gorgonio Pass, part of Joshua Tree National Park, Whitewater River the Palo Verde Mesa and the northern end of the Salton Sea. The most urbanized areas in this portion of the county are contained in the Coachella Valley. The valley includes the incorporated cities of Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Indian Wells, Palm Desert, La Quinta, Indio and Coachella. The City of Blythe near the Arizona border is the eastern-most city in Riverside County. The area around Palm Springs is noted for its golf resorts nestled among the Santa Rosa Mountains. The Coachella Valley is also a major source of date palm groves in the U.S. The San Gorgonio Pass, noted for its high winds, is a key source of wind power for Southern California. The vast mountainous terrain of Joshua Tree National Park and desert topography of the Chuckwalla Valley lie between the Coachella Valley, Blythe and the Colorado River.

Table 4.4-A: Summary of Visual Character and General Changes

Visual Analysis Area	General Visual Character
1. Jurupa Valley-Eastvale	Large-lot and low-density single-family residences among rolling hills, as well as medium density residential tracts in Eastvale; increasing industrial uses in Mira Loma, concentrated commercial along Mission Boulevard and Limonite Avenue, commercial uses otherwise scattered; agricultural uses (e.g., dairies and grazing lands); the Santa Ana River flows along the southern boundary of the area. **Since 2000:** The area has seen extensive urbanization with the addition of a number of new housing developments, as well as a number of new commercial developments as well. An elementary school was also established in the area. The City of Eastvale incorporated on October 1, 2010 and the City of Jurupa Valley incorporated on July 1, 2011.
2. Temescal Valley	Framed by the Santa Ana Mountains and the Gavilan Hills, predominantly rural land and suburban single-family residences set among open space; mountainous areas are filled with rock outcroppings, scattered oak trees and riparian areas. Some light industrial and commercial along the I-15. **Since 2000:** The area has been subject to new urbanization due to various new home developments and a major commercial retail center (the "Shops at Dos Lagos"). The active portion of El Sobrante Landfill was expanded by approximately 70 acres.
3. Greater Elsinore	The Santa Ana Mountains form the western boundary of this area marked by oak and scrubby pine forests, scattered residences and campgrounds; large-lot residences in the rolling hills east of I-15; lakeside resorts and campgrounds; semi-urbanized in Sedeco Hills and Wildomar; large-scale Specific Plans (e.g., Horsethief Canyon, Trilogy at Glen Ivy, the Retreat, etc.); mineral extraction north of Lake Elsinore. Scattered commercial uses along Grand Ave within Lakeland Village, predominately residential and vacant lots. **Since 2000:** The area experienced growth and urbanization due to new home developments, major commercial retail centers and the addition of schools in the area. Also, the City of Wildomar incorporated July 1, 2008.
4. Southwestern Riverside County Area	Framed by the Santa Ana Mountains, Santa Margarita and Agua Tibia ranges and the Black Hills; consists of a series of valleys separated by rolling hills; eastern slopes of the Santa Ana Mountains characterized by steep slopes and valleys, citrus and avocado orchards and the Santa Rosa Plateau Ecological Preserve; large residential lots; rural communities east of Temecula; Vail Lake; equestrian uses on rolling hills; agricultural uses. **Since 2000:** The area saw rapid urbanization as multiple new home and commercial retail developments were added to the Temecula/Murrieta area along with multiple new schools and business park developments. The Wine Country in Temecula has also seen extensive growth during this time period.
5. Lake Mathews Area	Region consists primarily of rolling hills, large-lot residential, citrus and vineyards uses; Lake Mathews, significant amounts of natural open space, natural rock outcroppings and Mockingbird Canyon Archeological Site. **Since 2000:** The area saw extensive urbanization due to new home developments.
6. Highways 74-79	Large-lot residential uses, agricultural and equestrian uses among low-lying flatlands and rocky peaks; includes Diamond Valley Lake, some scattered single-family residences on smaller lots/mobile homes; some commercial-industrial and community serving uses. **Since 2000:** Both Highways 74 and 79 have seen extensive growth along their routes due to new home developments within the cities of Hemet, Murrieta and Temecula.
7. Menifee Valley	A valley ringed by ridges; rugged rock outcroppings; pockets of residential uses on edges of the valley; estate development in surrounding hillsides; some commercial and industrial development; golf courses, residential and some agriculture uses. **Since 2000:** This area has seen extensive urbanization along the I-215 corridor and suburbanization of former agricultural fields beyond. Much of this area is now part of the City of Menifee, which incorporated October 1, 2008.
8. Perris Valley	Flatlands and adjacent foothills; rural residential and agricultural uses. **Since 2000:** Perris Valley saw extensive urbanization with the addition of multiple new home developments and the Perris Crossing retail shopping center and associated infrastructure. An elementary school and a middle school were also added to the area.

Visual Analysis Area	General Visual Character
9. Lakeview and Nuevo	Wide variety of geographical features, low-lying valleys, rolling hills and rock mountainous terrain; primarily large-lot rural residential; some public facilities; the San Jacinto River runs through the northern portion of the area. **Since 2000:** The area has not experienced a tremendous amount of urbanization; however, a number of residential developments have occurred in the area.
10. San Jacinto Valley	Encompasses San Jacinto Valley and adjacent foothills and mountains; urban development within cities, otherwise medium-density residential development, scattered commercial uses; predominantly agricultural and dairies; the San Jacinto River traverses the area in a northwest-southeast direction; riparian areas along the river; views of mountains, rock outcroppings and sparse, low-lying vegetation. **Since 2000:** A number of new housing developments and associated services and infrastructure, including a school, have arisen, along with some commercial development also.
11. Reche Canyon and Lake Perris	Reche Canyon consists primarily of mountainous terrain with low-lying vegetation, rock outcroppings and large-lot rural residential uses; rural, agricultural and suburbanizing uses in Highgrove, Badlands and San Timoteo Creek along eastern boundary. **Since 2000:** The area has experienced some growth due to urbanization trends, particularly in the Oak Valley area.
12. San Gorgonio Pass	Bordered by the San Bernardino and San Jacinto Mountains; small town urban uses; San Gorgonio River; Morongo Band of Mission Indians Reservation lands, wind energy facilities, large-lot rural residential and agricultural uses; desert and hillside vegetation. **Since 2000:** The Cherry Valley area, as well as areas in and around the cities of Banning and Beaumont, has continued to urbanize with the addition of residential and commercial developments and educational facilities. Additional wind turbines have also been introduced in the Pass, near Whitewater River. "The Morongo Casino, Resort and Spa" was developed in the Cabazon area.
13. Riverside Extended Mountain Area Plan (REMAP)	Encompasses the San Jacinto and Santa Rosa Mountains; mountain peaks, rock outcroppings; numerous springs and streams; vegetation ranging from desert scrub to alkaline forests; rural residential enclaves; scattered community and tourist-related commercial uses; public recreation areas; wilderness areas; panoramic views of the Coachella Valley to the east and low-lying areas of Riverside County to the west. **Since 2000:** The area has not experienced a tremendous amount of urbanization, but some residential growth has occurred.
14. Coachella Valley	East of the San Jacinto and Santa Rosa Mountains; wind turbines, golf-oriented and tourist resort communities; date groves and agricultural uses; desert oasis areas; cove-like communities at base of Santa Rosa Mountains; Whitewater River; Salton Sea State Recreation Area; desert and mountain vistas. **Since 2000:** The Coachella Valley region, particularly within and spreading out from the cities, has expanded greatly. Mainly with housing and resort-style residential communities, associated golf courses, businesses and infrastructure. Aquaculture (fish farms) has flourished west of the Salton Sea. Also, the necessary approvals and permits were completely obtained for the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) in October of 2008. The CVMSHCP was adopted to ensure the preservation of sensitive biological resources and open space in the Coachella Valley region of eastern Riverside County.
15. Eastern Riverside County (East of Coachella Valley to the Arizona Border)	Vast expanses of desert scrub; portion of Joshua Tree National Monument; desert mountain ranges; desert wilderness areas; agricultural uses in the Palo Verde Valley; Colorado River; residential and commercial in Blythe. **Since 2000:** Some development has occurred in the Blythe and Palo Verde areas, principally residential. A new power plant also occurs in Blythe.

Sources: Riverside County, Existing Setting Report for EIR No. 441, 2002. Riverside County Planning Dept., Project Application Information, 2011. California Department of Conservation, Farmland Mapping and Monitoring Program, Field Reports, 2004, 2006 and 2008.

C. Nighttime Light and Glare

Light pollution may most simply be described as the alteration of natural light levels in the outdoor environment due to artificial light sources. More commonly, it is taken to mean excessive or obtrusive artificial light. The International Dark-Sky Association defines light pollution as, "any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night and energy waste." Some sources, such as the

U.S. National Park Service, delineate it as artificial illumination of the night sky decreasing the visibility of stars and other natural sky phenomena. The term also includes the incidental or obtrusive aspects of outdoor lighting, such as glare (visual impairment), trespass into areas not needing lighting, use in locations or at times when lighting is not needed and disturbance of the natural nighttime landscape. Night lighting and glare can affect human vision, navigation and other activities. In particular, excessive night lighting can lead to skyglow, which interferes with the operation of astronomical observatories. Light pollution can also interfere with nocturnal wildlife, particularly night-hunting or foraging animals, such as owls, rodents and others.

Since the early 1980s, a global dark-sky movement has emerged as part of a campaign to reduce the amount of light pollution. With the renewed focus on energy conservation and greenhouse gas emission reduction, attention is again being turned to the reduction of excessive lighting, which also wastes electricity as surely as a dripping faucet wastes water. U.S. Department of Energy data has demonstrated that approximately 30-60% of energy consumed in lighting is unneeded or excessive and wastes the energy equivalent of over two million barrels of oil each day.

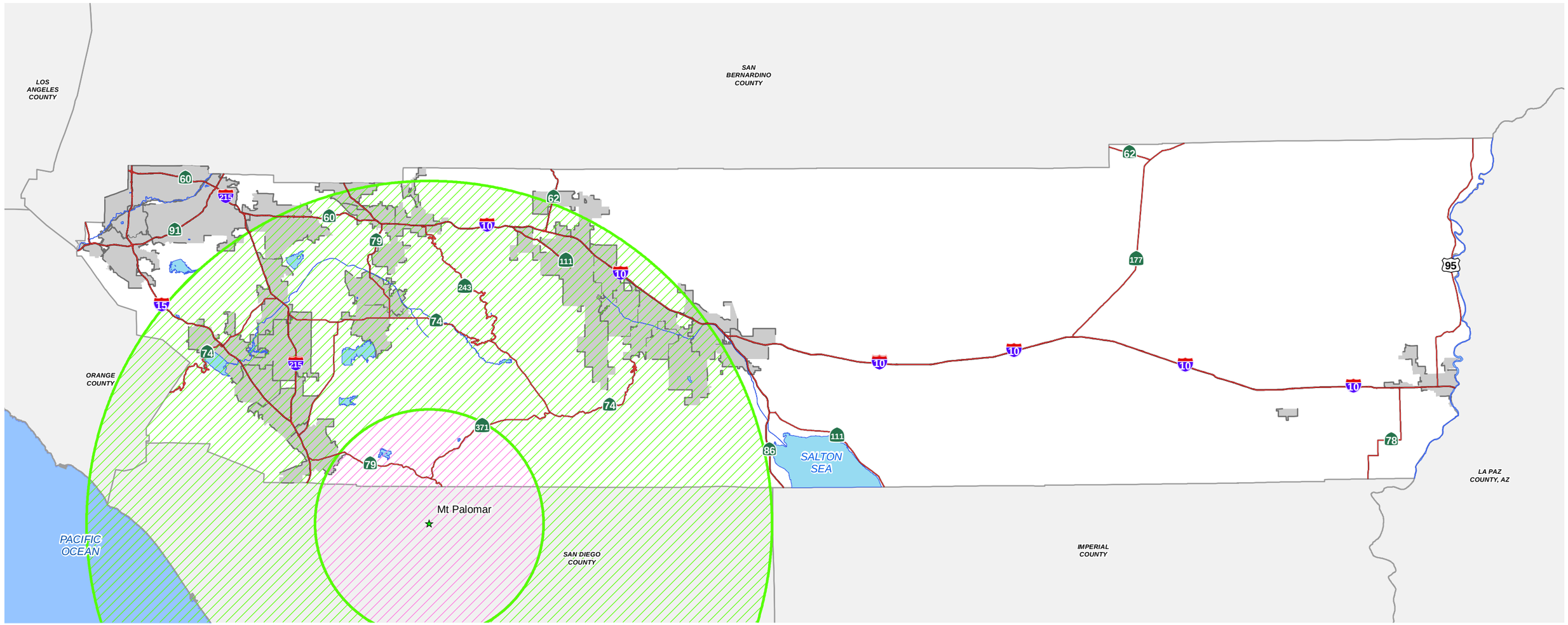
Nighttime lights can create a form of light pollution that adversely affects the natural environment, such as inhibiting nocturnal species' ability to hunt at night, and the human environment, such as interfering with the functionality of astronomical observatories or causing glare that endangers driving or airplane navigation. A major scientific resource, the Palomar Observatory, is located in San Diego County approximately 5.5 miles south of the Riverside County border. In general, astronomic observatories need to be sited at least 30 to 40 miles away from large, brightly lit areas, such as cities and other urban concentrations, in order to ensure adequate nighttime darkness of the sky. Back when established, over a century ago in 1908, the Palomar Observatory was located in a remote, undeveloped region. However, in the last century, growth and urban development have spread tremendously throughout Southern California, particularly in western Riverside County and the cities of Temecula, Murrieta, as well as within the Coachella Valley.

It is to be expected that the minimization of nighttime light pollution within the region surrounding the observatory is essential to its operation. To aid in accomplishing this, the County of Riverside enforces Ordinance No. 655 (Regulating Light Pollution). This ordinance establishes two zones for specific lighting controls based on distance from the Observatory. As shown in Figure 4.4.1(Countywide Palomar Restriction Zones A and B), Zone A encompasses a sphere with a 15-mile radius; Zone B encompasses a 45-mile radius from the Observatory. The intent of the ordinance is to restrict the permitted use of certain light fixtures that emit into the night sky undesirable light rays which have a detrimental effect on astronomical observation and research.

D. Scenic Highways and Roadways

Scenic vistas and natural features, including low-lying valleys, mountain ranges, ridgelines, rock formations, rivers and lakes are often enjoyed via Riverside County's many roadways. Due to the visual significance of many of these areas, certain roadways within Riverside County have been officially recognized as either 'eligible' or 'designated' State or County scenic highways. Table 4.4-B (Summary of State and County Eligible and Designated Scenic Highways), below, outlines these highways; they are shown graphically in Figure 4.4.2 (Riverside County Scenic Highways). Development along the designated scenic highways and roadways is managed to preserve the areas' scenic qualities.

Since 2000, the State of California has not designated any new State scenic highways nor has the State of California added any roadways within Riverside County to the State-Eligible Highways list. *Additionally, Interstate 10 (San Gorgonio Pass and Western Coachella Valley: San Bernardino County line to Calimesa, through to Indian Wells) was removed from the State Eligible Scenic Highways list.* While a number of roadways within Riverside County remain as County-eligible scenic highways, no new roadways have been officially designated as County scenic highways.



Data Source: Riverside County (2010)

- Lighting Policy Area Zone A
- Lighting Policy Area Zone B
- Palomar Observatory
- Highways
- Cities
- Waterbodies

Figure 4.4.1

December 16, 2013

Miles

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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

MT. PALOMAR NIGHT TIME LIGHTING POLICY AREA

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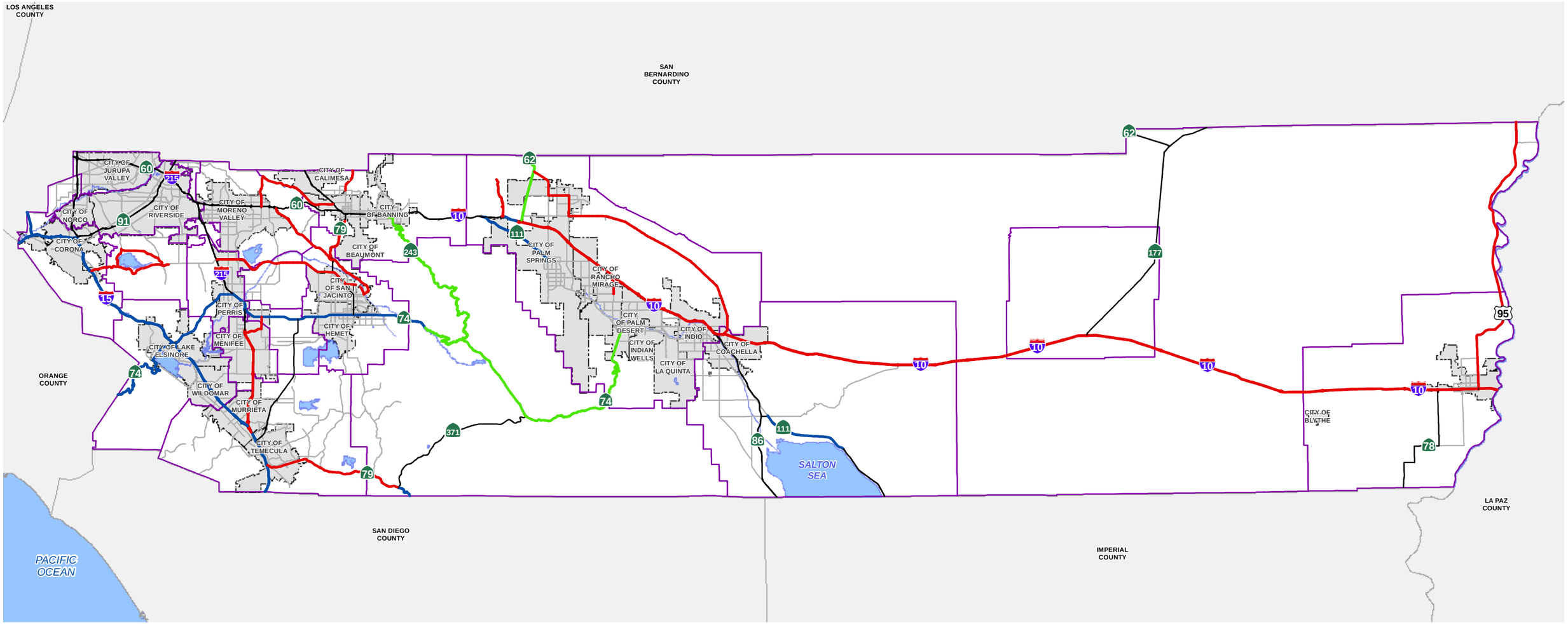

Data Source: Riverside County (2013)/Cal Trans (2013)

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- State Designated
- State Eligible
- County Eligible
- Not Designated
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.4.2

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

SCENIC HIGHWAYS

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4.4.3 Policies and Regulations Addressing Aesthetic and Visual Resources

A. State and Federal Regulations

The California Department of Transportation (Caltrans) State Scenic Highway Program provides for the designation of scenic or eligible scenic highways, as well as scenic corridors. Scenic corridors are evaluated based on existing scenic areas adjacent to and visible from (but not within) the highway right-of-way and featuring primarily scenic and natural features. Topography, vegetation, viewing distance and jurisdictional lines determine corridor boundaries. Caltrans scenic highway considerations are based upon "how much of the natural landscape a traveler sees and the extent to which visual intrusions impact the scenic corridor." As part of the designation process, the local governing body must develop and implement a corridor protection program containing the following five legislatively-required elements:

1. Regulation of land use and density of development (i.e., density classifications and types of allowable land uses).

2. Detailed land and site planning (i.e., permit or design review authority and regulations for the review of proposed developments).

3. Control of outdoor advertising (i.e., prohibition of off-premise advertising signs and control of on-premise advertising signs).

4. Careful attention to and control of earthmoving and landscaping (i.e., grading ordinances, grading permits, design review authority, landscaping and vegetation requirements).

5. The design and appearance of structures and equipment (i.e., design review authority and regulations for the placement of utility structures, microwave receptors, wireless communication towers, etc.).

B. Riverside County Regulations

As discussed above, the following existing regulations and policies are intended to protect existing aesthetic and visual resources within Riverside County. These policies are not part of the proposed GPA No. 960; rather, they are policies that have been previously approved by the County of Riverside as separate discretionary actions.

Ordinance No. 655 - Regulating Light Pollution: The intent of this ordinance is to restrict the permitted use of certain light fixtures emitting into the night sky undesirable light rays which have a detrimental effect on astronomical observation and research. Ordinance No. 655 defines lighting sources, establishes the type and manner of installation and operation of lighting and details lighting prohibitions. Ordinance No. 655 applies to restriction zones Zone A and Zone B. These radius zones are based on distance from the Palomar Observatory. Zone A encompasses a 15 miles radius and Zone B encompasses a 45-mile radius around the observatory. See Figure 4.4.1.

Table 4.4-B: Summary of State and County Eligible and Designated Scenic Highways

Designation	Hwy/State Route	Region / Areas Affected
State Designated	State Route 243 and State Route 74	San Gorgonio Pass, Western Coachella Valley and San Jacinto Mountains: Banning City limit to SR-74, SR-74 from San Bernardino National Forrest to SR-111 in Palm Desert
State Designated	State Route 62	Western Coachella Valley: Interstate 10 to San Bernardino County line
State Eligible	State Route 74	From San Jacinto Mountains, through San Jacinto Valley, Harvest Valley/Winchester, Sun City, Menifee and Elsinore Valleys: Orange County line to El Cariso and continuing east towards the City of Hemet
State Eligible	Interstate 15, State Route 91 and State Route 71	Temescal Valley, Lake Elsinore and Southwestern Riverside Co. South from north of Corona to the San Diego County Line
~~State Eligible~~	~~Interstate 10~~	~~San Gorgonio Pass and Western Coachella Valley: San Bernardino County line to Calimesa, through to Indian Wells~~
State Eligible	State Route 111	Eastern Coachella Valley: Salton Sea (Bombay Beach) to SR-195 near Mecca
State Eligible	State Route 79	San Jacinto Mountains: From the SR-371 intersection in the Aguanga area, south to the San Diego County line
County Eligible	US Highway 95	Palo Verde: From I-10 to the San Bernardino County line
County Eligible	Interstate 10	Palo Verde, Desert Center, Eastern Desert Area and Eastern and Western Coachella Valley: From the Arizona border at the Colorado River to the SR-62 junction
County Eligible	Dillon Road	Western Coachella Valley: North from I-10
County Eligible	Oak Glen Rd/ Beaumont Ave	San Gorgonio Pass: San Bernardino County line to Beaumont Ave. to the Beaumont city limit
County Eligible	San Timoteo Cyn Rd / Redlands Blvd	San Gorgonio Pass and Reche Canyon/Badlands: From the Beaumont city limit to the Moreno Valley city limit to SR-60
County Eligible	Gilman Springs Road/ State Route 79	Reche Canyon/Badlands and San Jacinto Valley: Moreno Valley city limit to Lamb Canyon Road (SR-79), south of the Beaumont city limit to the Gilman Springs Rd intersection; and continuing south towards SR-74 and the City of San Jacinto
County Eligible	Ramona Expressway	Reche Canyon/Badlands, Lakeview/Nuevo, San Jacinto Valley: I-215 east towards the City of San Jacinto to SR-74
County Eligible	Interstate 215	Southwestern Riverside County, Sun City and Menifee Valley: SR -74, Menifee Rd, McCall Blvd, I-215 South to I-15
County Eligible	State Route 79	Southwestern Riverside County and San Jacinto Mountains: I-215 from Temecula east to SR-371 at Aguanga
County Eligible	Cajalco Rd, El Sobrante Rd, Mockingbird Cyn Rd and La Sierra Ave	Lake Mathew / Woodcrest: I-15 to Lake Elsinore, around Lake Mathews

Source: Riverside County General Plan, Figure C-9, "Riverside County Scenic Highways," 2003 *and updated per the California Eligible and Officially Designated Routes, 2014, http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm.*

Ordinance No. 915 - Regulating Outdoor Lighting: The intent of this ordinance is to establish a countywide standard for outdoor lighting that would generally prohibit light trespass and protect the health, property and well-being of residents within the unincorporated Riverside County. This ordinance will regulate light trespass in those areas that fall outside of the 45-mile radius of Ordinance No. 655, mentioned above. Ordinance No. 915 requires all outdoor lights to be adequately shielded and directed such that no direct light falls outside the parcel of origin or onto public rights-of-way.

Ordinance No. 460 - Regulating the Division of Land and Ordinance No. 461 - Road Improvement Standards and Specifications: The road standards provided in Ordinance No. 461 conform to the Circulation

Element of the General Plan for the purpose of establishing proper standards, specifications and directions for design and construction of any road or other land division improvements required in the unincorporated territory of Riverside County. In regulating road rights-of-way, Ordinance No. 461 requires that the rights-of-way be kept clear for the traveling public, subsequently protecting the visual aspects of scenic highways.

Ordinance No. 460 regulates the division of land for unincorporated Riverside County including the necessary improvements associated with the division of land. As such, the ordinance promotes maintaining visual resources by requiring that subdivisions comply with "Street Tree" provisions as well as installation requirements for electrical and communication facilities, specifically when located near scenic highways.

Together, Ordinance No. 460 and Ordinance No. 461 aid in the preservation and protection of existing aesthetic and visual resources while also potentially adding new visual resources to Riverside County when street trees are required.

Ordinance No. 348 - Land Use: Riverside County's Land Use Ordinance establishes allowable uses of land and sets standards for what and how land may be developed. The ordinance protects the people and property of Riverside County from development of unsuitable land uses and aims to ensure that built areas are developed safely and with minimal conflict with surrounding lands. In regards to Aesthetics and Visual Resources, Ordinance No. 348 specifically requires that all Wind Energy Conversion Systems (WECS) maintain specific setbacks from all State or County eligible or designated scenic highways, thereby reducing potential adverse impacts to scenic highways. The setback distance is determined by the actual location of the highway. Ordinance No. 348 also identifies requirements for landscaping associated with development proposals. The landscaping of development projects enhances the visual character and aesthetic quality of a site and its surroundings.

Ordinance No. 457 - Building Codes and Fees Ordinance: This ordinance regulates grading, buildings and structures within Riverside County. In relation to the Aesthetics and Visual Resources, Ordinance No. 457, enhances the existing visual character and aesthetic quality of development sites and the surrounding areas by requiring development projects that involve cut and fill slopes of particular vertical heights to be landscaped in order to provide proper erosion control measures. Erosion control landscaping plans must be submitted to and approved by the Riverside County Building and Safety Department prior to installation. Landscaping the slopes provides stability for the slope while also providing aesthetic enhancements to the site and surrounding area as well.

County Design Guidelines: Design guidelines provide development guidance for the congruent aesthetic character of a community as envisioned by the community. This may include development guidance for scale, intensity, architectural design, landscaping, light fixtures, sidewalks, trails, community logo, signage program and other visual design features of a project. Riverside County's current community guidelines include the following documents:

- Community Center Design Guidelines (Appendix J of the General Plan)
- Countywide Design Standards and Guidelines
- Third and Fifth District Design Guidelines
- Design and Landscape Guidelines for Development in the 2nd Supervisorial District
- Citrus Vineyard Policy Design Guidelines

- Bermuda Dunes Design Guidelines
- Desert Edge Design Guidelines
- Lakeview Nuevo Design Guidelines
- Temescal Valley Design Guidelines
- Vista Santa Rosa Design Guidelines
- Rubidoux Village Design Workbook
- Landscape Review Design Guidelines
- Live Oak Tree Management Guidelines
- Mecca Design Guidelines
- Thermal Design Guidelines
- Temecula Valley Wine Country Design Guidelines

County Resource Guidelines: Resource guidelines provide guidance for the protection, maintenance and beautification of the county. These guidelines include requirements for the protection of existing oak trees on parcels proposed for development, as well as water-efficient landscaping for development proposals. Current Riverside County Resource Guidelines include the Landscape Review Design Guidelines (Ordinance No. 859) and County Oak Tree Management Guidelines.

C. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval.

1. Land Use (LU) Element Policies

Policy LU 2.1: Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Map (Figure LU-1) and the Area Plan Land Use Maps, in accordance with the following:

a. Provide a land use mix at the countywide and Area Plan levels based on projected need and supported by evaluation of impacts to the environment, economy, infrastructure, and services.

b. Accommodate a range of community types and character, from agricultural and rural enclaves to urban and suburban communities.

c. Provide for a broad range of land uses, intensities, and densities, including a range of residential, commercial, business, industry, open space, recreation, and public facilities uses.

d. Concentrate growth near community centers that provide a mixture of commercial, employment, entertainment, recreation, civic, and cultural uses to the greatest extent possible.

e. Concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character of Riverside County to the greatest extent possible.

f. Site development to capitalize upon multi-modal transportation opportunities and promote compatible land use arrangements that reduce reliance on the automobile.

g. Prevent inappropriate development in areas that are environmentally sensitive or subject to severe natural hazards.

Policy LU *7.1* (Previously LU 6.1): Require land uses to develop in accordance with the General Plan and Area Plans to ensure compatibility and minimize impacts.

Policy LU *7.4* (Previously LU 6.4): Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Policy LU *9.3* (Previously LU 8.3): Incorporate open space, community greenbelt separators, and recreational amenities into Community Development areas in order to enhance recreational opportunities and community aesthetics, and improve the quality of life.

Policy LU *14.1* (Previously LU 13.1): Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.

Policy LU *14.3* (Previously LU 13.3): Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within designated and eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.

Policy LU *14.4* (Previously LU 13.4): Maintain at least a 50-foot setback from edge of the right-of-way for new development adjacent to designated and eligible State and County scenic highways.

Policy LU *14.5* (Previously LU 13.5): Require new or relocated electric or communication distribution lines, which would be visible from designated and eligible State and County scenic highways, to be placed underground.

Policy LU *14.6* (Previously LU 13.6): Prohibit offsite outdoor advertising displays that are visible from designated and eligible State and County scenic highways.

Policy LU *14.7* (Previously LU 13.7): Require that the size, height and type of on-premise signs visible from designated and eligible State and County scenic highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.

Policy LU *14.8* (Previously LU 13.8): Avoid the blocking of public views by solid walls.

Policy LU *16.4* (Previously LU 15.4): Except in unusual circumstances, no wind turbines shall be sited on lands in excess of 25% of slope.

Policy LU *16.5* (Previously LU 15.5): Except in unusual circumstances, restrict lands in excess of 25% of slope from uses associated with wind turbine development, such as access roads, except in specific instances where site-specific investigation indicates that no adverse impacts or increased hazard would result, and that visual impacts can be mitigated.

Policy LU *16.12* (Previously LU 15.12): Require the design and location of commercial wind energy developments to mitigate visual impacts. Issues which may be included in the review may be, but not necessarily limited to, the following list, depending on turbine types, densities and siting:

a. Color of turbines.

b. Location and design of associated facilities such as roads, fencing, non Public Utilities Commission regulated utility lines, substations and maintenance buildings to minimize intrusion or disruption of the landscape.

c. Minimizing of disturbed ground and roadway, and restoring of the surface to natural vegetation.

d. Prohibition of brand names or advertising associated with wind turbines visible from any scenic highways or key viewpoints.

e. Need for interpretation and/or visitors center located at the end of the view shed of turbines.

Policy LU *16.13* (Previously LU 15.13): Require design measures for commercial wind energy development on sites near official or eligible State or County scenic highways designated (Figure C-7, Circulation Element) by Riverside County, and sites within those areas identified as "critical" and "very critical" by Environmental Impact Report No. 158. Issues which may be included in the review may be, but are not necessarily limited to, the following list, depending on turbine types, densities, and sitting:

a. Except in unusual circumstances, no wind turbine would be sited on slopes in excess of 25%; the purpose of this standard is to prevent disturbance and degradation of landforms, and visual scarring by cut and fill, side casting, retaining walls, trenching, and vegetation removal; avoid skyline and ridgeline location.

b. Wind turbines should be set back from scenic highways and viewpoints; set back individual turbines far enough from scenic highways and key viewpoints so they do not obscure or overwhelm distinctive skylines; set back large turbines from small important landmarks so that they do not overwhelm the landform.

c. Coordinate color schemes for all developments; avoid mixing colors within a particular array unless to subordinate a particular turbine type or to provide safety markings; limit use of color patterns as accent for key clusters or individual turbines; consider aviation safety coloration and lighting as may be required by the FAA.

Policy LU 19.1: Where appropriate, use any adopted Density Transfer Program to help implement Rural Village Overlay Study Areas and the Multi-Species Habitat Conservation Program.

Policy LU *21.1* (Previously LU 17.1): Require that grading be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.

Policy LU *21.3* (Previously LU 17.3): Ensure that development does not adversely impact the open space and rural character of the surrounding area.

Policy LU *26.1* (Previously LU 20.2): Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.

Policy LU *26.3* (Previously LU 20.4): Ensure that development does not adversely impact the open space and rural character of the surrounding area.

Policy LU *28.6* (Previously LU 22.6): Require setbacks and other design elements to buffer residential units to the extent possible from the impacts of abutting agricultural, roadway, commercial and industrial uses.

Policy LU *28.10* (Previously LU 22.10): Require that residential units/projects be designed to consider their surroundings and to visually enhance, not degrade, the character of the immediate area.

Policy LU *29.9* (Previously LU 23.9): Require that commercial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.

Policy LU *30.8* (Previously LU 24.8): Require that industrial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.

Policy LU *31.5* (Previously LU 25.5): Require that public facilities be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.

2. Circulation (C) Element Policies

Policy C 5.3: Require parking areas of all commercial and industrial land uses that abut residential areas to be buffered and shielded by adequate landscaping.

Policy C 19.1: Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' Scenic Highways Plan.

Policy C *20.10* (Previously C 20.8): Avoid, where practicable, disturbance of existing communities and biotic resource areas when identifying alignments for new roadways, or for improvements to existing roadways and other transportation system improvements.

3. Open Space (OS) Element Policies

Policy OS 5.6: Identify and, to the maximum extent possible, conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

Policy OS 9.3: Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees, and other features for ecosystem, aesthetic and water conservation purposes.

Policy OS 9.4: Conserve the oak tree resources in the county.

Policy OS 21.1: Identify and conserve the skylines, view corridors and outstanding scenic vistas within Riverside County.

Policy OS 22.1: Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.

Policy OS 22.2: Study potential scenic highway corridors for possible inclusion in the Caltrans Scenic Highways Plan.

Policy OS 22.4: Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan when it is necessary to preserve unique or special visual features.

Policy OS 22.5: Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors.

D. Proposed New or Revised Riverside County General Plan Policies

The following revision to existing General Plan policies is included as part of GPA No. 960. The revision is intended to enhance the policies' implementation and comprehensive use.

1. Land Use (LU) Element Policies

Policy LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

a. Compliance with the design standards of the appropriate Area Plan land use category.

b. Require that structures be constructed in accordance with the requirements of the County's zoning, building and other pertinent codes and regulations.

c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.

d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.

e. Pursue energy efficiency through street configuration, building orientation, and landscaping to capitalize on shading and facilitate solar energy, as provided for in Title 24 *Part 6 and/or Part 11* of the California ~~Administrative~~ Code *of Regulations*.

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate.

g. Encourage innovative and creative design concepts.

h. Encourage the provision of public art *that enhances the community's identity, which may include elements of historical significance and creative use of children's art.*

i. Include consistent and well-designed signage that is integrated with the building's architectural character.

j. Provide safe and convenient vehicular access and reciprocal access between adjacent commercial uses.

k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighborhoods.

l. Mitigate noise, odor, lighting, and other impacts on surrounding properties.

m. Provide and maintain landscaping in open spaces and parking lots.

n. Include extensive landscaping.

o. Preserve natural features, such as unique natural terrain, *arroyos, canyons, and other* drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.

p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space, and other pertinent elements.

q. Design parking lots and structures to be functionally and visually integrated and connected.

r. Site buildings access points along sidewalks, pedestrian areas, and bicycle routes, and include amenities that encourage pedestrian activity.

s. Establish safe and frequent pedestrian crossings.

t. Create a human-scale ground floor environment that includes public open areas that separate pedestrian space from auto traffic or where mixed, it does so with special regard to pedestrian safety.

u. Recognize open space, including hillsides, arroyos, riparian areas, and other natural features as amenities that add community identity, beauty, recreational opportunities, and monetary value to adjacent developed areas.

v. Manage wild land fire hazards in the design of development proposals located adjacent to natural open space.

Policy LU *4.5* (Previously 4.4): Permit historically significant buildings to vary from building and zoning codes in order to maintain the historical character of the county; providing that the variations do not endanger human life and buildings comply with the State Historic~~al~~ *Building* Code.

Policy LU *7.2* (Previously LU 6.2): Notwithstanding the Public Facilities designation, public facilities shall also be allowed in any other land use designation except for the Open Space-Conservation and Open Space-Habitat land use designations. For purposes of this policy, a public facility shall include all facilities operated by the federal government, the State of California, the County of Riverside, any special district governed by *or operating within* the County of Riverside or any city, and all facilities operated by any combination of these agencies.

Policy LU *7.6* (Previously LU 6.7): *Require* buffer*ing to the extent possible* and/or maintain a natural edge for proposed development directly adjacent to national forests.

Policy LU *9.1* (Previously LU 8.1): Provide for permanent preservation of open space lands that contain important natural resources, *cultural resources,* hazards, water features, watercourses *including arroyos and canyons*, and scenic and recreational values.

Policy LU *9.4* (Previously LU 8.4): Allow development clustering and/or density transfers in order to preserve open space, natural resources, *cultural resources,* and/or biologically sensitive resources. *Wherever possible, development on parcels containing 100-year floodplains and blue line streams and other higher-order watercourses and areas of steep slopes adjacent to them shall be clustered so as to keep development out of the watercourse and adjacent steep slope areas, and to be compatible with other nearby land uses.*

Policy LU *12.1* (Previously LU 11.1): Apply the following policies to areas where development is allowed and that contain natural slopes, canyons, or other significant elevation changes, regardless of land use designation:

a. Require that hillside development minimize alteration of the natural landforms and natural vegetation.

b. Allow development clustering to retain slopes in natural open space whenever possible.

c. Require that areas with slope be developed in a manner to minimize the hazards from erosion and slope failures.

d. Restrict development on visually significant ridgelines, canyon edges, and hilltops through sensitive siting and appropriate landscaping to ensure development is visually unobtrusive.

e. Require hillside-adaptive construction techniques, such as post and beam construction, and special foundations for development when the need is identified in a soils and geology report which has been accepted by the County.

f. ~~Encourage the~~ *In areas at risk of flooding,* limit~~ation of~~ grading and cut and fill to the amount necessary to provide stable areas for structural foundations, street rights-of-way, parking facilities, and other intended uses.

2. Circulation (C) Element Policies

Policy C 20.1: Ensure preservation of trees identified as superior examples of native vegetation within road rights-of-way through development proposals review process. *Where the County deems preservation to be infeasible, relocation and/or replacement shall be evaluated by a qualified arborist to ensure that the impacts are mitigated.*

Policy C 25.2: Locate new and relocated utilities underground when possible *and feasible*. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

3. Open Space (OS) Element Policies

Policy OS 5.5: ~~New development shall p~~ *P*reserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. *Prohibit fencing that constricts flow across watercourses and their banks.* ~~Incentives shall be utilized to the maximum extent possible.~~

4.4.4 Thresholds of Significance for Aesthetic and Visual Resources

The proposed project would result in a potentially significant impact on aesthetic or visual resources if it would:

A. Have a substantial adverse effect on a scenic vista.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historical buildings within a State scenic highway.

C. Substantially degrade the existing visual character or aesthetic quality of a site and its surroundings.

D. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the areas.

E. Interfere with the nighttime use of the Palomar Astronomical Observatory, as protected through Riverside County Ordinance No. 655.

4.4.5 Effect of GPA No. 960 on the General Plan and on Aesthetic and Visual Resources

A. Method of Aesthetic Analysis

Some components of GPA No. 960 have the potential to affect land use, including some site-specific locations. An evaluation was performed to determine if any of the proposed changes would have the potential to significantly adversely affect a scenic resource within Riverside County, see Appendix EIR-3. First, for those project components for known locations (i.e., Riverside County-initiated land use designation changes, study area and policy area revisions, etc.) existing and proposed land uses were examined for aesthetic compatibility with the existing conditions on and surrounding the sites. Secondly, the proposed changes were evaluated in terms of potential to adversely affect each area or region's existing scenic values. As a result, all of the GPA No. 960 items with spatial components were classed into one of three categories of potential for aesthetic impacts:

No Effect / Nominal Effect: This category includes land found to be already developed (built out) with existing urban, suburban, industrial, agricultural or rural uses; land already fully disturbed, for example graded, scraped or disked, such that the site's own natural aesthetics have been lost or extensively altered, and its role in any scenic viewshed would be minimal. Changes to these types of sites would have a nominal effect on an area's overall viewshed or aesthetics. This category also includes lands that would be fully conserved, for example, parcels going to the Open Space-Conservation Habitat (OS-CH) land use designation. Lands going into designations that do not accommodate development would have no effect on an area's viewshed or aesthetics.

Minor Effect: This category includes land where the disturbance resulting from any future development would most likely be minor. In some cases, this may include a vacant site that is large enough to accommodate the proposed use while making any site-planning or design allowances necessary to ensure minimal aesthetic impacts occur. An example of this would be a 10-acre, lightly forested parcel in which two single-family homes would be permitted. Each resultant parcel would be large enough to allow situating the pad and structures in locations that avoid a ridgeline or viewshed, stately mature pines, large rock formations and so on.

This category also includes vacant or undisturbed lands that contribute to the existing aesthetic ambiance of an area, but are not essential for a region's overall viewshed or aesthetic. An example of this would be a 20-acre parcel of vacant, undisturbed desert scrub located amongst other similar parcels that have been developed with various single-family residences and light agricultural uses. In such case, any potential aesthetic impacts would result merely from the transition of the site from vacant to developed, rather than affecting a region's overall viewshed. This same principle would hold true for lands partially disturbed or developed, particularly within the many scattered rural and agricultural communities within unincorporated Riverside County. In both cases, future development is generally consistent with both the surrounding area and the region's overall aesthetic. As a result, such changes generally would not represent significant conversion of open space to developed uses.

Possible Effect: This category addresses lands where there is potential for visible effects to aesthetics. Examples include completely undeveloped areas not even accessible by dirt road; vacant parcels of open land with minimal disturbances (e.g., no structures and perhaps only a few dirt roads) located in or adjacent to large areas of open space; or areas with significant, unique or noteworthy aesthetic features on or adjacent to the site (such as at the top of an open bluff, sites with ponds or waterfalls, large rock formations, scenic viewpoints, etc.) This category also includes proposed land uses of substantially greater intensity than that of the surrounding region and regional growth pattern. In general, this category captures locations in which conversion of open space to developed uses could visibly affect a viewshed or major aesthetic resource.

B. Results of Aesthetic Analysis

As a result of the above project analysis (see Appendix EIR-3), the areas proposed for specific land use-related changes as part of GPA No. 960 have been categorized as follows:

No Aesthetic Effect: A total of approximately 28,500 acres encompassing over 800 parcels were found to have no potential for aesthetic effects because they would be designated Open Space-Conservation Habitat (OS-CH) for biological conservation purposes or going to other types of conservation (OS-C or OS-W). This includes 460 parcels within policy areas and 283 parcels being acquired by the Riverside Conservation Authority. See Appendix EIR-3 for further details on these sites.

Of the various policy area and study area changes included in GPA No. 960, four would not have an adverse impact on scenic resources: El Cariso Rural Village Study Area (RVSA), Aguanga RVSA, Anza RVSA and the Agriculture/Potential Development Special Study Area. These four policy items are being deleted as part of GPA No. 960. Thus, their existing Land Use Designations would dictate suitability of any future development proposals. As a result, future development is expected to be less intense than that currently potentially permissible under the existing Study Area policies; aesthetic impacts derived from urbanization would also be lessened. In the case of Anza, a Policy Area would also cover the area formerly subject to the RVSA to further ensure that any future development is appropriate to the area's environmental constraints, including viewshed and aesthetics.

There are no new environmental impacts associated with this category of effect. The existing General Plan land use designations, which remain in effect for these areas, were analyzed under EIR No. 441 prepared for the 2003 RCIP General Plan. Also in this category are the Sky Valley and Chiriaco Summit areas as no land use changes are proposed for either of these under GPA No. 960.

Nominal Aesthetic Effect: A total of approximately 64,500 acres encompassing nearly 7,500 parcels were found to have nominal potential for aesthetic effects. See Appendix EIR-3 for list. This includes approximately 4,000 acres (nearly 440 parcels) proposed to change as a result of Riverside County-initiated land use designation

alterations. The total encompasses sites that have previously been disturbed (rural or suburban) and appear to contribute nominally to the existing aesthetic of the area.

Minor Aesthetic Effect: A total of roughly 480 parcels encompassing nearly 1,580 acres were found to have minimal to minor potential for aesthetic effects. See Appendix EIR-3 for list. In general, these parcels include changes to less-intense land use designations, sites already significantly disturbed or developed low-intensity uses on large parcels or combinations of these. In all cases, the proposed land uses were found to be consistent with that of the surrounding area.

Of the various policy area and study area changes included in GPA No. 960, several would potentially have minor aesthetic impact potential, for the same reasons listed above. These include: Meadowbrook and Good Hope Rural Village Study Areas (RVSAs), the proposed Northeast Business Park overlay and areas of scattered Land Use Designation changes associated with Flabob, Blythe and Riverside Municipal Airports. Potential future commercial development in rural areas permitted by the new Incidental Rural Commercial policy also falls into this category, though specific locations affected by this policy cannot be foreseen at this time.

In each of these cases, the potential land use changes would be consistent with existing development patterns and existing levels of disturbances on and around the areas. As a result, future development would generally represent a continuation of existing types and levels of aesthetic impacts (for example, development of residential lots amid scattered existing residences), rather than new, substantial impacts. There are minimal to minor aesthetic impacts associated with this category of effect. However, site-specific analysis required at the time of future development implementation would ensure that these impacts would be less than significant. Existing County of Riverside regulations and processing procedures, as well as General Plan polices, would further ensure that future development proposals in these areas consider and avoid potential aesthetic impacts. See Section 4.4.6 (Aesthetic and Visual Resources – Impacts and Mitigation) for full details on impacts and mitigation.

Possible Aesthetic Effect: Approximately 13 parcels encompassing nearly 400 acres were found to have the potential for major visible aesthetic impacts. See Appendix EIR-3 for list. In all but three cases, this is due to the change of land use designation from OS-CH, which does not allow any development, to a use that allows at least a minimal level of development, most commonly Open Space-Rural (OS-RUR), which allows one home per 20 acres. Such LUD changes were necessary to ensure that lands under private ownership have at least minimal development potential and the OS-RUR designation is the least-intense possible land use designation for residential use. Nevertheless, most of the sites falling into this category are located in, or immediately adjacent to, large expanses of scenic open space. Some are consistent with surrounding development patterns, but are located on the outer fringes of the developing area, adjacent to large areas of open space. It is for these reasons that parcels in this category may require discretionary actions related to aesthetics protection as part of any future development proposals. The nature and scope of such measures are discussed under Section 4.4.6, below. One policy area, Lakeland Village, which spans roughly 65 acres on nearly 300 parcels, is also included in this category because of its location surrounding Lake Elsinore.

C. Effects on Scenic Highways

Of all of the parcel-specific changes proposed under GPA No. 960, only one lies in proximity to a State-designated scenic highway. This project component encompasses approximately 36 acres on 10 parcels amidst the forests outside Idyllwild. The parcels are proposed to change from OS-CH to OS-RUR and are located in proximity to State Route 243 which winds through the San Jacinto Mountains. However, due to the proposed large lot sizes, parcel locations and existing development pattern (numerous large-lot single-family residences and dirt roads already occur immediately adjacent to the subject 36 acres), the proposed changes would not result in a significant adverse effect to the State scenic highway.

A number of parcel changes are also proposed along or near eligible scenic highways, including proposed Rural Residential uses in the Lake Elsinore region along Interstate 15 and Highway 74; proposed Medium-Density Residential development off Highway 74 in the Winchester/ Harvest Valley region and the changing of sites from Rural Desert to Rural Residential along State Route 111, on the east side of the Salton Sea. In total, this category includes nearly 80 parcels (570 acres). All of these proposed changes were found to have either minor or no impact potential for aesthetics due to similar uses nearby.

In addition to the parcel-specific issues discussed above, analysis was also made of the large-scale, non-specific land use changes included as part of GPA No. 960, such as new or revised Policy Areas, Rural Village Overlays and the like. Of these areas, it was found that none occur in proximity to any California scenic highways, but several occur near State- and County-eligible highways.

Specifically, along State-eligible Highway 74, the deletion of the El Cariso Rural Village Study Area and the Agriculture/Potential Development Special Policy Area would limit development potential to existing General Plan land use designations in these areas. Effects would be reduced by the proposed removal of the mechanisms that would have allowed more intense land use designations. Similarly, the deletion of the Aguanga Rural Village Study Area would limit development in the area lying along County-eligible Highway 79, as well as a small stretch of State-eligible Highway 79 running south of Highway 371 to the San Diego County border. All of these changes would have either minor or no effect on area aesthetics and scenic resources.

Along Highway 74, the Good Hope and Meadowbrook Rural Village Study Areas would be replaced with overlays providing specific alternate Land Use Designations to accommodate the anticipated urbanization of the region. These changes provide two or more possible land use options under the General Plan, which may ultimately increase development in these areas. The Ramona Expressway, also a County-eligible highway, would be affected by future development within the proposed Northeast Business Park Overlay in the Lakeview/Nuevo area. In the Blythe area, development within the area subject to the Airport Influence Area has the potential to be visible from Interstate 10, which is also a County-eligible scenic highway. Lastly, incidental rural commercial development potential may affect undetermined future sites, some of which may include locations along State-designated or eligible scenic highways, as well as County-eligible scenic highways.

These larger-scale changes may have potential for environmental impacts associated with this category of effect. However, these impacts would be rendered less than significant with the mitigation provided through regulatory compliance. Specifically, existing County of Riverside regulations and processing procedures, as well as General Plan polices, would further ensure that future development proposals in these areas consider and avoid potential impacts to scenic highways. See Section 4.4.6 for full details on impacts and mitigation.

D. Light, Glare and Effects on Palomar Observatory

As outlined above in Section 4.4.5, many of the proposed land use designation changes, overlays and policy area amendments would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses throughout Riverside County. Future development of the parcels changed pursuant to GPA No. 960 would contribute to changing the visual character of Riverside County over a period of time. Lighting associated with higher intensity and density uses may adversely affect nighttime and daylight glare on existing residential areas and add to existing commercial and light industrial development. Development on any of the parcels changed or affected by GPA No. 960 would contribute to the overall increase in light levels and skyglow within Riverside County.

For the Palomar Observatory, the County of Riverside has established two zones of potential lighting (skyglow) effects. The first, Zone A, extends 15 miles around Palomar Observatory. Due to its proximity, excessive

lighting within Zone A has the greatest potential to adversely affect Observatory operations. Among the foreseeable land use-related components of GPA No. 960, a total of approximately 20 acres would potentially be subject to future development within the Rancho California area, approximately 240 acres within the Aguanga area and up to 750 acres in the Anza area, as well as the area covered by the proposed Anza Policy Area itself. Within these areas, compliance with existing lighting control policies and ordinances, Ordinance No. 655, in particular, would be necessary to ensure additional skyglow does not adversely affect the scientific operations at Palomar Observatory. Parcels within Zone B, the 45-mile radius, are more numerous and would also comply with the applicable regulations to ensure appropriate control of any night lighting or skyglow.

These changes may have potential for environmental impacts associated with this category of effect. However, these impacts would be less than significant with the mitigation provided through regulatory compliance. Specifically, existing County of Riverside regulations and processing procedures, as well as General Plan polices, would further ensure future development proposals in these areas consider and avoid potential impacts due to light and glare. See Section 4.4.6 for full details on impacts and mitigation.

4.4.6 Aesthetic and Visual Resources - Impacts and Mitigation

A. Would the project have a substantial adverse effect on a scenic vista?

Impact 4.4.A – Adversely Affect Scenic Vistas: Future development consistent with the changes proposed by GPA No. 960 would increase rural, suburban and urban uses in select portions of the county, adversely affecting scenic vistas in some areas. Compliance with existing laws, regulatory programs, General Plan policies and existing Mitigation Measure 4.4.1A from EIR No. 441, help reduce potential impacts to scenic resources. Compliance with these, plus a new project-specific mitigation measure (4.4.A-N1) would ensure that future development accommodated by the project would have a less than significant impact on scenic vistas.

1. Analysis of Impact 4.4.A

Scenic vistas occur throughout the county and would potentially be affected by future development activities authorized pursuant to the revised land use designations and policies resulting from GPA No. 960. In some locations, changes to land use designations proposed under GPA No. 960 would allow future development projects that would result in the physical conversion of open space, vacant and agricultural lands to more urban types of uses. In a few areas, as outlined in Section 4.4.5, these conversions could contribute to the substantial alteration of existing scenic vistas or reduce access to these viewsheds.

As outlined above in Section 4.4.5, a total of approximately 400 acres scattered throughout eastern and western Riverside County were found to have to potential for major visible aesthetic effects. Most of these sites are located in, or immediately adjacent to, large expanses of scenic open space. These sites generally have limited access and the construction of roads leading to them would involve extending disturbances into areas of undeveloped viewsheds. For parcels in eastern Riverside County, this generally would mean affecting viewsheds of open, trackless desert or hills. In western Riverside County, this would mean affecting open views of local foothills or mountains.

The development of structures and facilities, particularly on vacant properties, is required to be consistent with the policies and regulatory programs outlines in the General Plan. Similarly, the replacement, expansion or refurbishment of existing development would also be required to conform to these policies and programs. Based

on their location, extent, density and configuration, future development consistent with General Plan changes made by GPA No. 960 could alter the characteristics of a local or regional viewshed or visual resource. This may also be the case for future development or infrastructure improvements that may occur in conjunction with project build out at locations not foreseeable at this time, including the introduction of incidental rural-commercial uses.

For the above reasons, a small subset of parcels and policy items arising from GPA No. 960 were found likely to require regulatory actions related to aesthetics protection as part of any future development proposals. As a group, the regulatory compliance measures outlined below would serve to reduce various potential aesthetic impacts, as indicated, for new development proposals, regardless of location. In addition, a new project-specific Mitigation Measure (4.4.A-N1) is also included to address this impact. All of these measures are assigned on a discretionary basis as a result of subsequent site-specific CEQA review. Together they would ensure that potential impacts to viewsheds and scenic vistas would be less than significant.

2. Regulatory Compliance for Impact 4.4.A

As explained below, compliance with the following existing laws, regulatory programs and General Plan policies would aid in avoiding or reducing potentially significant impacts to scenic vistas and viewsheds as a result of GPA No. 960.

a. Compliance with Riverside County Regulations

Several local regulations would reduce impacts related to substantial adverse effects on scenic vistas. These include, but are not limited to, the following: Riverside County Ordinance No. 460, which regulates the division of land within the county; Ordinance No. 461, which regulates road improvement standards and specifications for Riverside County right-of-ways and Riverside County Design Guidelines, which detail specific standards that establish and protect the aesthetic value of certain identified communities. Through these programs and ordinance standards, development near scenic vistas that would have the potential to adversely affect scenic vistas are highly regulated and addressed at various levels of Riverside County's review process.

Ordinance No. 460 - Regulating the Division of Land: This ordinance regulates the division of land in unincorporated Riverside County, including any improvements associated with the division. In relation to scenic highways and vistas, Ordinance No. 460 requires that the installation of electrical and communication distribution lines "be underground when alignments parallel or cross scenic highways, natural scenic and historic sites… when it is deemed feasible," to protect scenic vistas and highways.

Ordinance No. 461 - Road Improvement Standards and Specifications: This ordinance regulates and implements standards and engineering specifications for roads, bridges and other transportation-related facilities. This ordinance ultimately reinforces and details specific road standards for the regulations set in place by Ordinance No. 460, as well as ensuring that the road right-of-way is kept clear for the traveling public, therefore protecting the scenic highway designation.

Riverside County Design Guidelines: County Design Guidelines provide guidance for the aesthetic development of communities as envisioned by the community itself. County Design Guidelines uphold the visions for these communities by creating development standards which may include guidance for scale, intensity, architectural design, landscaping, light fixtures, sidewalks, trails, community logo, signage and other visual design features of a project. Application of these design standards would further ensure that potential aesthetic impacts are less than significant for development proposals.

b. Compliance with Existing General Plan Policies

Of the General Plan Policies listed in Section 4.4.3.C, above, the policies below provide mitigation that would reduce the impacts of future growth and development within the county on scenic vistas.

Policies LU 14.3, 14.4, 14.5, 14.8, 16.4, 16.5, 16.12, 19.1, 28.6, 28.10, 29.9, 30.8 and 31.5: These policies directly address avoiding impacts to scenic vistas by requiring that future development be designed in such a manner that the visual aspects within a particular area are enhanced and not degraded. Specific development standards such as setback and grading requirements are set forth in these policies in order to protect scenic vistas as well as those policies set in place for the protection of open space in order to ensure reduced impacts to scenic vistas.

Policies LU 14.6 and 14.7: These two policies specifically address the protection of scenic vistas through the regulation of signage, including outdoor advertising displays for Riverside County.

Policies C 5.3 and C 19.1: These policies address circulation-related issues such as parking and maintaining those roadways that have been designated as official or eligible scenic highways.

c. Compliance With Proposed New or Revised General Plan Policies

The following revised policy of the Riverside County General Plan will further prevent significant impacts to scenic vistas. See Section 4.4.3.C for full text of this policy.

Policy LU 4.1: This policy directly addresses avoiding impacts to scenic vistas by requiring that future development be designed in such a manner that the visual aspects within a particular area are enhanced and not degraded. Specific development standards such as setback and grading requirements are set forth in these policies in order to protect scenic vistas as well as those policies set in place for the protection of open space in order to ensure reduced impacts to scenic vistas.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, which was certified for the 2003 RCIP General Plan, it was determined that in order to reduce impacts associated with scenic vistas, mitigation would be necessary. The mitigation measure listed below is from EIR No. 441 and shall also apply as part of the mitigation for Program EIR No. 521.

Existing Mitigation Measure 4.4.1A: Development projects shall be subject to the requirements of all relevant guidelines, including the community center guidelines, Riverside County supervisorial district guidelines and all applicable standards, policies and/ or regulations of the County of Riverside or other affected entities pertaining to scenic vistas and aesthetic resources. Factors considered in these guidelines include the scale, extent, height, bulk or intensity of development; the location of development; the type, style and intensity of adjacent land uses; the manner and method of construction, including materials, coatings and landscaping; the interim and/or final use of the development; the type, location and manner of illumination and signage; the nature and extent of terrain modification required; and the potential effects to the established visual characteristic of the project site and identified scenic vista or aesthetic resource.

3. Additional Mitigation Measure for Impact 4.4.A

As detailed below, a new mitigation measure is proposed in order to further reduce potential adverse impacts related to scenic vistas pursuant to GPA No. 960. For parcels in which future development would potentially

result in a major visible effect to an existing viewshed or significant aesthetic feature, the following new project mitigation measure shall be required. Compliance with this measure would ensure a potentially significant impact is avoided by preventing inappropriate development in scenic areas.

NEW Mitigation Measure 4.4.A-N1: No development shall be approved for parcels without adequate legal access and adequate physical access. Adequate and accessible circulation facilities must also exist to meet the demand of the proposed land use.

4. Finding on Significance for Impact 4.4.A

Compliance with the above existing regulations, programs, policies and existing mitigation measures, including new Mitigation Measure 4.4.A-N1, would ensure that impacts to scenic vistas associated with future development consistent with the proposed project would be less than significant.

B. Would the project substantially damage trees, rock outcroppings and historical buildings within a State scenic highway?

Impact 4.4.B – Adversely Affect Scenic Resources Within State Scenic Highways: Future activities consistent with GPA No. 960 would increase development of rural, suburban and urban uses, potentially substantially damaging scenic resources in some areas. Compliance with existing regulatory programs, General Plan policies and existing Mitigation Measure 4.4.1A from EIR No. 441 would reduce potential impacts to scenic resources to less than significant.

1. Analysis of Impact 4.4.B

Scenic resources occur throughout Riverside County and would potentially be affected by development activities consistent with the revised land use designations and policies of GPA No. 960. The land use-related changes proposed under GPA No. 960 would allow for future development projects that would result in the physical conversion of open space, vacant and agricultural lands to more urban types of uses. These conversions could contribute to the substantial alteration of existing scenic resources on or in the vicinity of individual sites.

As outlined in Section 4.4.5, previously, in areas located in, or immediately adjacent to, large expanses of scenic open space have the greatest potential for adverse effects to scenic resources, as such areas tend to contain undisturbed or minimally-altered naturally-occurring scenic resources, such as individual trees and stands, ponds, lakes, waterfalls and wetlands, rocks, groupings of boulders and other scenic geological features.

In addition, impacts to aesthetic resources can include changes in the built environment, particularly to historic structures that capture the aesthetic of bygone eras. This is most readily apparent for historic buildings along a State scenic highway. GPA No. 960 land use changes include only one site located near a State scenic highway, Highway 243 in the San Jacinto Mountains outside of Idyllwild. The 36-acre site consists of 13 parcels of forested land, some of which are sited with single large-lot homes.

Besides the "possible effect" category, there are also sites from the "minor effect" category that may have potential for adverse impacts to the aesthetics of the built environment, including historic structures or other notable man-made features. This category, in particular, includes sites located in rural and less-dense suburban areas. Such areas may have a greater potential for historic structures, such as those associated with Riverside County's long agrarian past.

The development of structures and facilities, particularly on vacant properties, would be required to be consistent with the policies and regulatory programs outlined in the General Plan (see below). Similarly, the replacement, expansion or refurbishment of existing development, including any historic buildings or scenic structures, and any within a scenic highway, would also be required to conform to these policies and programs. Based on its location, extent, density and configuration, future development consistent with the General Plan changes made by GPA No. 960 would be subject to existing laws and regulations to ensure that no significant impacts would occur.

For the above reasons, parcels and policy items arising from GPA No. 960 from both the "possible effect" and "minor effect" categories potentially require regulatory actions related to aesthetics protection as part of any future development approvals. As a group, the regulatory compliance measures outlined below would serve to reduce potential aesthetic impacts for all new development proposals, regardless of location. As such, they would ensure that potential aesthetic impacts remain less than significant.

2. Regulatory Compliance for Impact 4.4.B

The above analysis indicates this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, compliance with the following regulatory programs, General Plan policies and existing EIR No. 441 mitigation measure would ensure that adverse impacts to trees, rock outcroppings and historical buildings within a State scenic highway are less than significant. Through these policies and programs, development near trees, rock outcroppings and historical buildings within State scenic highways are regulated and addressed at all levels of Riverside County's development review process.

a. Compliance with State and County Regulations

State and local regulations exist that would reduce impacts related to trees, rock outcroppings and historical buildings within a State scenic highway, including, but not limited to, the following:

California Scenic Highway Program: This program of the California Department of Transportation (Caltrans) provides for the designation of scenic or eligible scenic highways and corridors to enhance and protect the natural scenic beauty along California's highways. It includes development standards for official scenic highways and also by requires that local governments establish and implement standards that promote and protect the appearance of the scenic highway. Local governments are required to protect the visual character of a site and its surroundings through the development of standards that include:

- Regulation of land use and density of development (i.e., density classifications and types of allowable land uses).
- Detailed land and site planning (i.e., permit or design review authority and regulations for the review of proposed developments).
- Control of outdoor advertising (i.e., prohibition of off-premise advertising signs and control of on-premise advertising signs).
- Careful attention to and control of earthmoving and landscaping (i.e., grading ordinances, grading permits, design review authority, landscaping and vegetation requirements).

- Regulating the design and appearance of structures and equipment (i.e., design review authority and regulations for the placement of utility structures, microwave receptors, wireless communication towers, etc.).

Riverside County currently addresses the protection of scenic highways through the implementation of programs and ordinances that address each of these five standards. The County of Riverside addresses the regulation of land use and the density of development through the General Plan's Land Use Designations (LUDs). The LUDs are separated into five Foundation Components that guide the pattern of development and the extent of land uses. Detailed site and land planning, along with the control of outdoor advertising displays, are regulated through Riverside County's Land Use Ordinance No. 348. This ordinance regulates specific land uses and associated development standards to ensure consistency with Riverside County's General Plan. Riverside County Ordinance No. 457, Building Codes and Fees Ordinance, regulates and controls earthmoving, while Ordinance No. 859 regulates landscaping within the county. Lastly, a number of Community Design Guidelines address the design and appearance of structures and equipment in the county in order to ensure a consistent character within individual communities. Ordinance No. 348 (Section 19.400) also addresses cell towers and related equipment, including aesthetic standards for such sites

Ordinance No. 348 - Land Use Ordinance of Riverside County: As mentioned previously, this ordinance establishes allowable uses of land and sets standards for what and how land may be developed. In regards to aesthetics, Ordinance No. 348 specifically requires that all Wind Energy Conversion Systems (WECS) maintain specific setbacks from all State- or County-eligible or designated scenic highways, thereby reducing potential adverse impacts to scenic highways.

Ordinance No. 460 - Regulating the Division of Land: This ordinance regulates the division of land in unincorporated Riverside County, including any improvements associated with the division. In relation to scenic highways and vistas, Ordinance No. 460 requires that installation of electrical and communication distribution lines "be underground when alignments parallel or cross scenic highways, natural scenic and historic sites…when it is deemed feasible," in order to protect these scenic resources. As scenic highways and vistas add to the visual character of a site and its surroundings, this ordinance also reduces potential adverse impacts to the visual character of those areas impacted by the project.

Ordinance No. 461 - Road Improvement Standards and Specifications: No. 461 regulates and implements standards and engineering specifications for roads, bridges and other transportation-related facilities. This ordinance ultimately reinforces and details specific road standards for the regulations set in place by Ordinance No. 460 as well as ensuring that road rights-of-way are kept clear for the traveling public, therefore protecting scenic highway designations as well as maintaining the visual character of an area.

Riverside County Design Guidelines: Riverside County Design Guidelines (as set forth in General Plan Appendix J, among others) provide guidance for the aesthetic development of communities as envisioned by the community itself. Riverside County Design Guidelines uphold the visions for these communities by creating development standards which may include guidance for scale, intensity, architectural design, landscaping, light fixtures, sidewalks, trails, community logo, signage and other visual design features of a project. Application of these design standards would further ensure that potential impacts to the visual character of an area are less than significant for development proposals.

Riverside County Oak Trees Design Guidelines: These guidelines address the treatment of parcels with existing oak tree resources as well as design provisions for development of those parcels. The guidelines protect oak trees as a scenic resource in a number of ways including, but not limited to, requiring a biological study of onsite vegetation, encouraging development to be designed in a manner where any disturbed land avoids oak trees

as well as the protected zone of any oak tree. Compliance with these guidelines would reduce potential impacts to less than significant.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.4.3.C above, several in particular provide mitigation for impacts associated with development near trees, rock outcroppings and historical buildings within a State scenic highway. Implementation of these General Plan policies would reduce even further the impacts of future growth and development upon these scenic resources. Specifically:

Policies OS 9.3 and 9.4: These policies directly address this impact by conserving trees and native vegetation for aesthetic purposes among other reasons. As such, they protect existing visual resources within Riverside County from the effects of future development.

c. Compliance with Proposed New or Revised General Plan Policies

Policy LU 4.5: This policy directly address allowing historical buildings to vary from regulatory codes in order to preserve the historical character of Riverside County, thereby maintaining existing aesthetic resources within Riverside County and further reducing impacts.

Policy C 20.1: This policy directly addresses this impact by conserving trees and native vegetation for aesthetic purposes among other reasons. As such, they protect existing visual resources within Riverside County from the effects of future development.

d. Compliance with Existing Mitigation Measures from EIR No. 441

For the same reasons as for Impact 4.4.A, Mitigation Measure 4.4.1A from EIR No. 441 also applies here. Hence, this measure is also included as an existing programmatic compliance measure for this project as well.

3. Finding on Significance for Impact 4.4.B

Compliance with the above regulatory programs, policies and mitigation measures would ensure that trees, rock outcroppings and historical buildings within a State scenic highway are not adversely impacted by this project or future development. As a result, impacts to trees, rock outcroppings and historical buildings within a State scenic highway would be less than significant.

C. Would the project substantially degrade the existing visual character or aesthetic quality of a site and its surroundings?

Impact 4.4.C – Adversely Affect Existing Visual Character: The existing visual character or aesthetic quality of some sites affected by the proposed project may be altered by future activities consistent with proposed GPA No. 960 land use changes. Compliance with existing regulatory programs, existing General Plan policies, existing Mitigation Measure 4.4.1A from EIR No. 441 and new project-specific Mitigation Measure 4.4.A-N1 would ensure that potential adverse impacts to visual character resulting from GPA No. 960 are less than significant.

1. Analysis of Impact 4.4.C

It is anticipated that future activities consistent with GPA No. 960 land use changes would slightly increase the amount of urban development within Riverside County. Where such development occurs on vacant, undeveloped and generally open land, this would potentially degrade the existing visual character in some areas. This includes many of the GPA No. 960-affected sites categorized with "possible effect" potential. On these sites, long-term aesthetic impacts would be primarily associated with the change in visual character resulting from conversion of previously vacant lands to developed uses. This would be particularly noticeable in areas that currently are predominantly rural, agricultural or vacant (open space).

The proposed land use overlays and new land use designations would include a combination of low to medium-high density residential, commercial, light industrial, office and business park uses, civic uses, transit facilities, recreational uses and open space uses. The Rural Incidental Commercial and Sphere of Influence policies would allow for small-scale commercial uses and suburban residential lots in rural and semi-rural areas. This may significantly change the visual character of sites and surrounding areas. However, the specific locations in which this may occur as a result of the new policies cannot be foreseen at this time. Thus, any potential future impacts must be addressed programmatically.

Based on its location, extent, density and configuration, future development may alter the characteristics of a locally or regionally significant visual resource. Development proposed in areas subject to adopted Design Guidelines shall be required to comply with the aesthetic measures of those guidelines. Such sites would be subject to County of Riverside design review, as appropriate to their nature and location, to ensure aesthetic impacts have been ameliorated. Compliance with existing regulations, EIR No. 441 mitigation measures and new project-specific Mitigation Measure 4.4.A-N1 would ensure that impacts are less than significant.

2. Regulatory Compliance for Impact 4.4.C

As detailed and explained below, compliance with the following regulations, programs and General Plan policies are sufficient to ensure that adverse impacts associated with visual character as a result of GPA No. 960 would be less than significant for the majority of the affected areas within Riverside County. The previously discussed 400 acres (13 parcels) of land that have been identified as having the potential for major visible aesthetic impacts, plus any site not presently foreseeable arising as the General Plan builds out, would be reduced to less than significant through the mitigation of proposed New Mitigation Measure 4.4.A-N1, as well as the existing regulations, programs and General Plan policies described below.

a. Compliance with Riverside County Regulations

Local regulations exist that would reduce impacts related to substantial adverse effects on the visual character of an area. These include, but are not limited to, the following: Ordinance No. 460, Ordinance No. 461 and the Riverside County Design Guidelines. Through these programs and ordinance standards, developments that would have the potential to adversely affect the visual character of an area are highly regulated and addressed at various levels of Riverside County's review process.

Ordinance No. 348 - Land Use Ordinance of Riverside County: Among other things, this ordinance protects the people and property of Riverside County from development of unsuitable land uses and aims to ensure that built areas are developed safely and with minimal conflict with surrounding lands. In regards to the existing visual character and aesthetic quality of a site and its surroundings, Ordinance No. 348 identifies requirements for landscaping associated with development proposals. The landscaping of development projects

enhances the visual character and aesthetic quality of a site and its surroundings, thereby maintaining and many times improving the existing visual character and aesthetic quality of a site.

Ordinance No. 457 - Building Codes and Fees Ordinance: In relation to the existing visual character and aesthetic quality of an area, Ordinance No. 457 requires development projects that involve cut and fill slopes of particular vertical heights to be landscaped in order to provide proper erosion control measures. Erosion control landscaping plans must be submitted to and approved by the Riverside County Building and Safety Department prior to installation. Landscaping these cut and fill slopes enhances the existing visual character and aesthetic quality of sites and the surrounding areas.

Ordinance No. 460 - Regulating the Division of Land: In relation to scenic highways and vistas, Ordinance No. 460, requires that installation of electrical and communication distribution lines "be underground when alignments parallel or cross scenic highways, natural scenic and historic sites…when it is deemed feasible," in order to protect these scenic resources. As scenic highways and vistas add to the visual character of a site and its surroundings, this ordinance also reduces potential adverse impacts to the visual character of those areas impacted by the project.

Ordinance No. 461 - Road Improvement Standards and Specifications: This ordinance ultimately reinforces and details specific road standards for the regulations set in place by Ordinance No. 460 as well as ensuring that road rights-of-way are kept clear for the traveling public, therefore protecting scenic highway designations as well as maintaining the visual character of an area.

Riverside County Design Guidelines: Riverside County Design Guidelines (as set forth in General Plan Appendix J, among others) provide guidance for the aesthetic development of communities as envisioned by the community itself. Riverside County Design Guidelines uphold the visions for these communities by creating development standards which may include guidance for scale, intensity, architectural design, landscaping, light fixtures, sidewalks, trails, community logo, signage and other visual design features of a project. Application of such design standards would further ensure that potential impacts to the visual character of an area are less than significant for development proposals.

b. Compliance with Existing General Plan Policies

Implementation of the General Plan policies listed in Section 4.4.3.C provide mitigation for impacts associated with the visual character of an area and would reduce the impacts of future growth and development in Riverside County on visual character. Specifically:

Policy LU 14.8: This policy directly addresses preserving the visual character of an area by prohibiting the blocking of public views by solid walls and thereby maintaining visual character.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised policy of the Riverside County General Plan will further prevent significant impacts that would adversely affect existing visual character. See Section 4.4.3.C for full text of each.

Policy LU 4.1: This policy directly addresses avoiding adverse impacts to the visual character of an area by requiring that new developments be located and designed to visually enhance and not degrade the character of the surrounding area through a number of concepts including, preserving the natural features, such as unique natural terrain, drainage ways and native vegetation, wherever possible.

d. Compliance with Existing Mitigation Measures from EIR No. 441

For the same reasons as for Impact 4.4.A, existing Mitigation Measure 4.4.1A from EIR No. 441 also applies here. Hence, this measure is also included as an existing programmatic compliance measure for this project as well.

3. Additional Mitigation Measures for Impact 4.4.C

As detailed below, a new mitigation measure is being proposed in order to further reduce potential adverse impacts related to scenic vistas. For parcels in which future development would potentially result in a major visible effect to an existing viewshed or significant aesthetic feature, new project-specific Mitigation Measure 4.4.A-N1, as set forth under Impact 4.4.A, above, shall be required. Compliance with this measure would ensure a potentially significant impact is avoided by preventing inappropriate development in scenic areas.

4. Finding on Significance for Impact 4.4.C

With the implementation of, and compliance with, the above-listed existing regulations, programs and General Plan policies, including existing Mitigation Measure 4.4.1A from EIR No. 441, plus newly proposed Mitigation Measure 4.4.A-N1, GPA No. 960 would have less than significant impacts on the existing visual character. Aesthetic quality impacts and impacts resulting from conversion of open space or undisturbed areas to developed uses would also be reduced to less than significant.

D. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the areas?

Impact 4.4.D – Cause Adverse Light and Glare Effects: Future development consistent with GPA No. 960 would introduce new sources of light and glare which would adversely affect day and/or nighttime views in some areas. Compliance with a variety of existing regulatory programs, including General Plan policies and existing measures from EIR No. 441, would ensure that light and glare impacts to views are less than significant.

1. Analysis of Impact 4.4.D

Future development consistent with the land use changes of GPA No. 960 would increase the effects of light and glare on existing and future residences in some areas. New light and glare would arise from the addition of residences, commercial uses, public facilities and other structures. Light and glare would be emitted by developed uses with artificial lighting, for example, parking lots, commercial landscaped areas, exterior signage, interior building lighting and residential yards. Signage that is lit at night and visible from roadways is also a particular issue.

Light from all of these new uses would also contribute to nighttime light pollution levels and skyglow, i.e., the overall lightening of the night sky resulting from illumination of air and water particles in the atmosphere. Glare, that is, reflected sunlight or artificial light that interferes with vision or navigation may also arise from any of these sources, as well as from the use of reflective materials on building exteriors. Certain industrial processes and agricultural facilities, such as fish ponds or solar farms, can also be significant sources of glare.

Sites categorized with "possible effect" for aesthetic impacts are also generally those most likely to contribute to potentially significant nighttime lighting impacts due to their locations in previously undisturbed open areas or

along urbanizing fringes. Sites on either the "minor effect" or "nominal effect" lists would also potentially introduce new sources of light and glare to their locales, particularly where increased intensities are proposed. However, because of the urban or suburban nature of most of these sites and their typically nominal aesthetic value, individual site impacts would be less than significant. Nevertheless, all development from GPA No. 960 would contribute incrementally to the cumulative light pollution levels and skyglow experienced in Riverside County and Southern California.

2. Regulatory Compliance for Impact 4.4.D

As explained below, compliance with the following existing regulations, design guidelines, General Plan policies and existing EIR No. 441 mitigation measures are sufficient to ensure adverse effects associated with light and glare impacts as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Local regulations that would reduce impacts related to light and glare include, but are not limited to, Riverside County Ordinance No. 461, which includes standards for residential lighting, as well as lighting for highways, roadways, intersections and traffic signage, and Ordinance No. 655, which addresses standards for acceptable nighttime lighting within Riverside County and protection of the Palomar Observatory. The following County of Riverside regulations would also aid in reducing impacts:

Ordinance No. 348 - Land Use Ordinance of Riverside County: In regards to new sources of light and glare that would adversely affect day or nighttime views, Ordinance No. 348 specifically requires compliance with Ordinance No. 655 and identifies standards related to lighting for signs, outdoor advertising displays, mini-warehouses and recreational vehicle parks. Compliance with Ordinance No. 348 reduces potential adverse impacts to the day or nighttime views from light and glare.

Ordinance No. 461 - Road Improvement Standards and Specifications: This ordinance includes standards for residential lighting, as well as lighting for highways, roadways, intersections and traffic signage, requiring that all lighting standards, including private residential lighting comply with Ordinance No. 655. Compliance with this ordinance would further reduce any potential adverse light and glare impacts as a result of future development from the project.

Ordinance No. 655 - Regulating Light Pollution: This ordinance addresses standards for acceptable nighttime lighting within Riverside County and measures related to development within 15-45 miles of the Palomar Observatory by requiring the usage of low pressure sodium lamps for outdoor lighting fixtures and regulating the hours of operation for commercial/ industrial uses in order to reduce lighting impacts on the observatory. Compliance with Ordinance No. 655 would further reduce potential light and glare impacts.

Ordinance No. 915 - Regulating Outdoor Lighting: The intent of this ordinance is to establish a countywide standard for outdoor lighting that would generally prohibit light trespass and protect the health, property and well-being of Riverside County's residents. The ordinance regulates light trespass in areas that fall outside of the 45-mile radius of Ordinance No. 655 (see above). It requires all outdoor luminaries to be located, adequately shielded and directed such that no direct light falls outside the parcel of origin or onto the public right-of-way. Compliance with Ordinance No. 915 would further reduce potential light and glare impacts.

Riverside County Design Guidelines: Application of the Riverside County Design Guidelines would further ensure that impacts associated with lighting and glare are less than significant for development proposals resulting

from GPA No. 960. For the same reasons as for Impact 4.4.A, and due to various standards set forth in the design guidelines requiring hooded, shielded or low-to-the-ground lighting. Standards for backlighting and indirect lighting to promote "night skies" are also included in the Guidelines and would reduce potential lighting and glaring impacts.

b. Compliance with Existing General Plan Policies

Of the General Plan Policies listed in Section 4.4.3.C, above, Policy LU 14.6, in particular provides mitigation for potential impacts associated with light and glare. This policy directly addresses prohibiting offsite outdoor advertising displays that are visible from designated and eligible scenic highways. By regulating billboards and signs, it would reduce the obstruction of visual resources from structures and from outdoor advertising displays. As a result, it would reduce any potential light or glare impacts resulting from future growth and development.

c. Compliance With Proposed New or Revised General Plan Policies

Revised Policy LU 4.1 would further prevent significant impacts associated with light and glare effects. It requires that new developments be located and designed to visually enhance and not degrade the character of the surrounding area through consideration of a number of concepts, including, mitigating noise, odor, lighting and other impacts on surrounding properties. This policy would ensure that potential light and glare impacts from new development are reviewed and addressed early on during the entitlement process. See Section 4.4.3.C for full text of the policy.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, which was certified for the 2003 RCIP General Plan, it was determined that to fully reduce impacts associated with light and glare, several mitigation measures were also necessary. These mitigation measures from EIR No. 441 are listed below and shall also apply as part of the mitigation for this Program EIR No. 521.

Existing Mitigation Measure 4.4.2A: Riverside County shall require that sources of lighting within the General Plan area be limited to the minimum standard required to ensure safe circulation and visibility.

Existing Mitigation Measure 4.4.2B: Riverside County shall require street lighting to be limited to intersections and other locations that are needed to maintain safe access (e.g., sharp curves).

Existing Mitigation Measure 4.4.2C: Riverside County shall require exterior lighting for buildings to be of a low profile and intensity.

Existing Mitigation Measure 4.4.2D: The County [of Riverside] shall establish a liaison with California Institute of Technology [which operates the Palomar Observatory] to ensure "dark skies" preservation procedures are incorporated, as necessary, in future County ordinances.

Existing Mitigation Measure 4.4.2E: The County [of Riverside] shall participate in Palomar Observatory's "dark sky" conservation area.

3. Finding on Significance for Impact 4.4.D

With the implementation of, and compliance with, the above-listed regulations, design standards and guidelines, policies and existing mitigation measures, potential adverse visual resource impacts would be avoided, minimized or reduced. As a result, light and glare impacts associated with future development consistent with the proposed project would be less than significant.

E. Would the project interfere with the nighttime use of the Palomar Astronomical Observatory, as protected through Riverside County Ordinance No. 655?

Impact 4.4.E – Interfere with Nighttime Use of the Palomar Astronomical Observatory: Future development accommodated by GPA No. 960 would introduce new sources of light within 15-45 miles of the Palomar Observatory, which requires dark skies to function. New sources of light resulting from GPA No. 960 would also contribute incrementally to the overall skyglow of the region, which interferes with nighttime operations at the Observatory. Compliance with a variety of existing regulatory programs, including General Plan policies, County of Riverside ordinances, Ordinance No. 655 (Regulating Light Pollution) in particular, and existing measures from EIR No. 441, would ensure that light impacts on operations at Palomar Observatory are less than significant.

1. Analysis of Impact 4.4.E

Future development consistent with the land use changes resulting from GPA No. 960 would increase the amount of night lighting in the region and contribute incrementally to the region's skyglow. New light would arise from the addition of a variety of new development, most particularly commercial uses with outdoor parking or lit signage. The scope and extent of lighting impacts anticipated as a result of GPA No. 960 are analyzed under Impact 4.4.D, above.

To ensure that nighttime skies would not be brightened, astronomical observatories generally need to be located at least 30 to 40 miles from large, lit urban areas. The Palomar Observatory is located approximately 5.5 miles south of the Riverside-San Diego county line. Originally, the observatory was located in a generally non-urbanized area. However, in the century since the observatory's founding, southwestern Riverside County, particularly the cities of Temecula and Murrieta have grown significantly, greatly increasing the nighttime lighting and skyglow of the region in the process. While not located within Riverside County, astronomical observations at Palomar Observatory rely on dark skies and are affected by increases in light sources within Riverside County.

Some areas expected to develop consistent with GPA No. 960 changes are located within Zone A (15 miles or less from Palomar), including any future development within the Anza Policy Area, and many sites are located within Zone B (15 to 45 miles from the observatory). Sites within these restriction zones (Zones A and B) would be subject to protection and lighting restrictions under Ordinance No. 655. Compliance with this ordinance would ensure that additional light sources are not individually significant or contribute to cumulatively significant light increases in the region.

2. Regulatory Compliance for Impact 4.4.E

As detailed and explained below, compliance with the following existing regulations, programs, design standards and guidelines, General Plan policies and EIR No. 441 mitigation measures are sufficient to ensure that adverse effects associated with the Palomar Astronomical Observatory as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following existing laws, regulatory programs, General Plan policies and existing mitigation measures are sufficient to ensure that adverse impacts associated with the Palomar Astronomical Observatory as a result of GPA No. 960 would be less than significant. Through these policies, programs and standards, development that would have the potential to adversely impact the observatory are highly regulated and addressed at all levels of Riverside County's development review process.

Ordinance No. 348 - Land Use Ordinance of Riverside County: In regards to the Palomar Astronomical Observatory, this ordinance specifically requires compliance with Riverside County Ordinance No. 655 and identifies standards related to lighting for signs, outdoor advertising displays, mini-warehouses and recreational vehicle parks. Compliance with Ordinance No. 348 reduces potential adverse impacts to the Palomar Astronomical Observatory.

Ordinance No. 461 - Road Improvement Standards and Specifications: The ordinance includes standards for residential lighting, as well as lighting for highways, roadways, intersections and traffic signage. It also requires that all lighting standards, including private residential lighting, comply with Ordinance No. 655. Compliance with Ordinance No. 461 would further reduce any potential adverse light and glare impacts as a result of GPA No. 960 and future development.

Ordinance No. 655 - Regulating Light Pollution: This ordinance addresses standards for acceptable nighttime lighting within Riverside County and measures related to development within 15-45 miles of the Palomar Observatory by requiring the usage of low pressure sodium lamps for outdoor lighting fixtures and regulating the hours of operation for commercial/ industrial uses in order to reduce lighting impacts on the Observatory. Both Zones A and B require the use of low-pressure sodium lamps, shielded outdoor lighting, restricted hours of operation as well as restrictions for outdoor advertising displays. The specific zone would also detail the lamp types, parking lot, walkway and security lighting as well as the decorative lighting that is allowable or prohibited for each zone. Compliance with Ordinance No. 655 would further reduce potential impacts to the Palomar Astronomical Observatory.

Riverside County Design Guidelines: Application of the Riverside County Design Guidelines would further ensure that impacts associated with lighting and glare are less than significant for development proposals resulting from GPA No. 960 for the same reasons as for Impact 4.4.A and due to various standards set forth in the design guidelines requiring hooded, shielded or low-to-the-ground lighting. Standards for backlighting and indirect lighting to promote "night skies" also included in the Guidelines in order to reduce effects on Palomar Astronomical Observatory.

b. Compliance With Proposed New or Revised General Plan Policies

Of the General Plan policies listed in Section 4.4.3.C, above, Policy LU 4.1, in particular provides mitigation for potential impacts associated with the Palomar Astronomical Observatory. Implementation of this General Plan policy related to the Observatory would reduce any potential impacts of future growth and development. Specifically:

Policy LU 4.1: This policy requires that new developments be located and designed to visually enhance and not degrade the character of the surrounding area through consideration of a number of concepts, including, mitigating noise, odor, lighting and other impacts to surrounding properties. This policy ensures that potential adverse impacts to the Palomar Observatory from new development would be reviewed and addressed early on during the entitlement process.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, five mitigation measures were adopted to reduce the impact of light and glare to less than significant levels. Since measures that reduce night lighting in general also serve to mitigate light impacts on the Palomar Observatory and because there measures remain applicable to the areas covered by GPA No. 960, continued compliance with these existing measures would also reduce impacts to the observatory.

Existing Mitigation Measure 4.4.2A: Riverside County shall require that sources of lighting within the General Plan area be limited to the minimum standard required to ensure safe circulation and visibility.

Existing Mitigation Measure: 4.4.2B: Riverside County shall require street lighting to be limited to intersections and other locations that are needed to maintain safe access (e.g., sharp curves).

Existing Mitigation Measure 4.4.2C: Riverside County shall require exterior lighting for buildings to be of a low profile and intensity.

Existing Mitigation Measure 4.4.2D: The County [of Riverside] shall establish a liaison with California Institute of Technology [which operates the Palomar Observatory] to ensure "dark skies" preservation procedures are incorporated, as necessary, in future County ordinances.

Existing Mitigation Measure 4.4.2E: The County [of Riverside] shall participate in Mount *[sic]* Palomar Observatory's "dark sky" conservation area.

3. Finding on Significance for Impact 4.4.E

Implementation of, and compliance with, the above listed regulations, design standards and guidelines, General Plan policies and existing mitigation measures would ensure that potential adverse impacts to the Palomar Astronomical Observatory are avoided, minimized or reduced. As a result, impacts to the Palomar Astronomical Observatory associated with future development accommodated by the proposed project would be less than significant.

4.4.7 Significance After Mitigation for Aesthetic and Visual Resources

Development and implementation activities resulting from the proposed project, General Plan Amendment No. 960, would be subject to a number of existing General Plan policies, existing Riverside County Ordinances, existing mitigation measures from EIR No. 441 and newly proposed project-specific Mitigation Measure 4.4.A-N1, as identified above. These mitigation and regulatory compliance measures would reduce to below the level of significance any potential adverse impacts to scenic vistas, scenic resources, including, but not limited to, trees, rock outcroppings and historical buildings within State scenic highways, and the existing visual character and aesthetic quality of urban, suburban and other already-developed areas. They would also ensure that impacts associated with light and glare adversely affecting day or nighttime views, as well as nighttime use of Palomar Astronomical Observatory, are also less than significant. For impacts to the existing visual character and aesthetic quality of 400 acres that would transition from undisturbed open space to developed urban, suburban or rural uses as a result of GPA No. 960 and have the potential for major visible impacts, the above measures would

reduce impacts to less than significant. In total, all project-related visual and aesthetic effects would ultimately be less than significant with the mitigation cited.

Section 4.5

Agricultural and Forestry Resources

Section 4.5
Agricultural and Forestry Resources

4.5.1 Introduction

Riverside County's agricultural industry plays a vital role in the local economy and consistently ranks among the most profitable in California. The wide variety of climates and soil types within the county allows a diverse array of crops to be grown. The industry provides a large number of jobs associated with the growing, harvesting, processing, packing and shipping of produce. In terms of dollar value, agriculture is today the largest industry in Riverside County, providing employment for a notable portion of Riverside County's population. This industry creates revenues over triple the base gross value of the products grown and raised here in Riverside County. Currently, agriculture faces continuing pressure from urbanization, water availability, foreign competition and rising production costs. Despite these pressures, the areas which remain in agricultural production represent a significant open space and economic resource for Riverside County.

The Riverside County General Plan defines productive agricultural lands as those "involved in a long-term, substantial investment to agricultural use and with long-term economic viability for agricultural use." Factors affecting the economic viability of these areas include weather, water prices, crop selection, management techniques, commodity prices, new technology tax structure and proximity of developed lands.

Riverside County's forestry resources also play a vital role in establishing the character of Riverside County; the Cleveland National Forest frames southwestern Riverside County and the San Bernardino National Forest frames edges of eastern Riverside County. Both the Cleveland National Forest and the San Bernardino National Forest are part of the Sierran montane range. Montane forests can be found all over the world; however, the montane forest is the most complex bio-region in North America and is home to many animal species. The County of Riverside aims to preserve its forest resources within the Cleveland and San Bernardino National Forests through careful management of the forest ecosystem, protection of forest resources and discouraging and limiting the development of land uses that conflict with valuable forest lands.

4.5.2 Existing Environmental Setting - Agricultural and Forestry Resources

A. Agricultural Production in Riverside County

Agricultural resources include lands cultivated for crops for both human and animal use, providing livestock forage or as a source of fiber or other raw materials. Commercial agricultural activities also include non-cultivation (ranch) activities, such as the raising of livestock for production of meat, milk and dairy products, as

well as fiber and other non-edible products (wool, leather, etc.). Also in this category are aquaculture (fish farms) and the poultry industry, which produces poultry meat, eggs, chicks and other products. In total, the Riverside County Agricultural Commissioner tracks nine categories of agricultural production: citrus; tree and vine crops; vegetables, melons and miscellaneous crops; field and seed crops; livestock and poultry; livestock and poultry products; nursery stock production (i.e., ornamental plants, cut flowers, Christmas trees, etc.); aquaculture and apiculture (bee keeping). There is no commercial forestry or timber production industry within Riverside County other than Christmas tree farms of nursery stock production (that is, cultivated, rather than wild-harvested).

Farms within Riverside County produce over 50 different varieties of crops, from bell peppers to broccoli, dates to potatoes and many others. Livestock raised commercially in Riverside County includes everything from ducks to crayfish, in addition to cattle, sheep and chickens. Agricultural products grown in Riverside County are exported to over 60 countries around the world, ranging from Angola to Vietnam. In *2006*, the top five countries importing Riverside County produce *were as follows*: *(1) Japan (2) China (3) Mexico (4) Korea and (5) Australia. In 2013, the top five countries importing Riverside County produce changed order to (1) Japan, (2) Mexico, (3) China, (4) Korea and (5) Canada.*

After a ~~record-breaking~~ production peak of $1.25 billion in 2006, *values decreased as water availability and general economic issues "caught up with" the agricultural industry,* ~~values have continued to decrease as water availability and general economic issues "catch up with" the agricultural industry~~ according to the Agricultural Commissioner. *According to the 2013 Agricultural Production Report issued by the Riverside County Agricultural Commissioner's Office, in 2013 the County of Riverside's total gross agricultural valuation was roughly $1.3 billion ($1,327,804,000). This was a 6% increase from the previous year. Each of the top ten fruit and vegetable commodities enjoyed increased values, due to a combination of strong market prices and increased production. The 2013 gross value for crops was approximately $1billion ($1,068,121,000), a 9.37% increase from the previous year. Livestock was at $259.7 million, a 6.1% decrease from the prior year.*

~~According to the 2009 Agricultural Production Report issued by the Riverside County Agricultural Commissioner's Office, in 2009 the County of Riverside's total gross agricultural valuation was roughly $1 billion ($1,015,755,300). This was a decrease of $252.8 million (19.9%) from the 2008 total, the second straight year of declining values. The 2009 gross value for crops was $801.0 million, a 15.5% decrease. Livestock was $214.7 million, a 33.1% decrease from the prior year.~~

According to the Agricultural Commissioner, for the *tenth* ~~sixth~~ year in a row, nursery stock ranked as the top valued crop in Riverside County ~~even though its production values fell by 10% from the prior year~~. *Milk, table grapes, hay and bell peppers rounded out the top crops in 2013.* ~~Milk, table grapes, eggs and bell peppers rounded out the top crops in 2009.~~ Table 4.5-A (Cultivated Crop Production Statistics) shows the valuations and amounts of acreage in production for key crops within Riverside County and *Table 4.5-B (Other Agricultural Product Valuation Data) shows other non-crop agricultural products. Despite a decrease in the amount of land in agricultural cultivation between the years 2009-2011, the amount of agricultural land in cultivation is up at 210,500 acres.* Statewide, Riverside County ranked thirteenth in the value of its agricultural production in *2012* ~~2009~~.

~~Despite a reported decrease of nearly 22% in the amount of land in agricultural cultivation between 2003 and 2007, the value of Riverside County's agricultural products went up over 14% during that same period. Other non-crop agricultural products, as shown in Table 4.5-B (Other Agricultural Product Valuation Data), rose by over $111 million (nearly 22%) as well.~~

Agricultural statistics are maintained by the County of Riverside for four districts: Riverside/Corona, San Jacinto/ Temecula Valley, Coachella Valley and Palo Verde Valley. Per Table 4.5-C (Crop Valuation by Agricultural District), in *2013* ~~2009~~ the Coachella Valley District recorded the highest valuation for non-livestock related agricultural production.

~~Table 4.5-A: Cultivated Crop Production Statistics~~

~~CROP~~	~~Stat.~~	~~2003~~	~~2004~~	~~2005~~	~~2006~~	~~2007~~	~~2008~~	~~2009~~
~~Citrus~~	~~Acreage~~	~~23,500~~	~~20,900~~	~~20,700~~	~~18,600~~	~~19,400~~	~~17,200~~	~~16,800~~
	~~Valuation~~	~~$84.9M~~	~~$123.6M~~	~~$138.2M~~	~~$107.9M~~	~~$121.4M~~	~~$135.8M~~	~~$101.7M~~
~~Trees and Vines~~	~~Acreage~~	~~25,200~~	~~28,400~~	~~28,600~~	~~27,500~~	~~28,400~~	~~24,500~~	~~23,000~~
	~~Valuation~~	~~$215.6M~~	~~$211.9M~~	~~$188.6M~~	~~$191.3M~~	~~$181.8M~~	~~$173.7M~~	~~$191.7M~~
~~Vegetables, Melons, Misc.~~	~~Acreage~~	~~35,200~~	~~26,100~~	~~35,600~~	~~34,100~~	~~37,300~~	~~38,100~~	~~30,900~~
	~~Valuation~~	~~$179.0M~~	~~$174.9M~~	~~$261.0M~~	~~$213.6M~~	~~$234.9M~~	~~$266.4M~~	~~$221.3M~~
~~Field and Seed Crops~~	~~Acreage~~	~~176,600~~	~~152,900~~	~~138,900~~	~~125,300~~	~~118,400~~	~~153,900~~	~~117,100~~
	~~Valuation~~	~~$73.7M~~	~~$75.2M~~	~~$77.7M~~	~~$68.6M~~	~~$94.5M~~	~~$123.5M~~	~~$69.7M~~
~~COUNTY TOTALS~~	~~Acreage~~	~~**260,400**~~	~~**228,200**~~	~~**223,800**~~	~~**205,400**~~	~~**203,500**~~	~~**233,700**~~	~~**187,800**~~
	~~Valuation~~	~~$554.2M~~	~~$585.6M~~	~~$665.5M~~	~~$581.5M~~	~~$632.5M~~	~~$699.4M~~	~~$584.4M~~

~~Source: Riverside County Agricultural Commissioner, 2009 Agriculture Production Report, 2009.~~

Table 4.5-A: Cultivated Crop Production Statistics

CROP	*Stat.*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*
Citrus	*Acreage*	*18,600*	*19,400*	*17,200*	*16,800*	*16,700*	*16,300*	*15,400*	*15,500*
	Valuation	*$107.9M*	*$121.4M*	*$135.8M*	*$101.7M*	*$140.5M*	*$119.9M*	*$125.7M*	*$142.4M*
Trees and Vines	*Acreage*	*27,500*	*28,400*	*24,500*	*23,000*	*23,000*	*24,200*	*25,500*	*25,200*
	Valuation	*$191.3M*	*$181.8M*	*$173.7M*	*$191.7M*	*$165.0M*	*$232.6M*	*$217.2M*	*$232.5M*
Vegetables, Melons, Misc.	*Acreage*	*34,100*	*37,300*	*38,100*	*30,900*	*38,600*	*37,700*	*40,800*	*41,900*
	Valuation	*$213.6M*	*$234.9M*	*$266.4M*	*$221.3M*	*$292.0M*	*$278.6M*	*$286.2M*	*$340.4M*
Field and Seed Crops	*Acreage*	*125,300*	*118,400*	*153,900*	*117,100*	*117,700*	*119,700*	*131,160*	*127,900*
	Valuation	*$68.6M*	*$94.5M*	*$123.5M*	*$69.7M*	*$81.3M*	*$149.2M*	*$147.4M*	*$154.6M*
COUNTY TOTALS	*Acreage*	***205,400***	***203,500***	***233,700***	***187,800***	***196,000***	***197,900***	***212,900***	***210,500***
	Valuation	*$581.5M*	*$632.5M*	*$699.4M*	*$584.4M*	*$678.8M*	*$780.3M*	*$776.5M*	*$869.9M*

Source: Riverside County Agricultural Commissioner, 2013 Agriculture Production Report, 2013.

~~Table 4.5-B: Other Agricultural Product Valuation Data~~

~~PRODUCT~~	~~2003~~	~~2004~~	~~2005~~	~~2006~~	~~2007~~	~~2008~~	~~2009~~
~~Nursery Stock~~	~~$205.8M~~	~~$211.3M~~	~~$229.2M~~	~~$271.0M~~	~~$272.3M~~	~~$230.4M~~	~~$206.5M~~
~~Apiculture~~	~~$3.5M~~	~~$3.0M~~	~~$2.7M~~	~~$3.6M~~	~~$3.9M~~	~~$5.6M~~	~~$5.0M~~
~~Aquaculture~~	~~$15.9M~~	~~$15.6M~~	~~$13.4M~~	~~$11.5M~~	~~$9.8M~~	~~$12.1M~~	~~$5.2M~~
~~Livestock and Poultry~~	~~$287.9M~~	~~$316.2M~~	~~$257.9M~~	~~$234.9M~~	~~$338.9M~~	~~$321.1M~~	~~$214.7M~~
~~COUNTY TOTALS~~	~~**$513.2M**~~	~~**$546.0M**~~	~~**$503.2M**~~	~~**$521.0M**~~	~~**$625.0M**~~	~~**$569.2M**~~	~~**$431.4M**~~

~~Source: Riverside County Agricultural Commissioner, 2009 Agriculture Production Report, 2009.~~

Table 4.5-B: Other Agricultural Product Valuation Data

PRODUCT	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*
Nursery Stock	*$271.0M*	*$272.3M*	*$230.4M*	*$206.5M*	*$169.3M*	*$200.2M*	*$190.9*	*$191.2M*
Apiculture	*$3.6M*	*$3.9M*	*$5.6M*	*$5.0M*	*$4.6M*	*$4.8M*	*$5.0M*	*$4.7M*
Aquaculture	*$11.5M*	*$9.8M*	*$12.1M*	*$5.2M*	*$4.9M*	*$4.8M*	*$4.2M*	*$2.3M*
Livestock and Poultry	*$234.9M*	*$338.9M*	*$321.1M*	*$214.7M*	*$235.9M*	*$292.0M*	*$276.5M*	*$259.7M*
COUNTY TOTALS	***$521.0M***	***$625.0M***	***$569.2M***	***$431.4M***	***$414.7M***	***$501.8M***	***$476.6M***	***$457.9M***

Source: Riverside County Agricultural Commissioner, 2013 Agriculture Production Report, 2013.

~~Table 4.5-C: Crop Valuation by Agricultural District~~

~~Agricultural District*~~	~~2003~~	~~2004~~	~~2005~~	~~2006~~	~~2007~~	~~2008~~	~~2009~~
~~Riverside / Corona~~	~~$97.4M~~	~~$104.0M~~	~~$114.8M~~	~~$97.3M~~	~~$118.9M~~	~~$100.4M~~	~~$82.6M~~
~~San Jacinto / Temecula Valley~~	~~$164.9M~~	~~$182.0M~~	~~$174.6M~~	~~$184.5M~~	~~$194.1M~~	~~$165.0M~~	~~$130.2M~~
~~Coachella Valley~~	~~$405.6M~~	~~$416.4M~~	~~$503.5M~~	~~$483.2M~~	~~$486.9M~~	~~$503.8M~~	~~$484.M~~

~~Palo Verde Valley~~	~~$92.0M~~	~~$96.5M~~	~~$99.4M~~	~~$90.5M~~	~~$113.0M~~	~~$165.9M~~	~~$92.8M~~
~~COUNTY TOTALS~~	~~$759.9M~~	~~$798.9M~~	~~$892.3M~~	~~$856.1M~~	~~$912.9M~~	~~$935.1M~~	~~$790.3M~~

~~* Totals do not include livestock and poultry values.~~
~~Source: Riverside County Agricultural Commissioner, 2009 Agriculture Production Report, 2009.~~

Table 4.5-C: Crop Valuation by Agricultural District

*Agricultural District**	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*
Riverside / Corona	*$97.3M*	*$118.9M*	*$100.4M*	*$82.6M*	*$79.2M*	*$121.7M*	*$111.3M*	*$110.1M*
San Jacinto / Temecula Valley	*$184.5M*	*$194.1M*	*$165.0M*	*$130.2M*	*$130.2M*	*$137.8M*	*$156.7M*	*$165.0M*
Coachella Valley	*$483.2M*	*$486.9M*	*$503.8M*	*$484.M*	*$533.8M*	*$526.3M*	*$543.7M*	*$616.6M*
Palo Verde Valley	*$90.5M*	*$113.0M*	*$165.9M*	*$92.8M*	*$98.6M*	*$171.2M*	*$155.3M*	*$167.7M*
COUNTY TOTALS	***$856.1M***	***$912.9M***	***$935.1M***	***$790.3M***	***$841.8M***	***$957.0M***	***$967.0M***	***$1,059.4M***

Source: Riverside County Agricultural Commissioner, 2013 Agriculture Production Report, 2013.

B. Farmland Resources

The California Department of Conservation runs the Farmland Mapping and Monitoring Program (FMMP) to produce maps and statistical data on California's agricultural resources. Agricultural lands within each county are rated on their production value according to soil quality and irrigation status to produce maps that are updated every two years. The maps also incorporate soils data issued by the Natural Resource Conservation Service (NRCS), a branch of the U.S. Department of Agriculture. Most recently, in September 2009, the FMMP released a set of three maps of 2008 data for western, central and eastern Riverside County, see Figure 4.5.1 (Agricultural Resources Map). The relationship of this new data to the project and existing General Plan is described further, below.

The farmland and other land categories used by the FMMP are described briefly below. Additional information on these can be found on the Department of Conservation's website.

Table 4.5-D: State-Designated Farmland Data for Riverside County

LAND CATEGORY	County Total 2006	County Total 2008* (Unincorp. Portion)	Change Between 2006-2008*
Prime Farmland	128,510 ac	122,940 ac (105,390 ac)	-5,570 ac (-4.3%)
Farmlands of Statewide Importance	46,920 ac	44,650 ac (36,660 ac)	-2,270 ac (-4.8%)
Unique Farmlands	37,950 ac	37,140 ac (32,360 ac)	-810 ac (-2.1%)
Farmlands of Local Importance	231,090 ac	229,160 ac (162,410 ac)	-2,050 ac (-0.8%)
Grazing Lands	111,700 ac	111,220 ac (96,620 ac)	-480 ac (-0.4%)
Water	62,350 ac	62,350 ac (58,110 ac)	0 ac (0%)
Urban and Built-Up Lands	300,540 ac	315,680 ac (78,830 ac)	+15,140 ac (+5.0%)
Other Lands	1,015,580 ac	1,021,340 ac (832,370 ac)	+5,760 ac (+3.5%)
COUNTY TOTALS	**1,934,620 ac**	**1,944,470 ac (1,402,750 ac)**	**- 11,180 ac agric. lands lost**

* Most recent year for which data was available (released in 2010; includes cities). All data rounded to the nearest 10 acres. Totals across years due not sum exactly due to changes in county boundaries (increase) during this period.
Source: California Dept. of Conservation, Farmland Mapping and Monitoring Program 2008 Data, released 2010.

Prime Farmland: Farmland with the best combination of physical and chemical characteristics (soil quality, growing season, moisture supply, etc.) for the long-term production of crops in high yields. These lands must have also been used for irrigated agricultural production at some time during the four years prior to the update cycle.

Farmland of Statewide Importance: Farmland other than Prime with a good combination of physical and chemical characteristics, but with minor shortcomings, such as greater slopes or less ability to store moisture. The land must also have been under irrigated production during the prior four-year cycle. Per the Riverside County General Plan, this category can include forest land, in addition to crop land, pastureland, rangeland and other lands that are not urban or water.

Unique Farmland: Lands other than the above categories that are currently used for the production of specific high value food and fiber crops, such as citrus, avocados, vegetables, etc. These lands may be of lesser quality soils, but still have the combination of traits needed to produce high quality or high yields of specific crops. This category may include non-irrigated orchards or vineyards, as well as citrus, olives, avocados, grapes, etc. The land must also have been cropped at some time during the prior four-year cycle.

Farmland of Local Importance: Farmland in this category generally does not qualify for any of the above categories, but has been deemed locally important by the Riverside County Board of Supervisors. This land may also have been suitable for "Prime" or "Statewide Importance" designation, but for the lack of available irrigation water. They can include lands in production of major, but not unique, crops, as well as dairy lands, agricultural zones (including contract lands and those in jojoba production).

Grazing Land: This includes lands on which the existing vegetation is suited to grazing livestock.

Urban and Built-Up Land: These are defined as lands occupied by structures with a building density of at least one unit per 1.5 acres or approximately six structures per 10-acre parcel. Agricultural lands surrounded by urban areas must exceed 40 acres minimum in size in order to be mapped as farmlands.

Water: This category covers perennial water bodies measuring at least 40 acres in size and larger. Those less than 40 acres are included under "Other Land."

Other Land: This refers to land not included in any other category. Commonly, this includes low-density rural developments (with five sub-categories); brush and timberlands; wetlands and riparian areas, confined livestock, poultry or aquaculture facilities; strip mines; etc. Also included are water bodies less than 40 acres in size and agricultural lands of less than 40 acres in size when surrounded by urban uses.

C. Changes in State-Mapped 'Important Farmlands'

Since the adoption of the 2003 RCIP General Plan, additional FMMP data was issued by the State Department of Conservation. In response, the County of Riverside is updating its General Plan map to reflect the new information from the State of California. These proposed changes are reflected in General Plan Figure OS-2 (Agricultural Resources). The same data is also reflected in the baseline conditions for this EIR, as shown in Figure 4.5.1.

Since preparation of the 1999 Existing Settings Report, and subsequently EIR No. 441 for the 2003 General Plan, additional information on environmental conditions related to farmland resources in Riverside County have been released. Under the FMMP, the California Department of Conservation produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years through a combination of computer mapping, aerial imagery, public review and field reconnaissance. In January 2011, the FMMP released a report on additional farmland data, entitled "California Farmland Conversion Report, 2006-2008."

The State of California's report affects Riverside County's known farmland resources and is reflected in both the revised baseline conditions for this EIR (Figure 4.5.1) and the resultant updated General Plan Figure OS-2, which is based on Figure 4.5.1. The revised maps reflect changes in farmland resources resulting from conversion of irrigated farmland, dryland or idle farmland and other uses to urban. Information on these changes is developed from air photos, local comments and field reconnaissance by FMMP staff.

According to the FMMP Report for 2006-2008, approximately 19,400 acres of irrigated farmland were removed from agriculture use in Riverside County (including cities) in the State of California's 2006-2008 mapping cycle. Meanwhile, Riverside County as a whole gained just over 15,100 acres of urban land, well above the biennial average of 12,400 acres between 1984 and 2006. Homes, golf courses, commercial and community facilities constituted much of the new urban uses. Land idling continued to be common in Riverside County; nearly 5,500 acres were removed from irrigated agricultural categories to grazing uses. The State of California had pinpointed the lack of water availability and agricultural market conditions as driving the trend towards agricultural lands being fallowed (fallowing is typically seen in agricultural areas as an "interim" use in the transition of an area from active agricultural production to eventual urban, non-agricultural uses).

D. Agricultural Preserves in Riverside County

The California Land Conservation Act, better known as the Williamson Act, was enacted by the State of California in 1965 to encourage property owners to continue to farm their land and to prevent the premature conversion of farmland to urban uses. It is a voluntary program that allows property owners to have their property assessed on the basis of its agricultural production rather than at the current market value. In this way, the State of California creates a financial incentive for lands to remain in agricultural production.

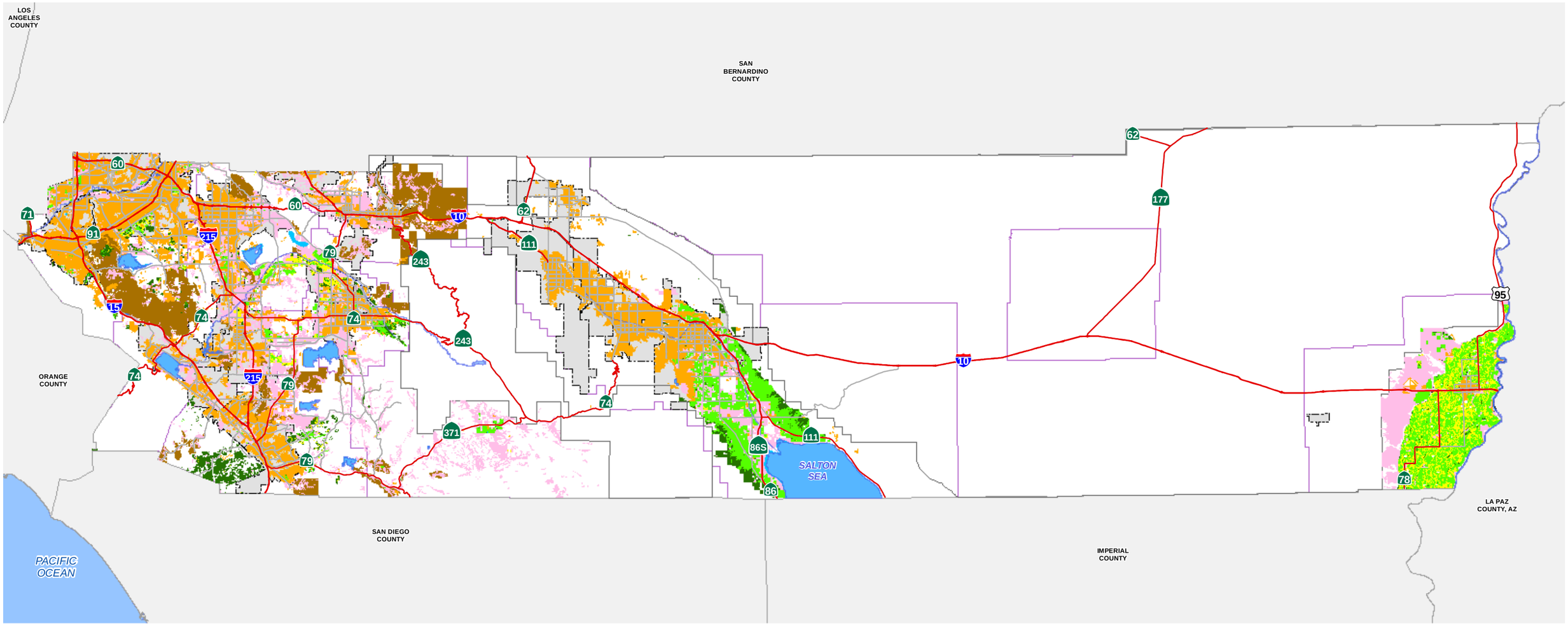
Participation requires that the area consist of at least 100 contiguous acres of agricultural land under one or more ownerships. Once established, the land within the preserve is restricted to agricultural and compatible uses for 10 years, with one-year renewals unless cancelled. County of Riverside Ordinance No. 509 establishes uniform rules which apply to agricultural preserves. Riverside County lands encompass a number of Williamson Act contracts and thousands of acres lie within agricultural preserves within the county.

E. Forestry Industry

In 1982, the California Timberland Productivity Act (California Government Code [CGC] Section 51100 *et seq.*) was passed because, per the Act, "The state's increasing population threatens to erode the timberland base and diminish forest resource productivity through pressures to divert timberland to urban and other uses and through pressures to restrict or prohibit timber operations when viewed as being in conflict with non-timberland uses." The Act was designed to establish policy to "fully realize the productive potential of the forest resources and timberlands of the state." Among other things, Section 51104 of the Act includes the following definitions:

- **Timber:** Means trees of any species maintained for eventual harvest for forest products purposes, whether planted or of natural growth, standing or down, on privately or publicly owned land, including Christmas trees, but does not mean nursery stock.

- **Timberland Production Zone:** Means an area which has been zoned pursuant to [CGC] Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses.



Prime Farmland
Farmland of State Importance
Unique Farmland
Farmland of Local Importance
Grazing Land
Urban Built-up Land
Water
Not Mapped

Highways
Area Plan Boundary
City Boundary
Waterbodies

Data Source: California Department of Conservation, Farmland Mapping and Monitoring Program (2009)

Figure 4.5.1

December 16, 2013

Miles
0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

AGRICULTURAL RESOURCES

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Other pertinent terms and definitions used in this chapter, as referenced by Appendix G of the State CEQA Guidelines, include:

- **Forest Land:** As per Public Resources Code [PRC] Section 12220(g), this is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions and that allows for management of one or more forest resources**,** including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation and other public benefits.

- **Timberland:** Per PRC Section 4526, timberland means land, other than land owned by the federal government and land designated by the [California Board of Forestry and Fire Protection] as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species are determined by the Board on a district basis after consultation with the district committees and others.

Lastly, Riverside County Ordinance No. 559, "Regulating the Removal of Trees," includes the following definitions:

- **Native Tree:** Means both any woody plant which is indigenous to Riverside County, and all smog-resistant species introduced as part of a reforestation program, which have one well-defined stem that at maturity normally attains a height of at least 15 feet and which is not less than 6 inches in diameter measured four feet about the ground.

- **Tree Removal:** Means any activity by which the death of a tree is caused within a reasonably short period of time. Such activities include, but shall not be limited to, cutting down, falling, pushing over, digging up, burning, poisoning or severely pruning a tree to the extent that the tree cannot survive.

- **Woody Biomass:** Trees and woody plants that are grown in a forest or woodland and are the by-products of dead forest trees, including, but not limited to, limbs, tops, needles and leaves are considered woody biomass. These forest byproducts are collected (harvested) and can then be used as fuel to produce bio-energy or as the raw materials to produce other products.

F. Forest Resources Riverside County

Riverside County includes parts of two major forests of the Sierran montane range: the Cleveland and San Bernardino National Forests, both managed by the U.S. Forest Service (USFS). These forests occupy the higher mountain ranges of the Pacific Coast region, which stretches from southern to northern Baja California, in Mexico. They are generally characterized by winter snows and summer fires, large conifers (pine and fir trees) and a great diversity of animal species. At lower elevations (generally below 5,000 feet), these forests commonly border mixed evergreen forest, oak woodland and chaparral.

As shown in Figure 4.5.2 (High Elevation Forestry Resources – Western Riverside County), portions of the Cleveland National Forest occur in the southwestern most corner of Riverside County and cover roughly 90,750 acres. The edge of the San Bernardino National Forest falls within northwestern Riverside County and covers roughly 241,600 acres.

The Riverside County portions of the Cleveland National Forest only reach elevations of about 2,000 to 3,000 feet and generally do not support large expanses of mature conifers. Stands of mixed hardwood and other trees

species in these areas are generally not subject to intensive fixed site timber operations due to their sparseness, species and locations. Portions of the San Bernardino National Forest (nearly 250,000 acres) fall within Riverside County and provide elevations and climates sufficient to support old growth forests and other forest resources.

The largest Riverside County portion of the San Bernardino National Forest is the Santa Rosa/San Jacinto Mountains National Monument, located in the central mountains that separate western and eastern Riverside County. This area contains the largest expanse of mountainous lands above 5,000 feet in which conifer forest-type vegetation occurs within Riverside County. The National Monument encompasses roughly 150,000 acres of federal lands, including the U.S. Forest Service's Santa Rosa Wilderness and San Jacinto Wilderness Ranger Districts and BLM lands, as well as roughly 120,000 acres owned or controlled by a variety of other public and quasi-public entities including the State of California, various tribes and educational institutions, plus private owners. The San Jacinto Mountains area features montane coniferous forest at the highest elevations and mixed forests (hardwoods and conifers) at lower elevations. The lands in and around the Monument provide the largest single extent of mature coniferous forests in Riverside County.

Lastly, Riverside County also includes portions of the Joshua Tree National Park, located northeast of the Coachella Valley in the Mojave Desert bioregion. This BLM-managed National Park encompasses a total of approximately 1,017,750 acres spanning Riverside and San Bernardino counties, with approximately 794,000 of those acres in Riverside County. Although much of this National Park is located above 4,000 feet in elevation, it does not offer extensive stands of forests of the types generally suitable for timber industry. The dryness, temperature extremes, slow growth rates and sparseness of the vegetation make commercial timber uses generally unlikely.

G. Forest Production in Riverside County

Within the State of California, there are roughly 85 million acres classified as wildlands. Of these, nearly 17 million are commercial forest land. According to the State, California's forests grow roughly 3.8 billion board feet annually. Each year approximately 2 billion board feet of timber, valued at over $1 billion, is harvested. Since the early 1990s the amount of timberland production in the state has declined. It is rare to find commercial timber production uses of less than 5,000 acres because the "increasing cost of regulation" generally makes smaller production levels economically infeasible (Cal Fire, "Non-Industrial Timber Management Plans in California," 2003).

In total, the California Department of Forestry and Fire Protection (Cal Fire) estimates commercial timberland area in the state covers 16.6 million acres, including federal, state and private lands (Cal Fire, "Non-Industrial Timber Management Plans in California," 2003). Of these, private timberland areas total 7.4 million acres (45%). Within the privately held timberlands, roughly 41% (3.2 million acres) belong to private, non-industrial owners and are generally of less than 5,000 acres and not used for commercial forestry purposes. The remainder is held by industrial forest landowners. Figures released by the State of California indicate that no "California forest land" ownership, either public or private, is mapped for Riverside County.

Any time timber is harvested for commercial purposes in the state, an approved Timber Harvest Plan (THP) or exemption must be obtained from the State of California pursuant to the Forest Practice Act and rules. The exemptions generally allow for activities such as harvesting Christmas trees, clearing dead, dying or diseased trees, establishing a right-of-way, or removing fire hazard trees within 150 feet of a structure. Cal Fire also provides for a one-time exemption for the conversion of 3 acres of timberland to a non-timber use. These exemptions from THPs have been authorized under the Forest Practice Act because they were found to be of a size and scale that would not significantly affect forest resources. THPs are reviewed and approved by Cal Fire.

Some coniferous forests occur within Riverside County. As shown in Figure 4.5.2, however, most are located on state or federal lands. There are no State Demonstration Forests located in Riverside County. Forests extensive enough to support large-scale commercial timber operations generally occur at the higher elevations associated with the northern Sierra Nevada Range. According to Cal Fire, there are no fixed commercial timber operations subject to a Timber Harvesting Plan in Riverside County (CalFire, 2003).

There is, however, the utilization of logs and biomass which result in dead tree removal, fuels reduction and thinning projects on private lands in Southern California. Total forest biomass, potentially treated or removed in San Bernardino, Riverside and San Diego counties peaked in 2005 at about 673,000 green tons, and was forecasted to drop to about 127,000 green tons by 2007 (approximately 20% of peak production). Utility companies, primarily Southern California Edison, accounted for approximately 70% of forest biomass tonnage removed or disposed of in 2004, which dropped to 16% in 2005.

As mentioned above, there are no existing land use designations explicitly for timber production zones or other commercial timber activities in Riverside County, although such activities could be conducted under the General Plan's 'AG' land use designation and subject to County of Riverside review and approval. There are no commercial timber operations occurring in Riverside County that rely on existing forestry resources (i.e., existing stands of trees or "old growth"). The only fixed commercial forestry activities in the county, roughly 30 to 60 acres of Christmas tree farms, are conducted as agricultural activities (nursery stock production), since the trees produced are planted onsite and grown from stock, rather than harvested from naturally occurring forest.

Nevertheless, there are existing stands of mature forest trees in several locations in the county that reach appropriate elevations (generally above 5,000 feet). Of these, most such forest resources are located on public or quasi-public lands, including National Forests (under U.S. Department of Forestry) and National Monuments (under federal BLM management) as well as others. The relationship between forestry resources and these public lands are shown in Figure 4.5.2 and Figure 4.5.3 (High Elevation Forestry Resources – Central & Eastern Riverside County).

Though not a commercial timber activity, the County of Riverside does also participate in a "woody biomass utilization program" funded by grants issued by the U.S. Forest Service. The program run by the Riverside County Fire Department (~~actually,~~ Cal Fire) is designed to utilize dead trees and biomass materials resulting from tree mortality caused by drought and bark beetle infestation in the local mountains. The woody materials are used for "value-added commercial uses," including fuel for steam electricity generation. The program is currently set to continue through to 2013.

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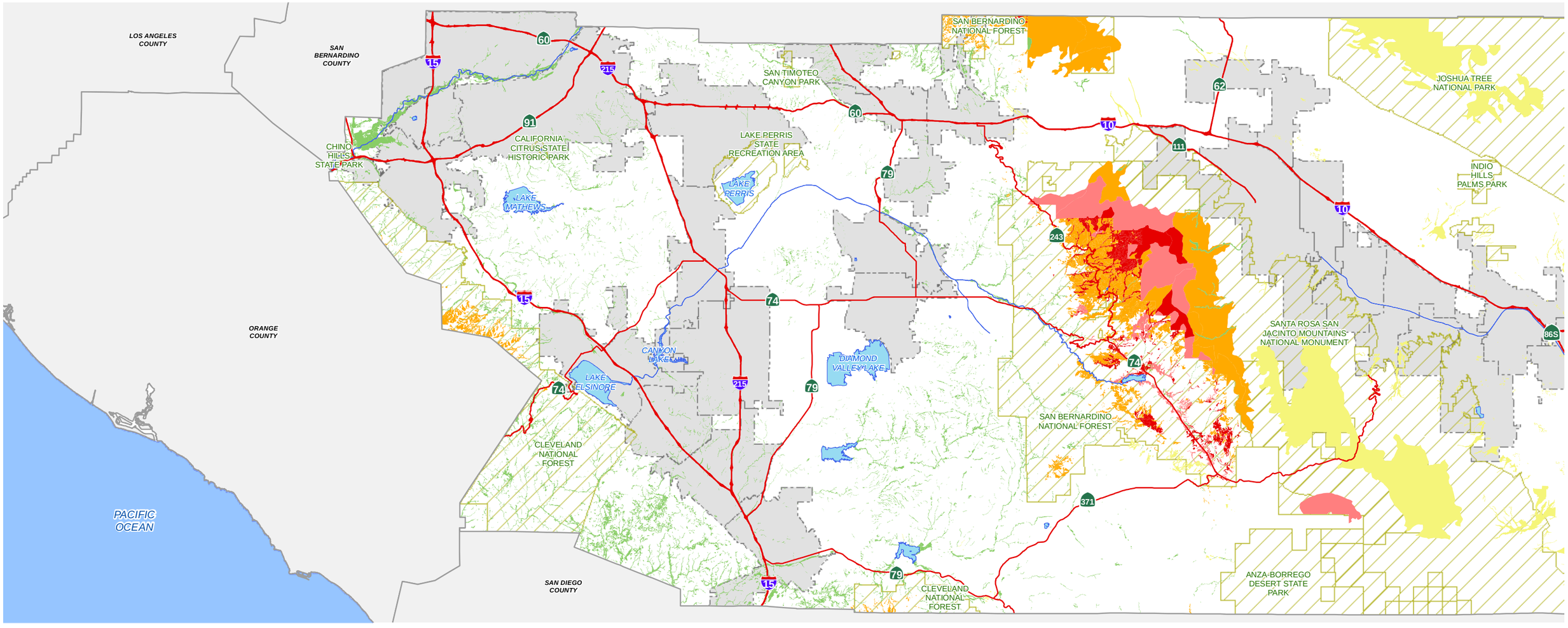

Data Source: California Native Plant Society (2008) and Riverside County (2013)

- High Coniferous Forests
- Coniferous Forests
- Montane Forests
- Lowland Forests/Woodlands
- Desert Woodlands
- National Forests and Parks
- Highways
- Cities
- Waterbodies

Figure 4.5.2

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

FORESTRY RESOURCES
WESTERN RIVERSIDE COUNTY

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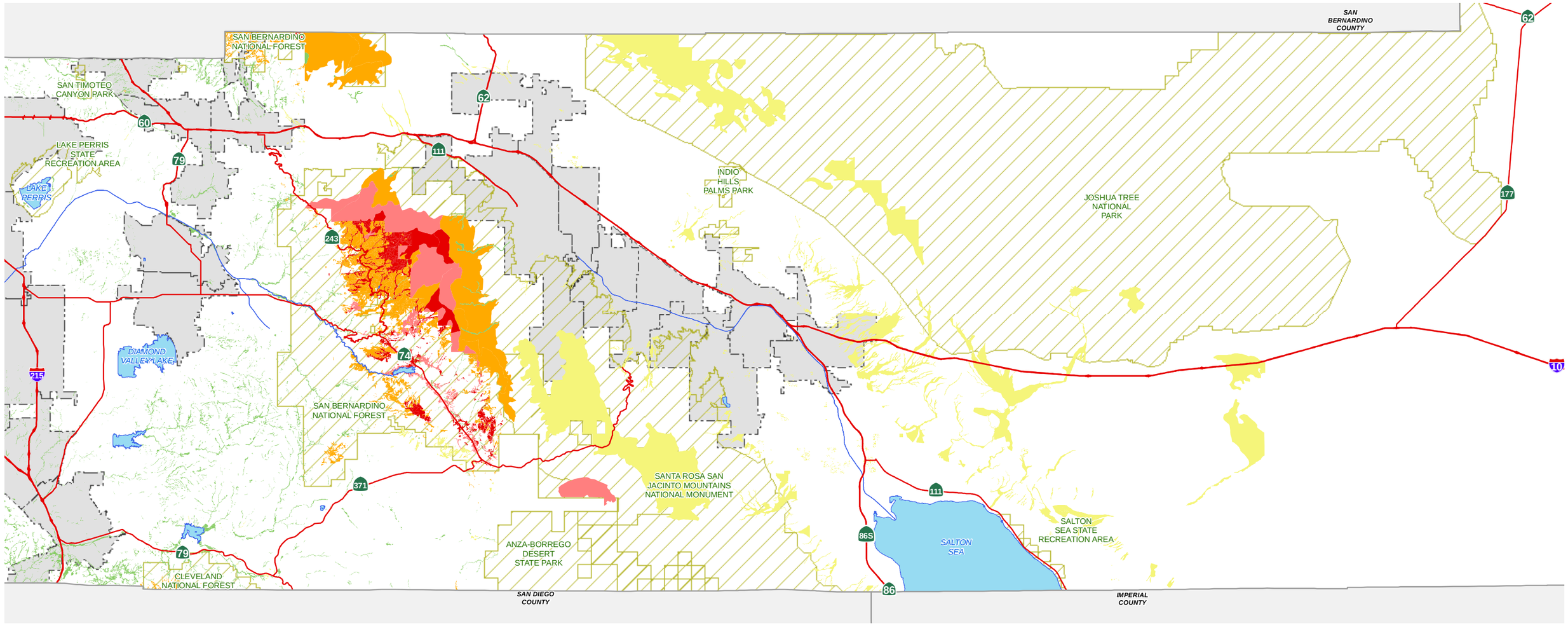

Data Source: California Native Plant Society (2008) and Riverside County (2013)

- High Coniferous Forests
- Coniferous Forests
- Montane Forests
- Lowland Forests/Woodlands
- Desert Woodlands
- National Forests and Parks
- Highways
- Cities
- Waterbodies

Figure 4.5.3

December 16, 2013

Miles
0 5 10

FORESTRY RESOURCES
EASTERN RIVERSIDE COUNTY

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H. Baseline Data Sources

Pursuant to CEQA, the description of the physical environmental conditions provided in this EIR is as they exist at the time the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting will constitute the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact to agricultural and forest resources is significant. Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence will be used. For the agricultural and forestry baseline data presented and used herein, the following sources were determined to be the best-supported substantial evidence available and were used for the reasons stated. Land use data and other environmental data sets are described in their respective chapters elsewhere.

Agricultural production values are aggregates collected by the Agricultural Commissioner's Office and reported on an annual basis, pursuant to the requirements and directives of the California Food and Agriculture Code, Section 2279. The data source used herein, Riverside County 2009 Agricultural Production Report, Riverside County Agricultural Commissioner's Officer, issued May 2010, represents the most recent data set for countywide agricultural production available. Given the trends of declining agricultural production continuing over time, as documented in said report, it is reasonable and supportable to assume the 2009 available data set represents the physical state of agricultural production in Riverside County as a 'worst case.' That is, if anything, it would over-estimate the amount of productive agricultural lands potentially adversely affected by the proposed project.

The data source of State-designated farmlands used herein is Important Farmland Maps 2008, California Department of Conservation, Farmland Mapping and Monitoring Program, issued September 2009. This is the most recent data set available from the State of California, which performs biennial farmland mapping updates as directed by state law. For reasons similar to those given above, this data set is also assumed to represent a 'worst case' scenario which, if anything, would over-estimate potential impacts to designated Farmlands. This scenario is used to ensure the analysis affords an abundance of caution in its findings.

The forest resource data in Figure 4.5.2 and Figure 4.5.3 is based on the vegetation and biota data described in Section 4.8 (Biological Resources). See Section 4.8 for additional information, including detailed summaries of the types and locations of the various forest habitats occurring in Riverside County. Details on the status of timber industry in California is based primarily on the 2006 Southern California Forest Products Utilization and Marketing Technical Assistance Activities Interim Report, dated May 2007, prepared for the California Department of Forestry and Fire Protection by Larry Swan and Jerry Pattison of the USDA Forest Service. This report represents the most recent available data on forestry and timber activities in Southern California. Additional supporting data was also obtained from the 2003 CalFire report, "Non-Industrial Timber Management Plans in California."

4.5.3 Policies and Regulations Addressing Agricultural and Forestry Resources

A. State Regulations

Several key state laws play a role in governance and protection of agricultural lands in Riverside County. The State of California's FMMP, as mentioned above, operates pursuant to the provisions of CGC Section 65570. The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CGC Section 56377) sets forth the policies under which the Riverside County Local Agency Formation Commission (LAFCO) operates. These policies include directing LAFCO to consider the impacts on agricultural lands, particularly related to soil quality and irrigation water availability, when evaluating annexation and sphere of influence proposals. Specifically, LAFCO policies direct that development or use of land for other than open space shall be guided away from existing prime agricultural lands, unless detrimental to the orderly, efficient development of an area.

The California Land Conservation Act, also known as the 'Williamson Act,' is a voluntary program that allows property owners to have their property assessed on the basis of its agricultural production rather than at the current market value. The property owner is thus relieved of having to pay higher property taxes, as long as the land remains in agricultural production. Participation requires that the area consist of at least 100 contiguous acres of agricultural land under one or more ownerships. The purpose of the Act is to encourage property owners to continue to farm their land and to prevent the premature conversion of farmland to urban uses. Upon approval of the Board of Supervisors, an agricultural preserve is established and the land within the preserve is restricted to agricultural and compatible uses for 10 years, with one-year renewals unless cancelled. County of Riverside Ordinance No. 509 establishes uniform rules which apply to agricultural preserves.

In addition to the California Forest Protection Act, mentioned earlier, the State of California has a number of regulations aimed at protecting and preserving both the economic and biological values of the state's forest resources. Among these is PRC Section 4631 which states that "it is in the interest of the welfare of the people of this state and their industries and other activities involving the use of wood and other forest products that desirable cutover forest lands be made fully productive and that the holding and reforestation of such lands is a necessary measure." PRC Section 4631.5 provides that the State of California shall retain the existing land base of state forests in timber production for research and demonstration purposes. The California Department of Forestry and Fire Protection (Cal Fire), in accordance with plans approved by the Forestry Board, may engage in the management, protection and reforestation of state forests. Per PRC Section 4645, "management" means "the handling of forest crop and forest soil so as to achieve maximum sustained production of high quality forest products while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment."

To retain and improve California's productive timberlands, the State of California offers several incentive programs to encourage sustainable forest management. These include:

- For all private timberland owners whose lands qualify, the Timberland Production Zone (TPZ) provides a property tax incentive to manage forest lands for timber production. Such lands must be devoted to and used for growing and harvesting timber and compatible uses. Approximately 77% of the 7.4 million acres of private forestlands is zoned TPZ.

- For non-industrial landowners, the California Forest Improvement Program (CFIP) provides up to a 75% reimbursement for reforestation, soil and water protection and improvement, and wildlife habitat enhancement in concert with development of a forest management plan. The reimbursement may

increase to 90% for rehabilitation work following natural disasters, such as wildfire. The funds for supporting this program come from the Forest Resources Investment Fund (FRIF) derived from sustainable harvesting on the state's demonstration forests.

- The Forest Legacy Program supports use of conservation easements on private Forest lands that are at risk of being converted to non-forest uses. These easements allow the landowner to sell development rights to a government agency while still being able to sustainably manage their forestland. Legacy funds are allocated to the states through the "State and Private Forestry" program of the U.S. Forest Service, and the State of California may match federal distributions with bond funds.

- The Non-Industrial Timber Management Plan (NTMP) allows smaller NIPF timberland owners to prepare a long-term management plan that reduces regulatory time and expense by providing an alternative to filing individual timber harvesting plans (THPs). In exchange, landowners agree to manage their forests through uneven-aged management and long-term sustained yield.

B. Riverside County Regulations

The following existing regulations and policies are intended to protect existing agricultural and forestry resources within Riverside County. These policies and regulations have been approved by the County of Riverside as separate prior discretionary actions and are not part of GPA No. 960.

Ordinance No. 559 - Regulating the Removal of Trees: The purpose of this ordinance is to ensure that Riverside County's timberlands are protected and their ecological balance preserved by requiring the review and issuance of a permit prior to removal of living native trees on properties greater than one-half acre and located in the unincorporated area of the County of Riverside above 5,000 feet in elevation. In view of the proximity of the timberlands to urban centers of expanding population, and the unique nature of the timberlands themselves, this ordinance is necessary to protect and preserve such lands to serve the interests and provide for the welfare of the people of Riverside County.

This ordinance does not apply to: timber operations conducted under the Forest Practice Act; trees removed on lands owned by the United States government or the State of California; activities conducted by a public utility, subject to the jurisdiction of the Public Utilities Commission or any other constituted public agency, where, to construct and maintain safe operation of facilities under their jurisdiction, trees are removed, pruned, topped or braced; trees removed by a federal or state agency; trees required to be removed per other codes, ordinances or laws of the county, state or federal government; trees which Cal Fire recommends be removed because they are diseased, dying, dead or otherwise detrimental to the forest health; trees constituting immediate threats to public health, safety or general welfare and requiring emergency removal; trees needing removal for stand management or stocking control (when accompanied by the written plan approved by Cal Fire); trees removed pursuant to a County of Riverside permit containing conditions for the removal of trees; trees which a fire protection agency require be removed as part of an approved fire hazard reduction program; and, lastly, any tree within 20 feet of an existing legal structure.

Ordinance No. 509 - Establishing Agricultural Preserves: Agricultural preserves are lands identified for, and devoted to, agricultural and compatible uses, and are established through resolutions adopted by the Riverside County Board of Supervisors. The purpose of this ordinance is to ensure that incompatible uses are not allowed within established agricultural preserves. It sets forth the powers of the County of Riverside in establishing and administering agricultural preserves pursuant to the California Land Conservation Act of 1965 (CGC Section 51200, *et seq.*). The ordinance also establishes "Uniform Rules" for the agricultural and compatible uses allowed in an agricultural preserve. Land uses not covered in the ordinance are prohibited within agricultural preserves.

Ordinance No. 625 – Right To Farm: The purpose of this ordinance is to "conserve, protect and encourage the development, improvement and continued viability of agricultural land and industries for the long-term production of food and other agricultural products, and for the economic well-being of the county's residents." It seeks to "balance the rights of farmers to produce food and other agricultural products with the rights of non-farmers who own, occupy or use land within or adjacent to agricultural areas." Thus, the ordinance includes regulations to reduce the loss of agricultural resources in Riverside County by limiting the circumstances under which agricultural operations may be deemed a "nuisance." It states that an agricultural activity that has been operating for more than three years on a site (and assuming it was not a nuisance at the time it began) cannot be later classed as a public or private nuisance due to "any changed condition in or about the locality." This prevents, for example, existing dairies from being targeted by odor complaints from residents of housing units constructed in the surrounding area three or more years after the dairy use began. Further, it requires buyers of properties within 300 feet of any land zoned primarily for agricultural purposes to be given notice of the pre-existing agricultural use and its right to continue.

Resolution No. 84-526 - Riverside County Rules and Regulations Governing Agricultural Preserves: These rules and regulations were adopted pursuant to CGC Section 51231 to govern agricultural preserve procedures within Riverside County and to aid in implementation of the Williamson Act. The rules and regulations address procedures for the initiation, establishment, enlargement, disestablishment and diminishment of agricultural preserves. To protect existing agricultural lands and agricultural preserves within Riverside County, Division VI of the rules require a "Comprehensive Agricultural Preserve Technical Advisory Committee" (CAPTAC) to review and report on land use proposals and applications related to agricultural preserves and advise the Riverside County Board of Supervisors on the administration of agricultural preserves, as well as Williamson Act contract-related matters. In particular, the CAPTAC is charged with reviewing any proposals for the diminishment or disestablishment of an agricultural preserve and providing its recommendations to the Board of Supervisors. Regarding diminishments and disestablishments, the CAPTAC reviews the following findings:

- Whether a notice of nonrenewal has been served pursuant to the Williamson Act, Section 401 of these rules.
- Whether the cancellation is likely to result in the removal of adjacent lands from agricultural use.
- Whether the proposed alternative use of land is consistent with the provisions of the Riverside County General Plan.
- Whether the cancellation will result in discontiguous patterns of urban development.
- Whether there is proximate non-contracted land which is both available and suitable for the use for which the contracted land is being proposed.
- Whether the development of the contracted land would provide more contiguous patterns of urban development than that of proximate non-contracted land.

C. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and not part of GPA No. 960. Rather, these policies are those considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis when a given development proposal warrants their use.

1. Open Space (OS) Element Policies

Policy OS 7.1: Work with State and federal agencies to periodically update the Agricultural Resources map to reflect current conditions.

Policy OS 7.3: Encourage conservation of productive agricultural lands and preservation of prime agricultural lands.

Policy OS 7.4: Encourage landowners to participate in programs that reduce soil erosion, improve soil quality, and address issues that relate to pest management. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.

Policy OS 7.5: Encourage the combination of agriculture with other compatible open space uses in order to provide an economic advantage to agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the on-site agricultural operation.

Policy OS 8.1: Cooperate with federal and State agencies to achieve the sustainable conservation of forest land as a means of providing open space and protecting natural resources and habitat lands, included within the MSHCPs.

Policy OS 8.2: Support conservation programs to reforest privately held forest lands.

Policy OS 9.4: Conserve the oak tree resources in the county.

2. Land Use (LU) Element Policies

Policy LU *20.1* (previously 16.1): Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.

Policy LU *20.2* (previously 16.2): Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.

Policy LU *20.4* (previously 16.4): Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

Policy LU *20.5* (previously 16.5): Continue to participate in the California Land Conservation Act (the Williamson Act) of 1965.

Policy LU *20.6* (previously 16.6): Require consideration of State agricultural land classification specifications when a 2.5-year Agriculture Foundation amendment to the General Plan is reviewed that would result in a shift from an agricultural to a non-agricultural use.

Policy LU *20.7* (previously 16.7): Adhere to Riverside County's right-to-farm ordinance.

Policy LU *20.9* (previously 16.9): Weigh the economic benefits of surface mining with the preservation/conservation of agriculture when considering mineral excavation proposals on land classified for agricultural uses.

Policy LU *20.11* (previously 16.11): The County shall pursue the creation of new incentive programs, such as tax credits, that encourage the continued viability of agricultural activities.

D. Proposed New or Revised Riverside County General Plan Policies

The following new or revised General Plan policies are proposed as part of GPA No. 960 to enhance the General Plan's treatment of development considerations on forest lands.

Policy LU *7.6* (previously 6.7): *Require* ~~B~~*b*uffer*ing to the extent possible* and/or *the* maintain*ing of* a natural edge for proposed development directly adjacent to ~~n~~*N*ational ~~f~~*F*orests.

***NEW* Policy LU 7.10:** *The proponent for new development proposals on forested lands with at least 10% coverage of mature conifer trees, forest land or timber in which three or more acres of forested lands will be cleared (removed) of trees must demonstrate to the County compliance with any/all applicable State regulations regarding the protection and operation of said forest resources. As used here, the term "native trees" shall only apply to naturally-occurring conifers growing above 5,000 feet AMSL elevation. Additionally, replacement trees for all qualifying mature trees removed must be planted at a ratio of 1:1. The replacement trees must be planted on the project site or, where that is infeasible because the entire site must be permanently cleared, on property in an acceptable alternate location, preferably nearby.*

***NEW* Policy LU 20.8:** *Encourage educational and incentive programs in coordination with the County Agricultural Commissioner's Office, the University of California Cooperative Extension Service and the Riverside County Farm Bureau, that convey the importance of conserving watercourses and their associated habitat, as well as protective buffers for domestic and farm livestock grazing.*

Policy LU *20.10* (previously 16.10): Allow agriculturally related retail uses such as feed stores and permanent produce stands in all areas and land use designations. ~~It is not the County's intent pursuant to this policy to subject agricultural related uses to any discretionary permit requirements other than those in existence at the time of adoption of the General Plan. Where a discretionary permit or other discretionary approval is required under the County zoning ordinances in effect as of December 2, 2002, then allow such retail uses with the approval of such a discretionary permit or other approval. The following criteria shall be considered in approving any discretionary permit or other discretionary approval required for these uses.~~

~~a. Whether the use provides a needed service to the surrounding agricultural area that cannot be provided more efficiently within urban areas or requires location in a non urban area because of unusual site requirements or operational characteristics;~~

~~b. Whether the use is sited on productive agricultural lands and less productive land is available in the vicinity;~~

~~c. Whether the operational or physical characteristics of the use will have a detrimental impact on water resources or the use or management of surrounding properties within at least ¼ mile radius;~~

~~d. Whether a probable workforce is located nearby or is readily available.~~

~~Allow for proposed agriculturally-related processing uses whether or not in conjunction with a farming operation, such as commercial canning, packing, drying, and freezing operations, in all areas and land use designations.~~

~~Where a discretionary permit or other discretionary approval is required under the County zoning ordinances in effect as of December 2, 2002, then allow such processing uses with the approval of such a discretionary permit or other approval. The following criteria shall be considered in approving any discretionary permit required for these uses:~~

~~a. Whether the uses are clustered in centers instead of single uses;~~

~~b. Whether the centers are located a sufficient distance from existing or approved agricultural or rural residential commercial centers or designated commercial areas of any city or unincorporated community;~~

~~c. Whether sites are located on a major road serving the surrounding area;~~

~~d. Whether the road frontage proposed for the uses and the number of separate uses proposed are appropriate;~~

~~e. For proposed value-added uses such as canneries and wineries with on-premises retail uses, the evaluation under the criteria above shall consider the service requirements of the uses and the capability and capacity of cities and unincorporated communities to provide the required services.~~

4.5.4 Thresholds of Significance for Agricultural and Forestry Resources

The proposed project would result in a significant impact on agricultural resources or forestry resources if it would:

A. Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance ("Farmland"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency [as reflected in Figure 4.5.1], to non-agricultural use.

B. Conflict with existing agricultural zoning, agricultural use or with land subject to a Williamson Act contract or land within a Riverside County Agricultural Preserve.

C. Cause development of non-agricultural uses within 300 feet of agriculturally zoned property.

D. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

E. Conflict with existing zoning for, or cause rezoning of, 'forest land' (as defined in PRC Section 12220(g)), 'timberland' (as defined by PRC Section 4526), or timberland zoned 'timberland production' (as defined by CGC Section 51104(g)).

F. Result in the loss of forest land or conversion of forest land to non-forest use.

G. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use.

4.5.5 Effect of GPA No. 960 on the General Plan and on Agricultural and Forestry Resources

The proposed project, GPA No. 960, would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. In this section, the changes to the General Plan related to agriculture and forestry are outlined and the effects of proposed changes relative to these resources are discussed. Specific impacts and mitigation for the project are then evaluated according to identified significance thresholds in the section following this one.

A. Proposed Changes to the General Plan

As part of the project review process, agricultural and farmland-mapping data in the General Plan was updated and related policies reviewed and revised where necessary. The existing General Plan addresses agricultural and forestry resources mainly in the Multipurpose Open Space (OS) Element, although the Land Use (LU) Element also has many policies related to agricultural land uses as well. GPA No. 960 includes the following updates related to agriculture and forestry; text of relevant revised General Plan policies is provided in Section 4.5.4 (Thresholds of Significance for Agricultural and Forestry Resources).

Farmlands Mapping: As noted in Section 4.5.2.C, the County of Riverside updated Figure OS-2, Agricultural Resources, pursuant to new FMMP data made available by the California Department of Conservation, to ensure that the General Plan reflects the current level of information regarding important farmlands. This proposed figure (equivalent to Figure 4.5.1 herein) encompasses the new mapping information and changes issued by the State of California FMMP. Several agriculture-related policies within the Land Use Element were also revised and Policy LU 20.8 was added.

Forestry Mapping: In conjunction with new regulatory guidance on greenhouse gases (GHG), the State of California has also increased focus on protection of forestry resources (trees provide significant GHG-absorbing benefits). In response, GPA No. 960 includes revisions to the General Plan to provide more robust direction on the relationship between forest resources and future development within Riverside County. In particular, maps showing the general location and extent of forest resources within the county were developed and proposed for incorporation into the General Plan as new Figures OS-3b and OS-3c (for west and east Riverside County, respectively). To accompany these maps, and provide additional guidance on land use development proposals on forested lands, a new policy, LU 7.10, is proposed as part of GPA No. 960.

In addition to these mapping and specific policy changes, a variety of LUD and policy area changes are proposed, as per the descriptions in Section 3.0 (Project Description) of the EIR and associated Figure 3-1 (and corresponding maps within each Area Plan) that may directly or indirectly affect agricultural or forestry resources. Such changes would lead to either an increase or decrease in development potential (density or intensity); the risks associated with introducing new people and property into areas with agricultural or forestry resources would be

increased correspondingly. The potential for conflicts between agricultural and urban uses would also be increased where urbanizing development spreads into previously rural and agriculture-based areas.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies, and others as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (GP Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements will be determined based on site assessment of opportunities and constraints, including farmland designations and soils, forestry resources and compatibility with surrounding uses, to determine environmentally preferred alignments that minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines and such, are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services, are not presently foreseeable beyond the master countywide level already depicted in the 2003 General Plan and addressed previously in EIR No. 441. These improvements will require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation, including those for agriculture and forestry resources, would be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage.

B. Analysis of GPA No. 960 Effects on Agriculture

GPA No. 960 includes items that would directly or indirectly affect agricultural resources as a result of land use designation (LUD) changes in development potential on individual sites; changes to policy areas or other large-scale planning policies affecting development potential across regions; and, changes to the General Plan circulation network that may affect existing or future roadways either directly (establishing new future roadway locations or sizes) or indirectly (triggering the need for a new road on previously vacant lands or changing the size of roadway needed). The specifics of each of these types of changes proposed by the project are fully detailed in EIR Section 3.0.

1. Effects on Agricultural Usage and General Plan Designated "AG" Lands

Among other things, GPA No. 960 includes changes that would directly alter the agricultural ("AG") land use designations in the General Plan for a variety of locations. A summary of these General Plan changes is provided in Table 4.5-E (Project Effects on Agriculture Land Use Designations in the General Plan), below. Of the areas directly affected by changes proposed by GPA No. 960, a total of 4,080 acres are designated AG under the existing General Plan. The proposed changes would result in an overall net loss of 170 acres of designated AG in the General Plan. Per Table 4.2-D (Existing General Plan Mapped Land Uses (Countywide)), this is less than 0.10% of the countywide total of 189,730 acres designated AG.

The subsequent table, Table 4.5-F (Project Effects on Lands in Agricultural Use), shows the approximate amount of agricultural uses existing on the sites in question, as assessed by photo-interpretation of GIS data. In terms of

build out (over the next 50 years), it is assumed that *all* of the proposed land use designations indicated in the Riverside County General Plan are developed according to their mapped uses. Thus, since agricultural uses are present on lands *not* currently designated with an 'AG' LUD, as shown in Table 4.5-F, the project's changes would mean the loss of over 5,300 acres of agricultural lands (which include croplands, grazing and fallow lands, as well as ranches and similar uses). This is approximately 2% of the 226,900 acres of agriculture estimated currently in unincorporated Riverside County (per Table 4.2-C). In reality, however, it is highly unlikely that all the land uses designated in the General Plan will ever build out. It would require new development on all of the developable vacant land in the county and also the replacing of many long-standing existing uses which historically never occurs 100%. Nevertheless, it is assumed to occur for the purposes of this EIR to ensure that the worse-case environmental effects and resource needs are addressed programmatically.

Table 4.5-E: Project Effects on Agriculture Land Use Designations in the General Plan

Project Component	Current General Plan "AG" LUD (acres)	Proposed "AG" LUD (acres)	Change in "AG" LUD (acres)
Aguanga RVSA	0	0	NC
Anza Valley PA	950	950	NC
Blythe Airport	0	0	NC
El Cariso RVSA	0	0	NC
Fish Farms	0	470	+ 470 acres
Flabob Airport	0	0	NC
Goodhope RVO	0	0	NC
Meadowbrook RVO	0	0	NC
Northeast Business Park OV	180	0	- 180 acres
Parcel-Specific LUD Changes	80	0	- 80 acres
Riverside Municipal Airport	0	0	NC
San Jacinto Ag/Development Potential Study Area	2,870	2,830	- 40 acres
Totals	**4,080**	**4,250**	**- 170 acres**

* All values rounded to nearest 10; those under 10 rounded to nearest whole number. Thus, totals may not sum.

Key: LUD = General Plan Land Use Designation NC = No Change OV = Overlay
RVSA = Rural Village Study Area RVO = Rural Village Overlay PA = Policy Area

Source: Riverside County Planning and GIS Departments, GIS analysis of project application data, 2011.

2. Effects on Important Farmlands Designated by the State

Based on farmland mapping data from the State Department of Conservation, the relationship of the project's known spatial components was analyzed relative to Prime Farmlands, Farmlands of Statewide Importance, Farmlands of Local Importance and Unique Farmlands (collectively referred to as "Farmlands" herein). Table 4.5-F, below, shows how the land use designation changes summarized in Table 4.5-E would affect mapped Farmlands for the sites.

Overall, extremely small amounts (roughly 32 acres) of Prime and State-Important Farmlands would potentially be directly adversely affected (i.e., made unavailable for agricultural uses) due to GPA No. 960 LUD changes. In terms of Farmlands of Local Importance, gains in AG-designated lands from the fish farm changes offset those lost elsewhere, resulting in an overall net gain of 74 acres.

3. Effects on Existing Agricultural Preserves

Analysis of the known spatial components of the proposed project indicates that roughly 4,900 acres fall within an existing Agricultural Preserve. Of these, nearly 90% (4,280 acres) fall within revised policy areas in which land

use development potentials are being reduced (this includes the removal of the potential urbanizing development from the San Jacinto Agriculture/Potential Development Study Area). Roughly 20 acres within preserves are being designated OS-CH for biological and open space conservation (which also preserves any farmland soils) and 120 acres are going to OS-C for other reasons. Just over 30 acres are being changed *to* AG designation to preserve and foster fish farms (aquaculture) in the Salton Sea region.

Table 4.5-F: Project Effects on Lands in Agricultural Use

Project Component	Land Currently in Agricultural Use[1] (acres)	Proposed for Agricultural Use ("AG" LUD) (acres)	Change in Agri. Land Usage at Build out[2] (acres)
Aguanga RVSA	630	0	- 630 acres
Anza Valley PA	3,880	950	NC
Blythe Airport	310	0	-310 acres
El Cariso RVSA	2	0	- 2 acres
Fish Farms	470	470	NC
Flabob Airport	40	0	- 40 acres
Goodhope RVO	20	0	- 20 acres
Meadowbrook RVO	30	0	- 30 acres
Northeast Business Park OV	180	0	- 180 acres
Parcel-Specific LUD Changes	530	0	- 530 acres
Riverside Municipal Airport	10	0	- 10 acres
San Jacinto Ag/Development Potential Study Area	3,500	2,830	-530 acres
Totals	**9,590**	**4,250**	**- 5,340 acres**

Key: LUD = General Plan Land Use Designation; NC = No Change; OV = Overlay; RVSA = Rural Village Study Area; RVO = Rural Village Overlay; PA = Policy Area

Footnotes:

1. Existing uses derived from photo-inspection of aerial parcel data, *not* General Plan LUDs (which may or may not be "AG" under the existing General Plan). Uses deemed "existing agriculture" include crops, pastures, grazing lands, dairylands, orchards, groves, vineyards, etc., as well as feedlots, ranches (i.e., non-residential facilities for animal keeping, handling, etc.) and dairies. Where distinguishable from these agricultural uses, residential uses (homes and their yards) are *not* included in this category. All values rounded to nearest 10 or whole number if under 10.
2. Difference between lands in existing agricultural uses and lands that would be in agricultural usage at build out of the General Plan as amended by GPA No. 960 (assuming 100% build out of all lands proposed for AG designation and that all lands build out as per their proposed General Plan LUDs).

Source: Riverside County Planning and GIS Departments, GIS analysis of project application data, 2011.

The 4,900-acre total also includes the proposed Northeast Business Park Overlay which provides an alternate industrial (business park) designation on an AG-designated area with existing dairies (affecting roughly 260 acres within preserves). A number of parcel-specific changes totaling roughly 180 acres within agricultural preserves would also be changed to developed land uses; mostly rural residential. In addition, the changes proposed near Blythe Airport plus a number of other parcel-specific proposed changes would occur within one-quarter mile of an existing agricultural preserve. None of the new policy areas or overlays increasing development potential (e.g., Meadowbrook RVO, Goodhope RVO, Lakeland Village) are within a quarter-mile of any agricultural preserves.

Table 4.5-G: Effects on State-Designated Farmlands

State Farmland Classification / Designation	Total Acreage in Unincorp. Riverside County	Areas to Non-AG LUD* GPA No. 960 (acres)	AG LUD Gains* GPA No. 960 (acres)
Prime Farmland	105,390	- 5	0
Farmland of Statewide Importance	36,660	- 27	0
Unique Farmland	32,360	0	0
Farmland of Local Importance	162,410	- 210	317
TOTALS	**336,830 ac**	**- 243 ac**	**+ 317 ac**
		Overall net change = + 74 acres	

* Only areas going into AG land use designations (LUDs) calculated. Additional farmlands are expected to be conserved where lands are proposed to be placed under OS-CH or OS-C designations for conservation of biological/habitat values.

Source: Riverside County GIS Dept., GIS analysis of project data, 2010. California Department of Conservation, Farmland Mapping and Monitoring Program, Important Farmland Maps 2008, published September 2009.

Table 4.5-H: Project Relationship to Existing Agricultural Preserves

Project Component[1]	Near Ag. Preserve (Within 1/4 mile)	Within Ag. Preserve (Acres)[2]
Aguanga RVSA[3]	yes	200
Anza Valley PA[3]	yes	1,020
Blythe Airport	yes	---
Fish Farms[3]	yes	30
Northeast Business Park OV	yes	260
Parcel-Specific LUD Changes	yes	300 (120)[3]
RCA-Acquired Conservation Lands[3]	yes	20
San Jacinto Ag/Development Potential Study Area[3]	yes	3,060
Totals		**4,890 acres**

Key: LUD = General Plan Land Use Designation; NC = No Change; OV = Overlay; RVSA = Rural Village Study Area; RVO = Rural Village Overlay; PA = Policy Area

Footnotes:
1. Project components *not* in or near an agricultural preserve are not listed.
2. All values rounded to nearest 10. Thus, totals may not sum precisely.
3. Changes proposed would generally reduce development potential or be consistent with agricultural uses; that is, they would *not* adversely affect agricultural activities.

Source: Riverside County Planning and GIS Departments, GIS analysis of project application data, 2012.

C. Analysis of Effects on Forestry Resources

Of land use changes associated with GPA No. 960, only two sites have existing forestry resources. Site C2-3b encompasses just under 36 acres forested with mature pines and firs in the Idyllwild region off Highway 243. Site C2-4 encompasses roughly 41 acres similarly forested and also located northwest of Idyllwild in the San Jacinto Mountains. These two sites are vegetated with a high percentage of cover by "Montane Coniferous Forest" vegetation of varying densities, according to Western Riverside County mapping data (see Figure 4.5.2) and aerial photo (RCLIS layer) inspection. These are the only two sites included in GPA No. 960 located at elevations at which commercially important timber resources are known to occur (that is, generally above 5,000 feet).

Both sites are proposed to change from OS-CH (Open Space – Conservation Habitat, which is a designation used only from public lands acquired for conservation and, thus, was misapplied to this privately owned land) to OS-RUR (Open Space – Rural, which allows one single-family home per 20 acres). Although the placement of houses on these sites would be inconsistent with commercial timber operations, neither site is of sufficient size to offer significant potential for commercial timber operations. Further, any timber/tree removal necessary for potential future single-family residential development on these sites could readily be accomplished under the 3-acre timber clearing exemptions discussed earlier.

Other areas proposed for foreseeable land use changes have sporadic or occasional stands of forest vegetation. For example, scattered stands of "Montane Hardwood" and "Montane Hardwood-Conifer Forest" occur sporadically within the bounds of the proposed Anza Policy Area. None of these areas or forest resources, however, occurs to the extent necessary to support industrial or commercial timber resource production. No known Christmas tree farms, the only type of on-going commercial timber activity known to occur in Riverside County, occurs on or in the vicinity of any of the proposed land use or other project changes. Woody biomass clearance activities would not be affected by the project as such activities are triggered by fire safety needs not development potential.

4.5.6 Agricultural and Forestry Resources - Impacts and Mitigation

A. Would the project convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?

Impact 4.5.A – Cause the Conversion of Designated Farmlands: The specific land use and policy changes proposed by the project, GPA No. 960, would adversely affect (i.e., result in the conversion of) only minimal amounts of State-designated Prime Farmland, Farmland of Statewide Importance and Farmland of Local Importance ("Farmlands") to a variety of non-agricultural uses. No Unique Farmland would be affected. Due to the very small areas involved, these impacts would be less than significant. Indirectly, the growth accommodated and facilitated by the project would result in additional development and infrastructure demand that would further conversion of designated Farmlands to urban uses and result in other changes in the existing environment leading to additional Farmland conversion. This indirect impact would be significant and unavoidable.

1. Analysis of Impact 4.5.A

Assuming that 100% of the lands with LUDs being revised are built out with their new designated use, as shown in Table 4.5-G (Effects on State-Designated Farmlands), the specific land use and policy changes proposed by the project would adversely affect (i.e., result in the conversion of) only minimal amounts (32 acres) of State-designated Prime Farmland or Farmland of Statewide Importance. In addition, while 210 acres of Farmland of Local Importance would be converted to a variety of non-agricultural uses, nearly 220 acres of lands, including existing fish farms (aquaculture) are proposed for new designation as agriculture ("AG" LUD).

As mapped according to the baseline data provided by the State of California, the unincorporated portion of Riverside County has designated Farmland totals of 105,390 acres of Prime, 36,660 acres of Statewide Importance, 32,360 acres of Unique and 162,410 acres of Farmland of Local Importance (See Table 4.5-D (State-Designated Farmland Data for Riverside County)). According to the Riverside County Agricultural Commissioner, the amount of land in agricultural production totaled 187,800 acres as of 2009 (inclusive of cities) (See Table 4.5-A). Thus, in light of these totals, the loss of 32 acres represents an insignificant amount overall.

However, the total amount of land designated for agricultural uses under both the existing General Plan and the General Plan as amended GPA No. 960 at full build out (roughly 190,000 acres) is *less* than the amount of agricultural land currently designated as Prime, Unique, Statewide and Locally Important Farmland (roughly 336,800 acres). Thus, future development accommodated by the project in locations not foreseeable at this time would still likely result in the loss of additional Prime, Unique, Statewide and Locally Important Farmlands.

Indirectly, the growth accommodated and facilitated by the project would also result in additional development and infrastructure demand that would further fuel conversion of agricultural uses to urban resulting in further loss of designated Farmlands. Compliance with existing and proposed regulations, General Plan policies and mitigation measures would help reduce this indirect impact. However, it would still be significant and unavoidable.

2. Regulatory Compliance for Impact 4.5.A

The adverse effects associated with potential changes to agricultural resources would be avoided, reduced or minimized through adherence to or compliance with the following regulations and policies.

a. Compliance with Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts due to, or resulting in, the conversion of State-designated Farmlands to non-agricultural uses. The existing regulations and policies presented here are not part of proposed GPA No. 960. Rather, they are policies within the existing General Plan and ordinances.

Ordinance No. 509 - Establishing Agricultural Preserves: Compliance with Ordinance No. 509 would protect agricultural uses from incompatible uses by limiting what types of development and use may occur within an agricultural preserve and ensuring such preserves are operated and managed pursuant to all applicable State of California regulations.

Ordinance No. 625 – Right to Farm: Existing agricultural uses, including any lands zoned primarily for agricultural purposes, are protected from nuisance complaints often generated by encroaching non-agricultural uses via the "right to farm" ordinance. It reduces legal nuisance liabilities potentially directed at pre-existing agricultural uses by requiring new properties within 300 feet of any land zoned primarily for agricultural purposes be given notice of the pre-existing use and its rights to continue.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would contribute to ensuring development impacts on Farmlands, including their conversion to non-agricultural uses, are less than significant. See Section 4.5.3.C for full text of each of these policies. Implementation of these agricultural General Plan policies would help reduce the interface effects of development encroachment from surrounding area upon farmlands, but would not reduce the significant impact associated with the conversion of agricultural land to non-agricultural uses.

Policy OS 7.1: This policy encourages the County of Riverside to collaborate with federal and state agencies in updating and maintaining accurate agricultural resources maps. Identifying and mapping agricultural resources throughout Riverside County aids in the preservation and protection of those resources and ultimately reduces potential adverse impacts to those areas including impacts due to farmland conversion.

Policy OS 7.3: This policy encourages "conservation of productive agricultural lands and the preservation of prime agricultural lands."

Policy OS 7.5: This policy addresses combining agriculture with "other compatible open space uses in order to provide an economic advantage to agriculture."

Policy LU 20.1: This policy encourages the preservation of agriculturally designated lands through various incentives such as tax credits for those lands where agricultural activity can be sustained, impacts from incompatible uses are minimized and the character and lifestyle of the area is accommodated, thereby reducing the potential amount of land being proposed for farmland conversions.

Policy LU 20.2: This policy ensures the protection of agricultural uses by discouraging incompatible land uses, intensities and land divisions in the proximity of agricultural operations, thereby reducing potential adverse impacts related to farmland conversion.

Policy LU 20.4: This policy encourages conservation of productive agricultural lands, including those in high-value crop production, reducing potential adverse impacts related to farmland conversion.

Policy LU 20.5: This policy encourages Riverside County's continued participation in the California Land Conservation Act of 1965 (Williamson Act). Continuing to restrict lands subject to the Williamson Act to agricultural and related open space uses aids in the prevention of farmland conversions.

Policy LU 20.6: This policy requires that State of California agricultural land classifications be taken into consideration when 2.5-year Agriculture Foundation Component Amendments are reviewed by the County of Riverside, ensuring that any potential conversion of agricultural land to non-agricultural uses will also include review of and compliance with State of California procedures.

Policy LU 20.9: This policy promotes weighing the preservation of agriculture with the economic benefits of surface mining when mineral excavation is proposed on agricultural lands. Studying and weighing the benefits of both proposals will ensure that potential adverse impacts related to the conversion of farmland are reduced.

Policy LU 20.11: This policy encourages the County of Riverside to pursue programs that will create incentives for the continued viability of agricultural activities. This policy recognizes the importance of agricultural activity to Riverside County and promotes the preservation of those activities, thereby reducing potential impacts to farmland conversion.

3. Finding on Significance for Impact 4.5.A

In terms of direct impacts, the project would have a net increase in the amount of land designated 'Agriculture,' which includes a net increase of roughly 74 acres of land designated as Farmland of Local Importance by Riverside County. This net increase, as well as compliance with the above-cited regulations, programs and General Plan policies, would offset project impacts associated with the direct loss of land designated by the State of California as Prime Farmland and Farmland of Statewide Importance (roughly 32 acres, respectively). Hence, for these reasons, direct impacts resulting from the land use-related changes to the General Plan proposed by GPA No. 960 would be less than significant. Indirectly, however, the growth accommodated and facilitated by the project would also result in additional development and infrastructure demand that would further fuel conversion of agricultural uses to urban resulting in further loss of designated Farmlands. Compliance with existing Riverside County ordinances and General Plan policies would help reduce this indirect impact. However, consistent with the findings made previously for the General Plan in EIR No. 441, these indirect impacts would still be significant and unavoidable.

B. Would the project conflict with existing agricultural zoning, agricultural use or with land subject to a Williamson Act contract or land within a Riverside County Agricultural Preserve? Cause development of non-agricultural uses within 300 feet of agriculturally zoned property? Or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

Impact 4.5.B – Encroach On or Conflict With Existing Agricultural Uses: Future development pursuant to the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in conflicts with existing zoning, agricultural uses, lands subject to a Williamson Act contract or within a Riverside County Agricultural Preserve. It may also result in the introduction of new urban uses within 300 feet of agriculturally-zoned property. Indirectly, the growth accommodated and facilitated by the project would result in additional development and infrastructure demand that would further conversion of agricultural lands to urban uses, encroach on existing agricultural activities and mapped Farmlands, and result in other changes in the existing environment leading to additional Farmland conversion. This indirect impact would be significant and unavoidable.

1. Analysis of Impact 4.5.B

According to the Riverside County Agricultural Commissioner (Table 4.5-A), nearly 190,000 acres of land was in agricultural production countywide (inclusive of cities) as of 2009. Assuming all land designated for agricultural use was actively farmed at the time of build out (approximately 2065), implementation of the urbanizing overlays, policy areas and other options proposed in the project would result in the loss of approximately 5,340 acres of lands currently in agricultural production (Table 4.5-F). This is despite the overall net *increase* in land designated "AG" pursuant to the General Plan; many agricultural activities within Riverside County occur on lands not formally designated AG under the General Plan. Hence, in addition to the 5,340 acres that would potentially be directly lost by foreseeable spatial changes associated with the project, other development resulting from the project not foreseeable at this time would also be expected to adversely affect existing agricultural uses.

In terms of agricultural preserves and Williamson Act contracts, GIS data indicates that of the 4,890 acres of spatial changes associated with the project, only about 560 acres would adversely affect (result in the conversion of or conflict with) lands within existing agricultural preserves. The remaining 4,330 acres would be subject to changes *decreasing* development potential for sites (e.g., Anza Valley Policy Area) or strengthen agricultural usage (fish farm AG LUD designations). See Table 4.5-H (Project Relationship to Existing Agricultural Preserves).

Nevertheless, as the total amount of land designated for agricultural uses under both the existing General Plan and as proposed under GPA No. 960 at full build out is less than the amount of agricultural land currently designated as Prime, Unique, Statewide and Locally Important Farmland (336,830 acres), future development accommodated pursuant to the General Plan as revised by the project would still likely result in significant conflicts with existing agricultural uses, zones and activities, as well as encroachment and other indirect effects leading to further conversion and loss of Farmlands.

Throughout California, Prime Farmland is being lost to urban expansion near existing cities. Urban encroachment of development into areas in agricultural production, particularly if within 300 feet, increases the likelihood of conflicts between these two fundamental types of uses. When residential and other urban-density land uses encroach into areas in agricultural production, traditional agricultural nuisances become much more problematic to the arriving residents. Typical agricultural nuisance effects can include generation of dust, odors and noise from agricultural operation, proliferation of flies and other pests around livestock, potential soil or groundwater

contamination (from large-scale feed lots and dairies) and overspray or runoff exposure from aerial application of agricultural chemicals. For farmers, urban encroachment adversely affects the efficiency of remaining farming operations due to increased air pollution, livestock predation by pets, crop diseases resulting from inadequate care of off-farm ornamental plants, restrictions on pesticide use and burning and requirements to set aside on-farm buffer zones. At the same time, production costs increase due to rising land values, water scarcity, theft and vandalism of farm equipment, crop pilferage, road congestion, change in property tax structure and personal injury liability resulting from trespassing on farms.

By reducing the profitability of remaining farming operations, urban encroachment tends to have a spiraling effect, encouraging further losses of farmland to urban development. The Agricultural Commissioner reports that over the last decade, land in agricultural production (cultivation) has fallen markedly by nearly 30% within Riverside County (including incorporated cities), with accompanying decreases in the number of full-time farms in Riverside County and farm sizes.

2. Regulatory Compliance for Impact 4.5.B

The adverse effects associated with potential changes to agricultural resources would be avoided, reduced or minimized through adherence to or compliance with the following regulations and policies.

a. Compliance with Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts due to, or resulting in, the conversion of Farmlands to non-agricultural uses, encroachment of incompatible uses on agricultural areas and other related changes. The existing regulations and policies presented here are not part of proposed GPA No. 960. Rather, they are regulations and policies that have been approved by the County of Riverside as separate prior discretionary actions.

Ordinance No. 509 - Establishing Agricultural Preserves: Compliance with Ordinance No. 509 would protect agricultural uses from incompatible uses by limiting what types of development and use may occur within an agricultural preserve and ensuring such preserves are operated and managed pursuant to all applicable State of California regulations.

Ordinance No. 625 – Right to Farm: Existing agricultural uses, including any lands zoned "primarily for agricultural purposes," are protected from nuisance complaints often generated by encroaching non-agricultural uses via Riverside County Ordinance No. 625, the "right to farm" ordinance. It reduces legal nuisance liabilities potentially directed at pre-existing agricultural uses by requiring new properties within 300 feet of any land zoned primarily for agricultural purposes be given notice of the pre-existing use and its rights to continue.

Riverside County Rules and Regulations Governing Agricultural Preserves: In relation to the preservation of existing agricultural lands and the protection of land subject to the Williamson Act, CAPTAC reviews any diminishment or disestablishment of agricultural preserves and provides a recommendation to the Board based on a number of findings:

- Whether a notice of nonrenewal has been served pursuant to the Williamson Act, Section 401 of these rules.
- Whether the cancellation is likely to result in the removal of adjacent lands from agricultural use.

- Whether the proposed alternative use of land is consistent with the provisions of the Riverside County General Plan.
- Whether the cancellation would result in discontiguous patterns of urban development.
- Whether there is proximate non-contracted land which is both available and suitable for the proposed use or whether the development of the contracted land would provide more contiguous patterns of urban development of proximate non-contracted land.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would contribute to ensuring development impacts on Farmlands, including their conversion to non-agricultural uses, are less than significant. See Section 4.5.3.C for full text of each of these policies. Implementation of these agricultural resource-related General Plan policies would help reduce the interface effects of development encroachment upon farmlands, but would not reduce the significant impact associated with the conversion of agricultural land to non-agricultural uses.

Policy OS 7.1: This policy encourages the County of Riverside to collaborate with federal and state agencies in updating and maintaining accurate Agricultural Resources maps. Identifying and mapping agricultural resources throughout Riverside County aids in the preservation and protection of those resources and ultimately reduces potential adverse impacts including the potential encroachment on existing agriculture.

Policy OS 7.3: This policy encourages "conservation of productive agricultural lands and the preservation of prime agricultural lands." Implementation of Policy OS 7.3 will aid in preventing new development from encroaching on existing agriculture.

Policy OS 7.5: This policy addresses combining agriculture with "other compatible open space uses in order to provide an economic advantage to agriculture," thereby locating those land uses that are incidental to agriculture near land currently designated as agriculture, preventing the encroachment of those uses that are not compatible with agriculture.

Policy LU 20.1: This policy encourages the preservation of agriculturally designated lands through various incentives such as tax credits for those lands where agricultural activity can be sustained, impacts from incompatible uses are minimized and the character and lifestyle of the area is accommodated. Compliance with this policy encourages the preservation of land currently designated as agriculture, thereby reducing potential adverse impacts pursuant to GPA No. 960 in relation to encroachments and conflicts with existing agriculture.

Policy LU 20.2: This policy ensures the protection of agricultural uses by discouraging incompatible land uses, intensities and land divisions in the proximity of agricultural operations, thereby reducing potential adverse impacts pursuant to GPA No. 960 related to encroachments and conflicts with existing agriculture.

Policy LU 20.4: This policy encourages productive agricultural lands to be conserved, including agricultural land that maintains high-value crop production, thereby reducing potential adverse impacts pursuant to GPA No. 960 in relation to encroachments and conflicts with existing agriculture.

Policy LU 20.5: This policy encourages Riverside County's continued participation in the California Land Conservation Act of 1965 (Williamson Act). Continuing to restrict lands subject to the Williamson Act to agricultural and related open space uses aids in the preservation and protection of existing agriculture and prevents encroachments and conflicts on existing agriculture.

Policy LU 20.6: This policy requires that State of California agricultural land classifications be taken into consideration when 2.5-year Agriculture Foundation Component Amendments are reviewed by the County of Riverside, ensuring that any potential conversion of agricultural land to non-agricultural uses would also include review of and compliance with State of California procedures.

Policy LU 20.7: This policy requires the adherence to Riverside County's right-to-farm ordinance. The implementation of and compliance with Ordinance No. 625 would reduce potential adverse impacts to existing agriculture by establishing standards throughout Riverside County to continue to "conserve, protect and encourage the development, improvement, and continued viability" of agricultural lands and related industries.

Policy LU 20.11: Through Policy LU 20.11, the County of Riverside will explore and create various incentive programs that would encourage the continued viability of agricultural activities. Creating such incentive programs would encourage Riverside County residents and developers alike to preserve and develop agricultural activities throughout Riverside County, thereby reducing potential adverse impacts to existing agriculture.

c. Compliance with Proposed New and Revised General Plan Policies

The following new or revised policies of the Riverside County General Plan, proposed as part of GPA No. 960, would contribute to ensuring development impacts on agricultural activities and uses are less than significant. See Section 4.5.3.C for full text of each of these policies.

Policy LU 20.8: This policy encourages educational and incentive programs in coordination with the Agricultural Commissioner's Office, the University of California Cooperative Extension Service and the Riverside County Farm Bureau to convey the importance of conserving watercourses and their associated habitat and providing protective buffers for domestic and farm livestock grazing. Increasing awareness on this issue will help reduce potential adverse impacts to agriculture.

3. Finding on Significance for Impact 4.5.B

As noted for Impact 4.5.B, above, in EIR No. 441, prepared for the 2003 RCIP General Plan, it was found under "Impact 4.2.2" (Final EIR, page 4.2-32) that implementation of the General Plan would "result in the significant conversion of active agricultural land and agricultural soils to non-agricultural uses." Although the existing General Plan includes policies intended to identify and implement programs that would limit the conversion of agricultural land to non-agricultural uses, EIR No. 441 finds that these policies do not set specific requirements that would limit the conversion of agricultural lands to non-agricultural uses. Further, EIR No. 441 finds the policies do not identify the amount, extent or location of agricultural land to be conserved and that it is impossible to assess if policies would effectively reduce potentially significant impacts associated with the conversion of agricultural land to non-agricultural uses.

As a result, future development accommodated by the land use and policy changes proposed by the project is similarly found to have the potential for significant and unavoidable indirect impacts to agricultural uses through introducing new urban uses within 300 feet of agriculturally zoned property and contributing to the demand for additional development and infrastructure that would further fuel conversion of agricultural lands to non-agricultural uses. Pursuant to EIR No. 441, no additional project-specific mitigation measures are feasible. Thus, impacts due to conflict with existing agricultural zoning or uses, including those leading to the conversion of designated Farmlands, as well as encroachment impacts, would be significant and unavoidable.

C. Would the project result in the loss of forest land or conversion of forest land to non-forest use? Conflict with existing zoning for, or cause rezoning of, forest land, timberland or timberland zoned Timberland Production? Or involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use?

Impact 4.5.C – Adversely Affect Forest Lands and Forestry Uses: In Southern California, including Riverside County, climate and topography limit the types and locations of forest lands and their potential for commercial or industrial timber utilization. Accordingly, there are no existing or currently proposed zoning of forest land, timberland or Timberland Production Zones within the county; and the project would not conflict with any of these. Woody biomass removal, a type of forestry utilized by utility companies and forest management agencies for fire safety purposes, occurs with Riverside County, but not within fixed locations. Nevertheless, forest lands do occur in scattered locations within the county. Hence, future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in loss or conversion of forest land to non-forest uses or result in other changes in the existing environment which, due to their location or nature, could result in forest land conversion as well. Further, growth accommodated and facilitated by the project would indirectly result in additional development and infrastructure demand that would create additional potential for forest land conversion or encroach of incompatible uses. Compliance with existing and proposed regulations and policies would ensure forestry impacts are less than significant.

1. Analysis of Impact 4.5.C

As discussed in Section 4.5.2.f, above, according to the State of California there are no commercial timber operations or yields within Riverside County. Nor does Riverside County have any existing or currently proposed zoning of forest land, timberland or Timberland Production Zones within the county. Hence, this project would not conflict with any of these. In addition, since the Woody Biomass Program operates on the basis of slash and overgrowth removal, such as removal of brush from under a power line easement or removal of trees killed by bark beetle infestation, none of the changes proposed by GPA No. 960 would have an adverse effect on this program.

Analysis presented in Section 4.5.4, above, indicates that of land use changes associated with GPA No. 960, only two sites have existing forestry resources. These sites, located in the San Jacinto Mountains in central Riverside County, are vegetated with high percentages of "Montane Coniferous Forest" of varying densities totaling approximately 76 acres. These are the only two sites included in GPA No. 960 located at elevations at which commercially important timber resources are known to occur (that is, generally above 5,000 feet). These sites are proposed to change from OS-CH (Open Space – Conservation Habitat), which generally does not allow any development, to OS-RUR (Open Space – Rural), which allows one single-family home per 20 acres. These sites are too small for most economically viable commercial timber operations. Also, due to the low densities allowed, it is possible that any timber/tree removal necessary for potential future single-family residential use of these sites could be accomplished under the 3-acre timber clearing exemptions discussed earlier. Direct project-related forestry impacts associated with these land use designation changes would be less than significant.

Other areas proposed for land use changes have sporadic or occasional stands of forest vegetation, such as scattered and sporadic stands of "Montane Hardwood" and/or "Montane Hardwood-Conifer Forest," particularly at elevations below 5,000 feet. None of these areas or forest resources, however, occurs to the extent necessary to support industrial or commercial timber resource production. The only "Christmas tree farms" within Riverside County consist of nursery stock operations and do not utilize naturally occurring stands of trees.

Thus, overall any forestry impacts associated with these resources and the proposed changes, both the known spatial changes and changes not foreseeable at this time, would be minor or less than significant.

In the case of the two sites mentioned above, as well as the sporadic or occasional stands of forest vegetation, where existing forest lands or timber resources may be affected by future development encroachment or other changes in the existing environment as a result of the proposed project, compliance with the regulatory measures and existing and proposed General Plan policies outlined below would be sufficient to ensure any such forestry impacts are less than significant.

2. Regulatory Compliance for Impact 4.5.C

Adverse effects related to forest lands and timber resources, including loss of forest land, conversion of forest land to non-forest use, zoning or use conflicts, or other changes resulting in conversion of forest land to non-forest uses, would be avoided, reduced or minimized through adherence to or compliance with the following regulations and policies.

a. Compliance with State and County Regulations

The existing regulations and policies presented here are not part of proposed GPA No. 960. Rather, they are regulations and policies that have been approved by the County of Riverside as separate prior discretionary actions. Compliance with the following California State and Riverside County regulations would prevent significant impacts to forest lands and uses.

California Forest Practice Act: Forest land resources shall be protected through the County of Riverside requiring all applicable projects (for example, commercial clearing or other timber operations, site clearances of greater than 3 acres of timber, etc.) to comply with applicable State Forest Practice Act rules and regulations, including attainment of an approved Timber Harvest Plan (THP), Non-Industrial Timber Management Plan or exemption, as warranted by the proposed project and resources of the site. Compliance with these state regulations ensures that any future timberland uses within Riverside County are conducted according to the standards established by the State of California for the protection and safe utilization of forest lands and timber resources. THPs reduce potential adverse impacts on forest lands and uses by establishing a harvest blueprint for a particular site that would detail exactly what would be harvested, how any harvesting would be done, as well as the necessary steps that would be taken to protect the environment. All THPs are required to be in compliance with the appropriate federal and state laws, further ensuring that impacts associated with any harvesting activities would have a minimal impact on forest land and uses.

Ordinance No. 559 - Regulating the Removal of Trees: This ordinance protects forest and timber resources within the county by requiring the review and issuance of a permit for the removal of living native trees on parcels or property greater than one-half acre and located above 5,000 feet elevation. For lots greater than one-half acre and located above 5,000 feet in elevation, the County of Riverside requires projects to demonstrate compliance with this ordinance prior to the issuance of any grading or other ground-disturbing permits. Ordinance No. 559, reduces potential adverse impacts to agricultural and forest lands and uses by protecting existing native trees, thereby protecting the timberlands of Riverside County.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would contribute to ensuring development impacts on forest lands, including their conversion to non-forest uses, are less than significant. See Section 4.5.3.C for full text of each of these policies.

Policies OS 8.1 and 8.2: These policies reduce potential adverse impacts to forest lands and uses by requiring development proposals cooperate with the appropriate federal and state agencies in order to achieve "sustainable conservation of forest land" and to provide the support for "conservation programs to reforest privately held forest lands." These policies would aid in protection of Riverside County's natural resources and habitat lands, including those of the MSHCPs.

Policy OS 9.4: This policy reduces potential adverse impacts to woodlands by promoting the conservation of oak tree resources within the county.

c. Compliance with Proposed New and Revised General Plan Policies

The following new Riverside County General Plan policies, proposed as part of GPA No. 960, would contribute to ensuring development impacts to forest lands are less than significant.

Policy LU 6.8: This new policy is proposed to directly prevent loss of valuable forest lands and timber resources by specifying when compliance with State of California forestry regulations and the Riverside County tree-removal ordinance shall be required. Lastly, it specifies a minimum of 1:1 tree replacement ratio for mature trees lost.

Policy LU 7.6: This proposed policy would require that proposed developments buffer and/or maintain a natural edge when directly adjacent to National Forests. Such buffering and natural edges aid in protecting forests from urban interface conflicts and edge effects.

3. Finding on Significance for Impact 4.5.C

As discussed above**,** implementation of, and compliance with, the above-listed regulatory programs and General Plan policies, would ensure that potential adverse impacts to forest lands and uses from development pursuant to GPA No. 960 would have less than significant impacts.

4.5.7 Significance After Mitigation for Agricultural and Forestry Resources

With the implementation of, and compliance with, the above-listed existing regulatory programs, Riverside County Ordinance No. 559 and General Plan policies, development accommodated under the project, GPA No. 960, would be less than significant with respect to forest land and forestry impacts.

Development and implementation activities accommodated by the proposed project would also be subject to a number of existing General Plan policies, existing Riverside County ordinances and other existing governmental regulations, as identified previously, to reduce to below the level of significance potential adverse impacts on

direct conversion of State-designated Prime Farmland, Farmland of Statewide Importance and Farmland of Local Importance, or land actively utilized for agricultural production, to a variety of non-agricultural uses.

Future development accommodated by the land use and policy changes proposed by the project also has the potential for significant and unavoidable indirect impacts to agricultural uses through introducing new urban uses within 300 feet of agriculturally-zoned property and contributing to demand for additional development and infrastructure that would further spur conversion of agricultural lands to non-agricultural uses. It also has the potential to conflict with existing zoning, agricultural uses and lands subject to a Williamson Act contract or within a Riverside County agricultural preserve. Pursuant to EIR No. 441, no additional project-specific mitigation measures have been identified for General Plan implementation. Thus, indirect impacts leading to the conversion of designated Farmlands and conflicts between urban and agricultural land uses remain significant and unavoidable.

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Section 4.6

Air Quality

Section 4.6 Air Quality

4.6.1 Introduction

This section assesses the potential impacts on air quality resulting from implementation of further development accommodated by the Riverside County General Plan, as amended pursuant to the proposed project, GPA No. 960. This includes the potential for the project to conflict with or obstruct implementation of applicable air quality plans; violate an air quality standard or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment; expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors that would affect a substantial number of people. Global climate change and greenhouse gas emissions are addressed separately in Section 4.7 (Greenhouse Gases). Air quality modeling results used herein are provided in Appendix EIR-5.

The State CEQA Guidelines require that the project baseline consist of the physical environmental conditions at the project site and vicinity of the project as they exist at the time the notice of preparation (NOP) of the EIR is published or at the time the environmental analysis begins. The NOP for the project was published in 2009, and the existing conditions at that time are the baseline for purposes of the analysis in this section. However, the data used for purposes of calculating those baseline conditions includes multiple years of data, where that data was the most current available. For example, with respect to ambient air quality emissions for the project area, the years 2007 through 2009 were used because that was the most current validated data available at the time of the analysis and provided the most accurate means of assessing air quality conditions across the project area. Similarly, for the analysis of land use-based impacts, data from 2008 was included in the analysis because it was the most complete set of data addressing the project area's existing conditions in 2009. Because the baseline is built and the existing air quality plans and programs already take the impacts from the baseline into account, the analysis only discussed the effects from the development under the entire General Plan Area as proposed to be built out under GPA No. 960. Air quality impacts are of regional as well as local importance, therefore impacts within this section addressed countywide changes that would occur through build out of Riverside County and not just the areas specifically affected by the changes between the previous General Plan and GPA No. 960.

4.6.2 Existing Environmental Setting – Air Quality

A. Air Basins in Riverside County

Riverside County spans three different air basins: South Coast, Salton Sea and Mojave Desert (Figure 4.6.1 (Air Basins in Riverside County)). The portions of Riverside County within the South Coast and Salton Sea Air Basins

are regulated by the South Coast Air Quality Management District (SCAQMD). SCAQMD also governs Los Angeles and Orange counties, plus a small portion of San Bernardino County. The easternmost third of Riverside County, within the Mojave Desert Air Basin, is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD), which also governs the desert portion of San Bernardino County.

The three air basins in Riverside County have unique characteristics that affect the air quality in the region. The following sections describe the climate and meteorology of each air basin and the effects these characteristics have on air quality.

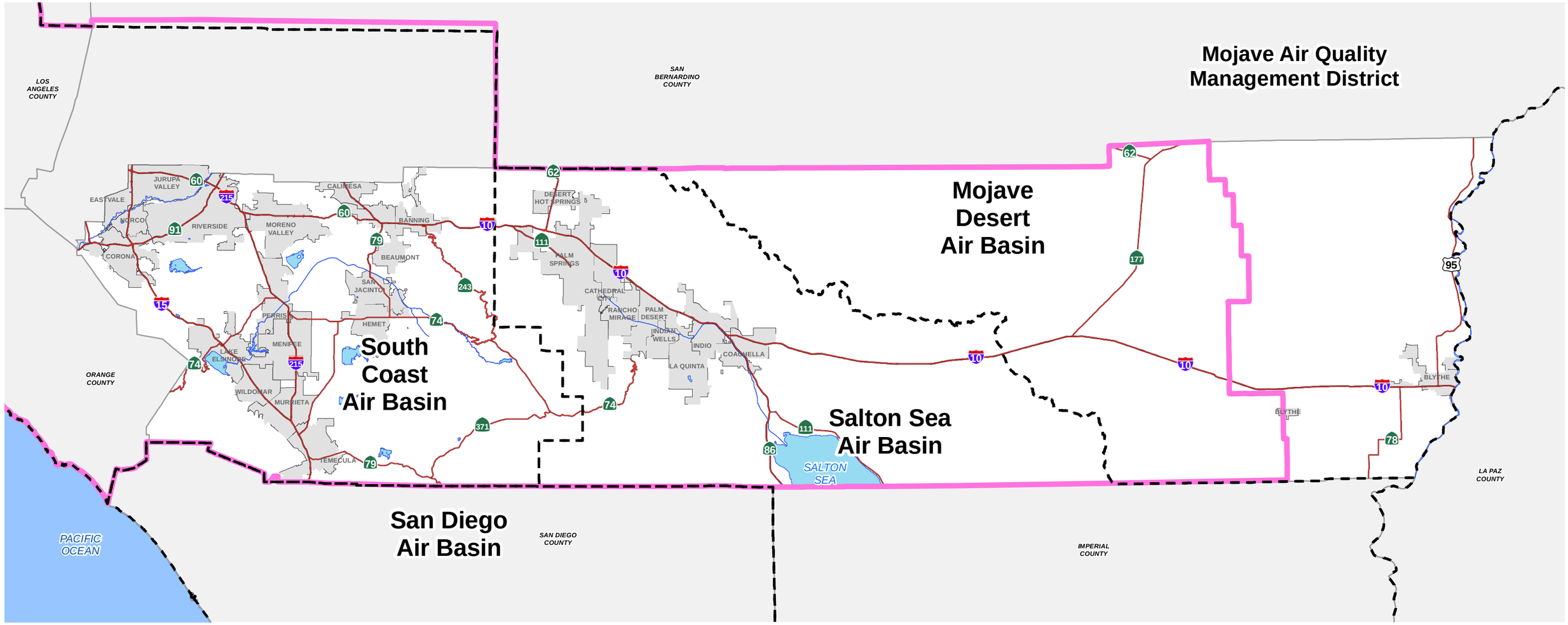
1. South Coast Air Basin

The South Coast Air Basin (SCAB) is surrounded by mountains trapping the air and its pollutants in the valleys or basins below. This area includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino and Riverside counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east, the South Coast Air Basin is an area of high air pollution potential. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes and moderate humidity. Air quality within the SCAB is influenced by a wide range of emissions sources – such as dense population centers, heavy vehicular traffic and industry.

The annual average temperature varies throughout the SCAB, ranging from the low to mid 60s to over 100 degrees during the summer, measured in Fahrenheit (°F). Riverside County is located in the inland, eastern portion of the SCAB and experiences more variation in temperature than the coastal areas. The annual average temperature in the SCAB region of Riverside County is approximately 60°F, although temperatures can often exceed 90°F. Typically, the hottest months are July and August with the coldest months being December and January. The majority of the annual rainfall within the SCAB occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in the coastal regions. Annual average rainfall in the Riverside County SCAB area is 9.1 inches.

The SCAB experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days with no inversion or with high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the basin are transported eastward, predominantly into Riverside and San Bernardino counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the SCAB, generally resulting in worse air conditions in the western parts of the basin. Santa Ana conditions tend to last for several days at a time.

The SCAB has very low average wind speeds; the dominant daily wind pattern is an onshore 8 to 12 mph during the day and offshore 3 to 5 mph winds during the night. These wind patterns are disrupted occasionally by winter storms or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the SCAB.



Data Source: California Air Resources Board (2010)

SCAQMD Jurisdiction
Air Quality Basins
Highways
Cities
Waterbodies

Figure 4.6.1

December 16, 2013

0 10 20 Miles

RIVERSIDE COUNTY PLANNING DEPARTMENT

AIR QUALITY BASINS

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2. Mojave Desert Air Basin

The Mojave Desert Air Basin (MDAB) covers a large portion of easternmost Southern California. The terrain is made up of mountain ranges interspersed with long broad valleys that often contain dry lakes. The MDAB covers most of San Bernardino County and portions of Riverside, Los Angeles and Kern counties. This basin is bordered in the southwest by the San Bernardino Mountains and separated from the San Gabriel Mountains by the Cajon Pass.

The MDAB is an assemblage of mountain ranges rising up to 10,000 feet above long broad valleys. Prevailing winds out of the west and southwest are due to the proximity of the MDAB to coastal and central regions and the presence of the Sierra Nevada Mountains, a natural barrier to the north. The MDAB is separated from the Southern California coastal and central California valley regions by mountains whose passes from the main channels for offshore air masses.

During the summer months, the Pacific Subtropical High Cell that sits off the coast inhibits cloud formation and encourages daytime solar heating. Cold air masses moving south from Canada and Alaska rarely influence the MDAB as these systems are weaker and diffuse before reaching the desert.

Most moisture in the basin arrives from infrequent warm, moist and unstable air masses from the south and averages about 3.9 inches of precipitation per year. Classified as a dry-hot desert climate, with portions classified as dry-very hot desert, the MDAB has at least three months where maximum average temperatures exceed 100°F. Because the basin is a desert, it has many days of high temperatures; the annual average for the Riverside County portion of the MDAB is approximately 71°F with many days during the summer exceeding 100°F. The hottest months for the basin are July and August, while the coldest months are December and January.

Topography of the region affects the local meteorological conditions with wind direction primarily from the west, west-southwest and southwest. The "orographic effect" is responsible for a large portion of the prevailing winds in the MDAB. Because of the "orographic effect," air is forced over the mountain range and loses moisture as it rises. As it descends, it also compresses and heats up. Similar to the SCAB, pollutants in the MDAB are trapped and accumulate close to ground level through frequent temperature inversions.

3. Salton Sea Air Basin

Air quality conditions in this portion of Riverside County, although in the Salton Sea Air Basin (SSAB), are administered by the SCAQMD. The SSAB covers all of Imperial County and the central portion of Riverside County (the Coachella Valley area). The Riverside County portion of the basin is bordered by the San Jacinto Mountains in the west and the Little San Bernardino Mountains in the east. Similar to the MDAB, the SSAB receives little moisture from the south and averages about 2.8 inches of rain per year. The annual average temperature for the region is 73°F with temperatures often exceeding 100°F during the hottest months of the summer. These hottest months for the SSAB are July and August with the coldest months being December and January.

During the summer, the SSAB is influenced by a Pacific Subtropical High Cell that sits off the coast. Similar to the MDAB, the cell inhibits cloud formation and encourages daytime solar heating. The SSAB is rarely influenced by weakened and diffuse cold air masses moving south from Canada and Alaska. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

The Salton Sea Air Basin is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins primarily consisting of ozone and PM_{10}. As the desert heats up, it draws cooler coastal air through the narrow San Gorgonio Pass, generating strong and sustained winds that cross erosion zones. These winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property and constituting a significant health threat.

B. Air Pollutants

Air pollutant emissions within the air basins are generated from stationary, mobile and natural sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. Examples are boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and produce many small emissions. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills and consumer products, such as barbeque lighter fluid and hair spray. Construction activities such as excavation and grading that create fugitive dust also contribute to area source emissions.

Mobile sources refer to emissions from on- and off-road motor vehicles, including tailpipe and evaporative emissions. On-road sources are vehicles that may be legally operated on roadways and highways. Off-road sources include aircraft, trains and construction equipment. Mobile sources account for the majority of the air pollutant emissions within most air basins. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

To protect the public health and welfare, the federal and state governments have identified five criteria air pollutants and a host of air toxics that have established ambient air quality standards through the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Criteria pollutants are those air pollutants for which acceptable levels of exposure have been determined and for which an ambient air quality standard has been set. Also, the U.S. EPA has described its characteristics and potential health effects. The air pollutants for which federal and state standards have been promulgated and which are most relevant to air quality planning and regulation in the air basins include ozone, carbon monoxide, suspended particulate matter, sulfur dioxide and lead.

Air pollutants are typically classified as primary or secondary pollutants. Of the five criteria pollutants listed above, carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2) and lead (Pb) are considered primary pollutants because they are emitted directly into the atmosphere. Ozone (O_3) is considered a secondary pollutant because it is not directly emitted but formed through a photochemical reaction in the atmosphere when reactive organic gases (ROGs) and nitrogen oxides (NO_X) combine in the presence of sunlight and produce O_3.

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. The national and state ambient air quality standards delineate the concentrations that could be generally harmful to human health and welfare in order to protect the most sensitive persons from illness or discomfort, and provide a margin of safety.

1. Criteria Pollutants

The criteria pollutants of issue for Riverside County are each described below.

Ozone (O_3): A gas that is formed when volatile organic compounds (VOCs) (also referred to as reactive organic gases (ROGs)) and nitrogen oxides (NO_X), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Because of the way ozone is formed, ROGs and NO_X are known as ozone precursors. Meteorological conditions needed to produce high concentrations of ozone include direct sunshine, early morning stagnation in source areas, high ground surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day and daytime air subsidence that strengthens the inversion layer. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind and warm temperature conditions are favorable.

Carbon Monoxide (CO): A colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based air inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines and motor vehicles operating at slow speeds are the primary source of CO, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$): Extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter comes from road dust, diesel soot, combustion products, abrasion of tires, abrasion of brakes and construction activities.

Sulfur dioxide (SO_2): A colorless, extremely irritating gas or liquid. It enters the atmosphere mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. Although sulfur dioxide concentrations in Southern California have been reduced to levels well below state and national standards, further reductions are desirable because SO_2 is a precursor to sulfates which can also affect human health. Due to regional meteorological features in Southern California, sulfur dioxide converts rapidly to sulfates which are formed through the photochemical oxidation of SO_2.

Lead (Pb): Occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the region. However, since use of leaded gasoline is no longer permitted for on-road motor vehicles, most lead combustion emissions currently arise from off-road vehicles, such as racecars, and some jet fuels. Other sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition and secondary lead smelters.

Toxic Air Contaminants (TACs): TACs are a diverse group of air pollutants that can affect human health, but do not yet have established ambient air quality standards. Though not fundamentally different from the pollutants discussed above, the effects of TACs tend to be local rather than regional. The California Air Resources Board (CARB) has designated nearly 200 compounds as TACs. Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

2. Health Effects of Air Pollutants

Ozone: Individuals exercising outdoors, children and people with pre-existing lung disease, such as asthma and chronic pulmonary lung disease, are considered to be most susceptible to ozone effects. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue and immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increased daily hospital admission rates, as well as

mortality, has been reported. Also, an increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Ozone exposure while exercising is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Reactive Organic Gases: Reactive organic gases are carbon-containing compounds that typically evaporate into the air where they can react with other chemicals. ROGs contribute to the formation of smog, and in some cases may themselves be toxic. ROGs often have an odor and some examples include chemicals in gasoline, alcohol and the solvents used in paints.

Because ROGs encompass a large range of compounds, the health effects resulting from exposure to the various forms of ROGs range from minor and temporary irritation of the mucous membranes to death. As an example, formaldehyde is an ROG and many building materials such as paints, adhesives, wall boards and ceiling tiles slowly emit formaldehyde, which irritates the mucous membranes and can make a person irritated and uncomfortable when indoor concentrations of formaldehyde build up. By contrast, brief exposure (as little as ten minutes) to high concentrations of benzene (another form of ROG) can cause death. Short-term exposure to lower concentrations of benzene can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion and unconsciousness; in most cases people will stop feeling these effects when they are no longer exposed. People who inhale benzene for long periods of time (months or years) at high enough levels may experience harmful effects in the tissues that form blood cells, especially the bone marrow. Long-term exposure to benzene can cause various forms of cancer. Because benzene is carcinogenic, it is also listed as a toxic air contaminant (TAC). TACs are described in more detail below. These examples give the full range of health effects associated with ROGs. This range of health effects depend upon the concentration, length of exposure and particular species of ROG.

Nitrogen Dioxide: Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO_2 at levels found in homes with gas stoves. NO_2 levels in homes with gas stoves can be higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis or emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.

Carbon Monoxide: Inhaled CO has no direct toxic effect on the lungs but effects tissues by interfering with oxygen transport and by competing with oxygen in combining with hemoglobin. Hence, individuals that have conditions that restrict oxygen intake can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels and patients with chronic hypoxemia (oxygen deficiency), such as that seen at high altitudes. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects of CO inhalation include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in lowered oxygen levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels; these include pre-term births and heart abnormalities.

Particulate Matter: A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life span and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentrations have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Sulfur Dioxide: The effects of sulfate exposure at levels above the standard include the aggravation of asthmatic symptoms, an increased risk of cardio-pulmonary disease and a decrease in respiratory function. A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics. In asthmatics, increased lung resistance, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Animal studies suggest that, despite being a respiratory irritant, SO_2 does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead: Fetuses, infants and children are more sensitive than others to the adverse effects of exposure to lead (Pb). Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands and lower intelligence. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures and death although it appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bones from early age environmental exposure and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers. Strict control of stationary sources and reformulation of gasoline in 1980 eliminated lead from stationary source exhaust stacks and vehicle tailpipes. For these reasons, lead concentrations in the atmosphere are negligible countywide and not analyzed further in this evaluation.

Toxic Air Contaminants (TACs): Toxic air contaminants are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. TACs are a broad class of substances known to have toxic properties. All airborne materials known to cause cancer are categorized as TACs. Note that benzene used as an example as an ROG is also defined as a TAC.

Any ROG that is carcinogenic is also defined as a TAC. Another form of TAC is diesel particulate matter (DPM). DPM is a fine particulate found within diesel exhaust. What makes DPM different from fine particulate matter is that the outer surface of the DPM particle is coated with a variety of toxic substances including arsenic, benzene and nickel. Long-term exposure to DPM has the potential to contribute to mutations in cells that can lead to cancer. In fact, long-term exposure to DPM poses the highest cancer risk of TAC evaluated by the Office of Environmental Health Hazard Assessment (OEHHA, 2012). CARB estimates that about 70% of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles (SCAQMD, 2008).

TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations and research and teaching facilities.

Because of the carcinogenic nature of TACs, exposure to TACs require additional evaluation in a health risk assessment (HRA) to determine the lifetime cancer risk associated with exposure to TACs. Lifetime cancer risk is defined as the increased chance of contracting cancer over a 70-year period as a result of exposure to a toxic substance or substances. It is the product of the estimated daily exposure of each suspected carcinogen by its respective cancer unit risk. The end result represents a worst-case estimate of cancer risk. Determining the lifetime cancer risk from exposure to TACs in an HRA requires project-specific information on the exact location, amount and type of TAC being emitted and the exact location, exposure rate and duration of exposure at receptors that are being exposed to the TAC. Because of the detailed project-specific information required to make such an assessment, it is impossible to provide an HRA for TACs in this programmatic level analysis of the General Plan update. However, HRAs are required for projects known to emit TACs prior to approval of such projects.

Odors: The science of odor as a health concern is still new. Odors are caused by the release of volatile or reactive organic gasses. Merely identifying the hundreds of ROGs that cause offensive odors poses a big challenge. Odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose and throat, which can reduce respiratory volume. Second, the ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

C. Existing Regional Air Quality Emissions

Measurements of ambient concentrations of criteria pollutants are used by the United States Environmental Protection Agency (EPA) and CARB to assess and classify the air quality of each air basin, county or, in some cases, a specific developed area. The classification is determined by comparing monitoring data with national and California air quality standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment." If the pollutant exceeds the standard, the area is in marginal, moderate, serious, severe or extreme "nonattainment," depending on the magnitude of the exceedance. If there is not enough data available to determine whether the standard is exceeded, the area is designated "unclassified." The following discussion, along with Table 4.6-A (Ambient Air Quality Reporting for Criteria Pollutants – SCAB (2007-2009) and Table 4.6-B (Ambient Air Quality Reporting for Criteria Pollutants – SSAB (2007-2009)), outlines the air quality data for the basins within Riverside County.

1. South Coast Air Basin

At the federal level, the SCAB is designated as an extreme nonattainment area for ozone and a serious nonattainment area for PM_{10}. The area is also a federal-level nonattainment area for $PM_{2.5}$. The federal status of the SCAB was recently upgraded from nonattainment to "serious maintenance area" for CO. The SCAB is in attainment for NO_2 and SO_2.

At the state level, the SCAB is also designated as an extreme nonattainment area for ozone and a nonattainment area for $PM_{2.5}$ and PM_{10}. It is in attainment for the California State CO standard and for SO_2 and NO_2, a subcategory of NO_X. In an effort to monitor the various concentrations of air pollutants throughout the basin, the SCAQMD has divided the region into 38 source receptor areas (SRAs), which are tracked by 32 monitoring stations. The portion of the County of Riverside located in the SCAB is within SRAs 22, 23, 24, 25, 26, 27, 28 and 29.

Table 4.6-A: Ambient Air Quality Reporting for Criteria Pollutants – SCAB (2007- 2009)

Air Pollutants Monitored	Year		
	2007	2008	2009
Ozone (O_3)			
Maximum 1-hour concentration measured	0.139 ppm	0.146 ppm	0.128 ppm
Number of days exceeding California State 0.09 ppm 1-hour standard	66	65	53
Maximum 8-hour concentration measured	0.116 ppm	0.118 ppm	0.108 ppm
Number of days exceeding national 0.075 ppm 8-hour standard	73	77	67
Number of days exceeding California State 0.07 ppm 8-hour standard	88	94	88
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.07 ppm	0.09 ppm	0.08 ppm
Number of days exceeding California State 0.18 ppm 1-hour standard	0	0	0
Annual average	0.0206 ppm	0.0258 ppm	0.0200 ppm
Number of days exceeding California State 0.03 ppm annual average	0	0	0
Number of days exceeding national 0.0534 ppm annual average	0	0	0
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	4 ppm	7 ppm	3 ppm
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	0
Number of days exceeding California State 20.0 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	2.9 ppm	2 ppm	2.4 ppm
Number of days exceeding national 9.0 ppm 8-hour standard	0	0	0
Number of days exceeding California State 9.0 ppm 8-hour standard	0	0	0
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration measured	142 µg/m^3	135 µg/m^3	108 µg/m^3
Number of days exceeding national 150 µg/m^3 24-hour standard	0	0	0
Number of days exceeding California State 50.0 µg/m^3 24-hour standard	41	49	33
Annual Average Concentration µg/m^3	68.5 µg/m^3	57.4 µg/m^3	53.4 µg/m^3
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration measured	75.7 µg/m^3	57.7 µg/m^3	49.3 µg/m^3
Number of days exceeding national 35 µg/m^3 24-hour standard	33	14	16
Sulfur Dioxide (SO_2)			
Maximum 24-hour concentration measured	0.002 ppm	0.003 ppm	0.003 ppm
Number of days exceeding California State 0.04 ppm 24-hour standard	0	0	0

Key: ppm = parts per million ug/m^3 = micrograms per cubic meter
Source: SCAQMD, Historical Data Website (www.aqmd.gov/smog/historical data.htm), accessed March 2011.

Table 4.6-B provides a summary of highest ambient air concentrations measured at the three monitoring stations between 2007 and 2009. As identified in the table, the California State 1-hour standard for ozone was exceeded 141 times during the three-year period. The national 8-hour ozone standard was exceeded 202 times, and the California State 8-hour standard was exceeded 271 times. The California State 24-hour standard for PM_{10} was

exceeded 85 times between 2007 and 2009. CO, NO_X, $PM_{2.5}$ and SO_2 standards were not exceeded during this three-year period.

Table 4.6-B: Ambient Air Quality Reporting for Criteria Pollutants – SSAB (2007-2009)

Air Pollutants Monitored	Results by Year		
	2007	2008	2009
Ozone (O_3)			
Maximum 1-hour concentration measured	0.129 ppm	0.149 ppm	0.133 ppm
Number of days exceeding California State 0.09 ppm 1-hour standard	29	57	55
Maximum 8-hour concentration measured	0.113 ppm	0.120 ppm	0.104 ppm
Number of days exceeding national 0.075 ppm 8-hour standard	58	74	70
Number of days exceeding California State 0.07 ppm 8-hour standard	83	95	93
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.08 ppm	0.08 ppm	0.06 ppm
Number of days exceeding California State 0.18 ppm 1-hour standard	0	0	0
Annual average	0.0147 ppm	0.0128 ppm	0.0109ppm
Number of days exceeding California State 0.03 ppm annual average	0	0	0
Number of days exceeding national 0.0534 ppm annual average	0	0	0
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	2 ppm	1 ppm	2 ppm
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	0
Number of days exceeding California State 20.0 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	1 ppm	0.6 ppm	0.7 ppm
Number of days exceeding national 9.0 ppm 8-hour standard	0	0	0
Number of days exceeding California State 9.0 ppm 8-hour standard	0	0	0
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration measured	146 µg/m^3	128 µg/m^3	140 µg/m^3
Number of days exceeding national 150 µg/m^3 24-hour standard	0	0	0
Number of days exceeding California State 50.0 µg/m^3 24-hour standard	51	25	9
Annual Average Concentration µg/m^3	53.5 µg/m^3	39.9 µg/m^3	32.5 µg/m^3
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration measured	32.5 µg/m^3	21.6 µg/m^3	27.6 µg/m^3
Number of days exceeding national 35 µg/m^3 24-hour standard	0	0	0
Sulfur Dioxide (SO_2)			
Maximum 24-hour concentration measured	---	---	---
Number of days exceeding California State 0.04 ppm 24-hour standard	---	---	---

Key: ppm = parts per million ug/m^3 = micrograms per cubic meter
Source: SCAQMD, Historical Data Website (www.aqmd.gov/smog/historical data.htm), accessed March 2011.

2. Salton Sea Air Basin

The SSAB is federally designated as a severe nonattainment area for ozone and as a serious nonattainment area for PM_{10}. The SSAB is in attainment for both CO and NO_2, but is unclassified for $PM_{2.5}$ and SO_2. At the state level, the SSAB is designated as a nonattainment area for both ozone and PM_{10}. It is in attainment for the California State CO, NO_2 and SO_2 standards, but unclassified for $PM_{2.5}$. Air quality in the Coachella Valley portion of the Salton Sea Air Basin is under the jurisdiction of the SCAQMD, therefore is monitored as part of its program. This portion of Riverside County is located within SRAs 29, 30 and 31, which are monitored by stations in Banning Pass, Palm Springs and Indio.

Table 4.6-B provides a summary of highest ambient air concentrations measured at the three monitoring stations between 2007 and 2009. As identified in the table, the California State 1-hour standard for ozone was exceeded 141 times during the three-year period. The national 8-hour ozone standard was exceeded 202 times, and the California State 8-hour standard was exceeded 271 times. The California State 24-hour standard for PM_{10} was

exceeded 85 times between 2007 and 2009. CO, NO_X, $PM_{2.5}$ and SO_2 standards were not exceeded during this three-year period.

3. Mojave Desert Air Basin

The MDAB is designated as severe nonattainment for ozone, nonattainment for PM_{10}, unclassified/attainment for $PM_{2.5}$, and attainment for CO, NO_2 and SO_2 at the federal level. At the state level, the MDAB is designated as a moderate nonattainment area for ozone and is also in nonattainment for PM_{10} and $PM_{2.5}$. It is in attainment for the California State CO, SO_2 (attainment/unclassified) and NO_2.

The MDAQMD monitors air quality within the MDAB, but does not have a monitoring station within the Riverside County portion of the basin. Due to the geographic difference between the Riverside County portion of the basin and the nearest monitoring station at Twenty-nine Palms, using the monitoring data from the Twenty-nine Palms stations would show markedly different air quality than would be anticipated in Riverside County. Therefore, no monitoring data is reported for this portion of Riverside County.

D. Toxic Air Contaminants

CARB has produced a series of estimated inhalation cancer risk maps based on modeled levels of outdoor composite toxic pollutant levels (CARB 2010). The 2010 estimated map indicates that the majority of Riverside County is exposed to a theoretical inhalation cancer risk of less than 250 persons per million. The estimated theoretical inhalation cancer risk shown on the CARB cancer risk maps are based upon the 2008 Multiple Air Toxics Exposure Study (MATES III) conducted by SCAQMD. The northwestern portion of Riverside County that includes portions of the Jurupa, Highgrove, Eastvale, Reche Canyon and Temescal Area Plans are exposed to inhalation cancer risks of greater than 250 persons per million. These risk maps depict theoretical inhalation cancer risk due to modeled outdoor toxic pollutant levels and do not account for cancer risk due to other types of exposure. The largest contributors to inhalation cancer risk are diesel engines.

E. Sensitive Receptors

Sensitive receptors are populations that are more susceptible to the effects of air pollution than is the population at large. While the ambient air quality standards are designed to protect public health and are generally regarded as conservative for healthy adults, there is greater concern for protecting adults who are ill or have long-term respiratory problems and young children whose lungs are not fully developed. According to CARB, sensitive receptors include children less than 14 years of age, the elderly over 65 years of age, athletes and people with cardiovascular and chronic respiratory diseases.

The SCAQMD and the MDAQMD identify the following as locations as tending to contain high concentration of sensitive receptors: long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers and athletic facilities. The County of Riverside, which has built-out urban as well as rural communities, contains many of each of these sensitive land uses.

F. General Plan Update and Air Quality

The location and densities of development affect the amount of air pollutants generated by communities. Land uses that are spread throughout a community increase the number and length of motor vehicle trips and associated air pollutant emissions. This is due to the relatively few opportunities to walk, ride bicycles and use

public transportation between such uses as homes and work or shopping. Compact communities often mix residential uses with or near commercial, business and employment uses, thereby reducing dependence on motor vehicles and reducing necessary vehicle trips. Smaller, higher density uses also produce less air emissions from natural gas on a per-unit basis.

4.6.3 Policies and Regulations Addressing Air Quality

A. State and Federal Regulations

Air quality within Riverside County is addressed through the efforts of various federal, state, regional and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education and a variety of programs. The agencies responsible for improving the air quality within the air basins, and their key regulatory efforts, are discussed below.

1. U.S. Environmental Protection Agency

The CAA of 1970 and the CAA Amendments of 1971 required the EPA to establish National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants. NAAQS are the levels of air quality considered safe, along with an adequate margin of safety to protect the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS must revise their SIPs to include extra control measures to reduce air pollution. California's SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans and rules and regulations of the various agencies with jurisdiction over the state's air basins. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

2. California Air Resources Board

The California Air Resources Board (CARB), a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards, CAAQS), compiles emission inventories, develops suggested control measures and provides oversight of local programs. CARB also establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints and barbecue lighter fluid) and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's SIP and works closely with the federal government and the local air districts.

3. Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments for Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy, community development and the environment.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan and Guide (RCPG) provide growth forecasts that are used in the development of air quality related land use and transportation control strategies by the SCAQMD. The RCPG is a framework for decision-making for local governments, assisting them in meeting federal and state mandates for growth management, mobility and environmental standards, while maintaining consistency with regional goals regarding growth and changes through the year 2015 and beyond. Policies within the RCPG address air quality, land use, transportation and economic relationships at all levels of government. SCAG is also charged with developing and implementing Senate Bill 375 (SB 375) with participation from Riverside County and the other local cities and counties of SCAG. See Section 4.7 for further information on SB 375.

B. Regional Air Quality Management

The three air basins that cover parts of Riverside County are managed by the following two air quality management districts pursuant to State of California regulations.

1. South Coast Air Quality Management District

The SCAQMD is the agency responsible for comprehensive air pollution control in the South Coast Air Basin, as well as the Coachella Valley portion of the Salton Sea Air Basin. Towards that end, the SCAQMD works directly with SCAG, county transportation commissions and local governments and also cooperates actively with federal and state agencies. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emission sources and enforces such reductions though educational programs or fines when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile and natural sources. To do so, it uses a series of Air Quality Management Plans (AQMPs). The most recent of which, AQMP 2007, was adopted by the Governing Board of SCAQMD on June 1, 2007. The 2007 AQMP was prepared to comply with the federal and state Clean Air Acts and to accommodate growth, reduce high pollutant levels, meet federal and state ambient air quality standards and to minimize the fiscal impact of pollution control measures on the local economy. It identifies the control measures to be implemented to reduce major sources of pollutants. These planning efforts have substantially decreased the population's exposure to unhealthful levels of pollutants, even while substantial population growth has occurred within the SCAQMD's jurisdictional boundaries.

The SCAQMD is principally responsible for comprehensive air pollution control in the South Coast Air Basin and the Coachella Valley portion of the Salton Sea Air Basin and recommends that projects should be evaluated in terms of air pollution control thresholds established by the SCAQMD and published in the CEQA Air Quality Handbook. These thresholds were developed by the SCAQMD to provide quantifiable significance levels for individual with projects. Future development proposals within the SCAB would be reviewed against the following SCAQMD thresholds. Future development within the Coachella Valley portion of the SSAB would be assessed similarly against the SSAB thresholds, which the SCAQMD has jurisdiction over. For the majority of the

Coachella Valley, the SCAQMD thresholds apply; however, for those thresholds that are different, they are distinguished within parentheses.

Construction Emissions Thresholds: The SCAQMD currently recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered potentially significant.

- 550 pounds per day of carbon monoxide (CO)
- 75 pounds per day of reactive organic gases (ROG)
- 100 pounds per day of nitrogen oxides (NO_X)
- 150 pounds per day of sulfur oxides (SO_X)
- 150 pounds per day of respirable particulate matter (PM_{10})
- 55 pounds per day of fine particulate matter ($PM_{2.5}$)

Operational Emissions Thresholds: The SCAQMD currently recommends that projects with operational emissions that exceed any of the following emissions thresholds should be considered potentially significant.

- 550 pounds per day of CO
- 55 pounds per day of ROG in the SCAB (75 pounds per day in the SSAB)
- 55 pounds per day of NO_x in the SCAB (100 pounds per day in the SSAB)
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$.

Localized Significance Thresholds: Localized Significance Thresholds (LSTs) were developed in response to the SCAQMD Governing Board's Environmental Justice Enhancement Initiative (I-4). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LSTs, which are voluntary, only apply to CO, NO_2, PM_{10} and $PM_{2.5}$ emissions during construction and operation at the discretion of the lead agency. Screening-level analysis of LSTs is only recommended for construction activities at project sites that are 5 acres or less and within the SCAQMD jurisdiction. The SCAQMD recommends that operational activities and construction for any project over 5 acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. Some of the individual projects accommodated in GPA No. 960 would cover areas greater than 5 acres. For future development proposals of more than 5 acres under SCAQMD jurisdiction, dispersion modeling would be required for CO_2, NO_X, PM_{10} and $PM_{2.5}$ emissions. NO_X to NO_2 conversion would be used to determine the maximum NO_2 concentrations at the nearest sensitive receptors. The following LSTs apply to new development:

- 20 ppm for 1-hour CO concentrations
- 9 ppm for 8-hour CO concentrations
- 0.18 ppm for 1-hour NO_2 concentrations
- 0.03 ppm for annual NO_2 concentrations

As the Basin is in nonattainment for PM_{10} and $PM_{2.5}$, the SCAQMD has established the following LSTs for PM_{10} and $PM_{2.5}$ concentrations during construction:

- 10.4 μg/m^3 for 24-hour PM_{10} concentrations
- 2.5 μg/m^3 for 24-hour $PM_{2.5}$ concentrations

In order to assess cumulative impacts, the SCAQMD recommends that projects be evaluated to determine whether they would be consistent with 2007 AQMP performance standards and project-specific emissions thresholds. In the case of the proposed project, air pollutant emissions would be considered to be cumulatively considerable if the new sources of emissions exceeded SCAQMD emissions thresholds.

2. Mojave Desert Air Quality Management District

The Mojave Desert Air Quality Management District (MDAQMD) has jurisdiction over the desert portions of San Bernardino County and the far eastern portion of Riverside County. MDAQMD jurisdiction includes the incorporated communities of Blythe in Riverside County, plus the cities of Adelanto, Apple Valley, Barstow, Hesperia, Needles, Twenty-nine Palms, Victorville and Yucca Valley in San Bernardino County.

Similar to the SCAQMD, the MDAQMD is responsible for reducing emissions within its jurisdictional boundaries. To that end, the MDAQMD has adopted the federal attainment plans for ozone and PM_{10}. The most recent such plan approved by the EPA is the Attainment Demonstration Plan adopted in 1994. The most recently adopted state plan is the 1996 Triennial Revision to the 1991 Air Quality Attainment Plan (AQAP). A number of plans are in place for the reduction of air pollutants in the MDAB, however only two are applicable to the Riverside County portion of the MDAQMD. The first is the 1996 MDAQMD Triennial Revision to the 1991 Air Quality Attainment Plan (AQAP) which indicates that the main source of O_3 in the MDAB is O_3 transported by the wind from the South Coast Air Basin to the MDAB.

The second plan is the 2004 Ozone Attainment Plan. The MDAQMD has experienced ambient ozone concentrations in excess of the one-hour ozone NAAQS and the ozone CAAQS. Thus, the plan was developed to demonstrate how the MDAQMD would meet required primary federal ozone planning milestones, including attainment of the ozone NAAQS by the end of 2007. It also outlines the progress the MDAQMD is making towards meeting all required state ozone planning milestones, including attainment of the ozone CAAQS. In addition, it discusses the 8-hour ozone NAAQS, preparatory to an expected non-attainment designation for the new NAAQS.

The MDAQMD is principally responsible for comprehensive air pollution control in the Mojave Desert Air Basin and recommends that projects should be evaluated in terms of the MDAQMD air pollution control thresholds published in the MDAQMD's California Environmental Quality Act and Federal Conformity Guidelines. These thresholds were developed by the MDAQMD to provide quantifiable significance levels for comparison with

projects and would apply to all future development projects in the MDAB. Under the MDAQMD, a project is considered significant if it does any of the following:

a. Generates total emissions (direct and indirect) in excess of:

- 548 lbs/day or 100 tons/year CO
- 137 lbs/day or 25 tons/year NO_X
- 137 lbs/day or 25 tons/year ROG
- 137 lbs/day or 25 tons/year SO_X
- 82 lbs/day or 15 tons/year PM_{10}
- 82 lbs/day or 15 tons/year $PM_{2.5}$

b. Generates a violation of any ambient air quality standard when added to the local background.

c. Does not conform with the applicable attainment or maintenance plan(s).

d. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index greater than or equal to 1. This threshold is applicable to projects that are within the following specified distances from existing or zoned sensitive receptor lands:

- Any industrial project within 1,000 feet.
- A distribution center (40 or more trucks per day) within 1,000 feet.
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet.
- A dry cleaner using perchloroethylene within 500 feet.
- A gasoline dispensing facility within 300 feet.

C. Riverside County Regulations

Within Riverside County, local pollution controls are exerted in a variety of ways. The following County of Riverside ordinances address air quality.

Ordinance No. 706 - Mobile Source Air Pollution Reduction Programs (Funding): This ordinance supports the SCAQMD's imposition of the vehicle registration fee and brings the County of Riverside into compliance with requirements of the California Health and Safety Code in order to receive fee revenues for the purpose of implementing programs to reduce air pollution from motor vehicles.

Ordinance No. 726 - Transportation Demand Management for New Development: This ordinance sets the following goals related to efficiently utilizing the existing and planned transportation system and reducing vehicle emissions:

- Reduce vehicle trips generated by new development by 12% commencing in 1994, by 20% commencing in 2000 and by 30% commencing in 2006.
- Reduce overall projected 1994 vehicle trips emanating from Riverside County by 7%.
- Relieve traffic congestion in an effort to improve air quality.
- Produce an efficient transportation demand management system which utilizes the existing system to its best potential.
- Maintain or achieve minimum Level of Service of "C" for all new development projects.

The ordinance further requires that proposed projects prepare a traffic impact analysis, which must include a Transportation Demand Management Plan describing proposed trip levels and outlining proposed transportation demand management measures for new development projects to achieve the trip level proposed.

Ordinance No. 748 - Mitigation of Traffic Congestion Through Signalization: This ordinance sets policies, regulations and fees related to the funding and installation of traffic signals to mitigate the cumulative environmental impacts (traffic congestion) generated by new development. This ordinance aims to reduce idling time of vehicles, which in turn reduces fuel consumption of vehicles and reduces pollutant emissions.

Ordinance No. 782 - Golf Cart Transportation Plan: This ordinance establishes a golf cart transportation program within Riverside County. The golf cart transportation plan, authorized by the Streets and Highways Code of the State of California, extends the use of golf carts for transportation beyond access to golf courses. Utilizing golf carts reduces automobile trips and vehicular emissions because golf carts are typically electric-powered and thus do not emit criteria pollutants through the direct combustion of fossil fuel.

Ordinance No. 824 - Western Riverside County Traffic Uniform Mitigation Fee (TUMF) Program: This ordinance authorizes Riverside County's participation in the Western Riverside Council of Government (WRCOG) Transportation Uniform Mitigation Fee (TUMF) Program. The purpose of the TUMF Program is to fund certain improvements to the regional system of highways and arterials of western Riverside County. WRCOG studies have shown that future development within western Riverside County and its cities will result in traffic volumes exceeding the capacity of the regional system as it presently exists. The TUMF program works to reduce traffic congestion by funding improvements to the regional system. Increased traffic flow and decreased idling time that result will decrease vehicle fuel consumption and the emissions associated with its combustion.

Ordinance No. 659 - Development Impact Fee Program for Residential Development: This ordinance establishes a development impact fee (DIF) that is paid for each new residential unit, development project or portion constructed. The fees provide revenue to acquire or construct public facilities, purchase regional parkland and preserve habitat and open space. Constructing public facilities and preserving open space is necessary to promote public health, safety, comfort and welfare. Specifically, air pollutant emissions are mitigated by preserving open space and locating public facilities in close proximity to new developments. This reduces vehicle travel required to reach recreational areas and also maintains existing trees and provides for additional trees, both of which sequester some air pollutants (e.g., carbon dioxide).

D. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies help ensure potential environmental effects are avoided, reduced or minimized through their

application on a case-by-case basis. The County of Riverside has existing programs in place to impose applicable policies once a development proposal triggers the need. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion in project Conditions of Approval. The following existing General Plan polices address air quality issues.

1. Land Use (LU) Element

Policy LU 2.1: Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Map (Figure LU-1) and the Area Plan Land Use Maps, in accordance with the following:

a. Provide a land use mix at the countywide and area plan levels based on projected need and supported by evaluation of impacts to the environment, economy, infrastructure and services.

b. Accommodate a range of community types and character, from agricultural and rural enclaves to urban and suburban communities.

c. Provide for a broad range of land uses, intensities and densities, including a range of residential, commercial, business, industry, open space, recreation and public facilities uses.

d. Concentrate growth near community centers that provide a mixture of commercial, employment, entertainment, recreation, civic and cultural uses to the greatest extent possible.

e. Concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character of Riverside County to the greatest extent possible.

f. Site development to capitalize upon multi-modal transportation opportunities and promote compatible land use arrangements that reduce reliance on the automobile.

g. Prevent inappropriate development in areas that are environmentally sensitive or subject to severe natural hazards.

Policy LU *8.12* (Previously LU 7.12): Improve the relationship and ratio between jobs and housing so that residents have an opportunity to live and work within the county.

Policy LU *11.1* (Previously LU 10.1): Provide sufficient commercial and industrial development opportunities in order to increase local employment levels and thereby minimize long-distance commuting.

Policy LU *11.3* (Previously LU 10.3): Accommodate the development of community centers and concentrations of development to reduce reliance on the automobile and help improve air quality.

Policy LU *11.4* (Previously LU 10.4): Provide options to the automobile in communities, such as transit, bicycle and pedestrian trails, to help improve air quality.

Policy LU *13.1* (Previously LU 12.1): Provide land use arrangements that reduce reliance on the automobile and improve opportunities for pedestrian, bicycle and transit use in order to minimize congestion and air pollution.

Policy LU *13.2* (Previously LU 12.2): Locate employment and service uses in areas that are easily accessible to existing or planned transportation facilities.

Policy LU *13.3* (Previously LU 12.3): Locate transit stations in community centers and at places of public, employment, entertainment, recreation and residential concentrations.

Policy LU *13.4* (Previously LU 12.4): Incorporate safe and direct multi-modal linkages in the design and development of projects, as appropriate.

2. Circulation (C) Element

Policy C 1.2: Support development of a variety of transportation options for major employment and activity centers including direct access to transit routes, primary arterial highways, bikeways, park-and-ride facilities and pedestrian facilities.

Policy C 1.7: Encourage and support the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle lanes and paths and mixed-use community

Policy C 4.1: Provide facilities for the safe movement of pedestrians within developments, as specified in the County ordinance regulating the division of land of the County of Riverside.

Policy C 11.2: Incorporate the potential for public transit service in the design of developments that are identified as major trip attractions (i.e., community centers, tourist and employment centers), as indicated in ordinances regulating the division of land of the County of Riverside.

Policy C 11.4: Offer incentives to new development to encourage it to locate in a transit-oriented area such as a community center or along a designated transit corridor near a station.

Policy C 11.5: Accommodate transit through higher densities, innovative design and right-of-way dedication.

Policy C *11.6* (Previously C 11.7): Promote development of transit centers and park-n-rides for use by all transit operators, including development of multi-modal facilities.

Policy C 12.1: Support the development and implementation of the Transit Oasis concept in conjunction with RCTC, local transit operators and cities.

Policy C 12.3: Establish a system of transit priority treatments or dedicated travel lanes to facilitate movement by the Transit Oasis vehicles within community centers and other major nodes of activity, where feasible.

Policy C 13.1: Support continued development and implementation of the Riverside County Transportation Commission Rail Program including new rail lines and stations, the proposed California High Speed Rail System with at least two stations in Riverside County, the Coachella Valley Commuter Rail Service and the proposed Intercity Rail Corridor between Calexico and Los Angeles.

Policy C 13.2: Support continued improvements to AMTRAK and MetroLink rail passenger service within Riverside County and throughout the Southern California region.

Policy C *20.14* (Previously C 20.12): Encourage the use of alternative non-motorized transportation and the use of non-polluting vehicles.

Policy C *21.7* (Previously C 21.9): Encourage development of bus-only lanes and signal synchronization so that transit can help to alleviate congestion.

3. Multipurpose Open Space (OS) Element

Policy OS 12.1: Allow for the development of non-electrical, direct heat uses of geothermal heat and fluids for space, agricultural and industrial heating in situations and localities where naturally occurring hydrothermal features will not be degraded.

Policy OS 16.2: Specify energy efficient materials and systems, including shade design technologies, for County buildings.

Policy OS 16.3: Implement public transportation systems that utilize alternative fuels when possible, as well as associated urban design measures that support alternatives to private automobile use.

Policy OS 16.4: Undertake proper maintenance of County physical facilities to ensure that optimum energy conservation is achieved.

Policy OS 16.5: Utilize federal, State and utility company programs that encourage energy conservation.

Policy OS 16.6: Assist public buildings and institutions in converting asphalt to greenspace to address the heat island effect.

Policy OS 16.8: Promote coordination of new public facilities with mass transit service and other alternative transportation services, including bicycles and design structures to enhance mass transit, bicycle and pedestrian use.

4. Air Quality (AQ) Element

Policy AQ 1.1: Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

Policy AQ 1.2: Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts and those subregional entities identified in the Regional Growth Management Plan.

Policy AQ 1.3: Participate in development and update of those regional air quality management plans required under federal and State law and meet all standards established for clean air in these plans.

Policy AQ 1.4: Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

Policy AQ 1.5: Establish and implement air quality, land use and circulation measures that improve not only the county's environment but the entire region.

Policy AQ 1.6: Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element.

Policy AQ 1.7: Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels.

Policy AQ 1.8: Support the introduction of federal, State or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented.

Policy AQ 1.9: Encourage, publicly recognize and reward innovative approaches that improve air quality.

Policy AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible.

Policy AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Policy AQ 2.1: The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

Policy AQ 2.2: Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

Policy AQ 2.3: Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Policy AQ 2.4 Consider creating a program to plant urban trees on an Area Plan basis that removes pollutants from the air, provides shade and decreases the negative impacts of heat on the air.

Policy AQ 3.1 Allow the market place, as much as possible, to determine the most economical approach to relieve congestion and cut emissions.

Policy AQ 3.2: Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.

Policy AQ 3.3: Encourage large employers and commercial/industrial complexes to create Transportation Management Associations.

Policy AQ 3.4: Encourage employee rideshares and transit incentives for employers with more than 25 employees at a single location.

Policy AQ 4.5: Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;

- Operating procedures;
- Preventive maintenance;
- Operator training; and
- Emergency response planning.

Policy AQ 4.6: Require stationary air pollution sources to comply with applicable air district rules and control measures.

Policy AQ 4.8: Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire county.

Policy AQ 4.9: Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

Policy AQ 4.10: Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the county of first, second and third stage smog alerts and when wind speeds exceed 25 miles per hour. During these instances, all grading operations should be suspended.

Policy AQ 5.1: Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

Policy AQ 5.2: Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments.

Policy AQ 5.3: Update, when necessary, the County's Policy Manual for Energy Conservation to reflect revisions to the County Energy Conservation Program.

Policy AQ 5.4: Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and wind-break trees to reduce fuel consumption for heating and cooling.

Policy AQ 6.1 Assist small business by developing education and job training programs, especially in job-poor areas.

Policy AQ 6.2 Collaborate with local colleges and universities to develop appropriate education programs to assist residents in obtaining job skills to meet market demands.

Policy AQ 7.1: Provide incentives to encourage new firms to locate within the county and existing firms to expand operations.

Policy AQ 7.2: Work with the SCAQMD and the MDAQMD to develop a means to encourage the location of new commercial and industrial development in those localities where jobs are most needed.

Policy AQ 7.3 Create a loan program to encourage small businesses to locate within the County.

Policy AQ 7.4: Offer incentives to businesses to control emissions and implement the AQMP.

Policy AQ 7.5: Reduce regulations on small businesses wherever possible and thereby encourage small business development and job creation. The County shall set performance standards as well as design standards, thus giving small business owners as many options as possible to comply with County regulations.

Policy AQ 7.6: Adopt policies freeing small businesses from unnecessary and duplicative paperwork.

Policy AQ 7.7: Assemble information collected from County agencies and departments concerning the business community to develop programs that better serve their needs.

Policy AQ 8.1: Locate new public facilities in job-poor areas of the county.

Policy AQ 8.2: Emphasize job creation and reductions in vehicle miles traveled in job poor areas to improve air quality over other less efficient methods.

Policy AQ 8.3: Time and locate public facilities and services so that they further enhance job creation opportunities.

Policy AQ 8.4: Support new mixed-use land use patterns and community centers which encourage community self-sufficiency and containment and discourage automobile dependency.

Policy AQ 8.5: Develop community centers in conformance with policies contained in the Land Use Element.

Policy AQ 8.6: Encourage employment centers in close proximity to residential uses.

Policy AQ 8.7: Implement zoning code provisions which encourage community centers, telecommuting and home-based businesses.

Policy AQ 8.8: Promote land use patterns which reduce the number and length of motor vehicle trips.

Policy AQ 8.9: Promote land use patterns that promote alternative modes of travel.

Policy AQ 9.1: Cooperate with local, regional, State and federal jurisdictions to reduce vehicle miles traveled and motor vehicle emissions through job creation.

Policy AQ 9.2: Attain performance goals and/or VMT (vehicle miles traveled) reductions which are consistent with SCAG's Growth Management Plan.

Policy AQ 10.1: Encourage trip reduction plans to promote alternative work schedules, ridesharing, tele-commuting and work-at-home programs, employee education and preferential parking.

Policy AQ 10.2: Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions when possible to eliminate vehicle trips which would otherwise be made.

Policy AQ 10.3: Assist merchants in encouraging their customers to shift from single-occupancy vehicles to transit, carpools, bicycles or foot.

Policy AQ 10.4: Continue to enforce the County's Transportation Demand Management Ordinance and update as necessary.

Policy AQ 11.1: Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close to practicable to the event site, and the operator should supply shuttle services.

Policy AQ 11.2 Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates to peripheral parking with tickets sold for non-ridesharing patrons.

Policy AQ 11.3: Encourage special event center operators to advertise and offer discounted transit passes with event tickets.

Policy AQ 11.4: Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with two or more persons per vehicle, for on-site parking facilities.

Policy AQ 12.1: Manage traffic flow through signal synchronization, while coordinating with and permitting the free flow of mass transit vehicles, when possible.

Policy AQ 12.2: Synchronize signals throughout the County with those of its cities, adjoining counties and the California Department of Transportation.

Policy AQ 12.3: Construct and improve traffic signals with channelization and Automated Traffic Surveillance and Control systems at appropriate intersections.

Policy AQ 12.4: Eliminate traffic hazards and delays through highway maintenance, rapid emergency response, debris removal and elimination of at-grade railroad crossings, when possible.

Policy AQ 12.5 Encourage business owners to schedule deliveries at off-peak traffic periods.

Policy AQ 13.1: Manage the County of Riverside transportation fleet fueling standards to achieve an appropriate alternate fuel fleet mix.

Policy AQ 13.2: Cooperate with local, regional, State and federal jurisdictions to better manage transportation facilities and fleets.

Policy AQ 13.3: Encourage the construction of high-occupancy-vehicle (HOV) lanes whenever possible to relieve congestion, safety hazards and air pollution as described in the AQMP.

Policy AQ 14.1: Emphasize the use of high occupancy vehicle lanes, light rail and bus routes and pedestrian and bicycle facilities when using transportation facility development to improve mobility and air quality.

Policy AQ 14.2: When developing new capital facility improvement plans, also consider measures such as Transportation Demand Management, Transportation Systems Management, or job/housing balance strategies.

Policy AQ 14.3: Monitor traffic and congestion to determine when and where the county needs new transportation facilities to achieve increased mobility efficiency.

Policy AQ 14.4: Preserve transportation corridors with high demand potential or regional significance for future expansion to meet project demand.

Policy AQ 15.1: Identify and monitor sources, enforce existing regulations and promote stronger controls to reduce particulate matter.

Policy AQ 16.1: Cooperate with local, regional, State and federal jurisdictions to better control particulate matter.

Policy AQ 16.2 Encourage stricter state and federal legislation on bias belted tires, smoking vehicles that spill debris on streets and highways, to better control particulate matter.

Policy AQ 16.3: Collaborate with the SCAQMD and the MDAQMD to require and/or encourage the adoption of regulations or incentives to limit the amount of time trucks may idle.

Policy AQ 16.4: Collaborate with the EPA, SCAQMD, MDAQMD and warehouse owners and operators to create regulations and programs to reduce the amount of diesel fumes released due to warehousing operations.

Policy AQ 17.1: Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way and off-road vehicles to the extent possible.

Policy AQ 17.2 Enforce regulations against illegal fires.

Policy AQ 17.3: Identify and create a control plan for areas within the county prone to wind erosion of soil.

Policy AQ 17.4: Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates.

Policy AQ 17.5: Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable.

Policy AQ 17.6: Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

Policy AQ 17.7: Separate trucks from other vehicles in industrial areas of the county with the creation of truck-only access lanes to promote the free flow of traffic.

Policy AQ 17.8: Adopt regulations and programs necessary to meet State and federal guidelines for diesel emissions.

Policy AQ 17.9: Encourage the installation and use of electric service units at truck stops and distribution centers for heating and cooling truck cabs and particularly for powering refrigeration trucks in lieu of idling of engines for power.

Policy AQ 17.10: Promote and encourage the use of natural gas and electric vehicles in distribution centers.

Policy AQ 17.11: Create and implement street-sweeping plans, as appropriate, in areas of the county disproportionately affected by particulate matter pollution.

E. Proposed New or Revised Riverside County General Plan Policies

The incorporation of these policies would reduce vehicle miles traveled, improve energy efficiency, reduce energy consumption and increase renewable energy generation. While some of these proposed policies were introduced

to specifically address greenhouse gas emissions, they would also provide a reduction in criteria pollutant emissions.

1. Land Use (LU) Element

Policy LU 1.5: The County shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality, ~~and~~ watershed and habitat management**,** ~~child care~~ with cities, local and regional agencies, stakeholders, Indian nations and surrounding jurisdictions.

Policy LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

a. Compliance with the design standards of the appropriate area plan land use category.

b. Require that structures be constructed in accordance with the requirements of the County's zoning, building and other pertinent codes and regulations.

c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.

d. Require that new development utilize drought-tolerant landscaping and incorporate adequate drought-conscious irrigation systems.

e. Pursue energy efficiency through street configuration, building orientation and landscaping to capitalize on shading and facilitate solar energy, as provided for in Title 24*, Part 6 and/or Part 11,* of the California ~~Administrative~~ Code *of Regulations (CCR)*.

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought-tolerant landscaping and water recycling, as appropriate.

g. Encourage innovative and creative design concepts.

h. Encourage the provision of public art *that enhances the community's identity, which may include elements of historical significance and creative use of children's art.*

i. Include consistent and well-designed signage that is integrated with the building's architectural character.

j. Provide safe and convenient vehicular access and reciprocal access between adjacent commercial uses.

k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighborhoods.

l. Mitigate noise, odor, lighting and other impacts on surrounding properties.

m. Provide and maintain landscaping in open spaces and parking lots.

n. Include extensive landscaping.

o. Preserve natural features, such as unique natural terrain, *arroyos, canyons and other* drainage ways and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.

p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space and other pertinent elements.

q. Design parking lots and structures to be functionally and visually integrated and connected.

r. Site buildings access points along sidewalks, pedestrian areas and bicycle routes and include amenities that encourage pedestrian activity.

s. Establish safe and frequent pedestrian crossings.

t. Create a human-scale ground floor environment that includes public open areas that separate pedestrian space from auto traffic or where mixed, it does so with special regard to pedestrian safety.

u. Recognize open space, including hillsides, arroyos, riparian areas and other natural features, as amenities that add community identity, beauty, recreational opportunities and monetary value to adjacent developed areas.

v. Manage wild land fire hazards in the design of development proposals located adjacent to natural open space.

2. Circulation (C) Element

Policy C *4.8* (Previously C 4.9): Coordinate with all transit operators to ensure that *ADA compliant* pedestrian facilities are provided along and/or near all transit routes, whenever feasible. New land developments may be required to provide pedestrian facilities due to existing or future planned transit routes even if demand for pedestrian facility ~~is~~*may* not *be* otherwise warranted.

Policy C 9.2: Support *the expansion and enhancement of Metrolink service and* transit operators' programs to ~~foster~~ *increase* transit usage *to implement bus rapid transit (BRT) services, and to make other express and local bus service improvements*.

Policy C 12.2: Support the development of high-speed transit linkages, *bus rapid transit (BRT)* or express routes, between community centers and other major nodes of activity.

Policy C 13.3: Support implementation of the San Jacinto Branch Line to serve ~~planned industrial development~~ *commuter uses*.

Policy C 17.3: Ensure that the bikeway system incorporates the following:

a. Interconnection *throughout and between* ~~of~~ cities and unincorporated communities.

b. ~~Provision of~~ *Appropriate* lanes to specific destinations such as state or county parks.~~;~~

c. ~~Provision for~~ *Appropriate opportunities for recreational bicycle riding and* bicycle touring.~~; and~~

d. ~~Encouragement of~~ *Opportunities for* bicycle commuting~~.~~ *and golf cart commuting within a community, as appropriate for the terrain, traffic levels and proximity to surrounding destinations.*

e. Bikeways connecting to all urban transit centers and systems (bus stops and Metrolink stations) in the vicinity.

f. Bicycle parking at transit stops and park-and-ride lots.

Policy C 17.4: Ensure that alternative modes of motorized transportation, such as buses, trains, *taxi cabs,* etc., plan and provide for transportation of recreational and commuting bicyclists and bicycles on public transportation systems. *Coordinate with all transit operators to ensure that bicycle facilities are provided along and/or near all transit routes, whenever feasible. New land developments shall be required to provide bicycle facilities due to existing or future planned transit routes.*

Policy C 21.1: Encourage the installation and use of HOV lanes. Such lanes should be continuous, linking major population centers with employment centers. If HOV lanes are used, consider making them available for mixed-flow traffic during non-peak periods when warranted and feasible. *Consider and implement, where feasible and needed, direct HOV connections between freeways and arterial to freeway exclusive HOV ingress/egress ramps.*

3. Multipurpose Open Space (OS) Element

Policy OS 16.1: Continue to implement Title 24 of the ~~State Building Code~~ *California Code of Regulations (the "California Building Standards Code"), particularly Part 6 (the California Energy Code) and Part 11 (the California Green Building Standards Code), as amended and adopted pursuant to County ordinance.* Establish mechanisms and incentives to encourage architects and builders to exceed the energy efficiency standards ~~of~~ *within CCR* Title 24.

4. Air Quality (AQ) Element

Policy AQ 4.1: *Require* ~~Encourage~~ the use of *all feasible* building materials/methods which reduce emissions.

Policy AQ 4.2: *Require* ~~Encourage~~ the use of *all feasible* efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

Policy AQ 4.3: *Require* ~~Encourage~~ centrally heated facilities to utilize automated time clocks or occupant sensors to control heating *where feasible.*

Policy AQ 4.4: Require residential building construction to comply with energy use guidelines detailed in *Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of* Title 24 of the California ~~Administrative~~ Code *of Regulations.*

Policy AQ 4.7: To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, ~~SOCAB~~ *SCAB*, the Environmental Protection Agency and the California Air Resources Board.

NEW **Policy AQ 18.1:** *Baseline emissions inventory and forecast. Riverside County CAP has included baseline emissions inventory with data from the County's CO2e emissions for specific sectors and specific years. The carbon inventory greatly aids the process of determining the type, scope and number of GHG reduction policies needed. It also facilitates the tracking of policy implementation and effectiveness. The carbon inventory for the county consists of two distinct components; one inventory is for the county as a whole, as defined by its geographical borders and the other inventory is for the emissions resulting from the County's municipal operations.*

NEW **Policy AQ 18.2:** *Adopt GHG emissions reduction targets. Pursuant to the results of the Carbon Inventory and Greenhouse Gas Analysis for Riverside County, future development proposed as a discretionary project pursuant to the General Plan*

shall achieve a greenhouse gas emissions reduction of 25% compared to Business As Usual (BAU) project in order to be found consistent with the County's Climate Action Plan (CAP).

NEW **Policy AQ 18.3:** *Develop a Climate Action Plan for reducing GHG emissions. The Riverside County CAP has been developed to formalize the measures necessary to achieve county GHG emissions reduction targets. The CAP includes both the policies necessary to meet stated targets and objectives. These targets, objectives and Implementation Measures may be refined, superseded or supplemented as warranted in the future.*

NEW **Policy AQ 18.4:** *Implement policies and measures to achieve reduction targets. The County shall implement the greenhouse gas reduction policies and measures established under the County Climate Action Plan for all new discretionary development proposals.*

NEW **Policy AQ 18.5:** *Monitor and verify results. The County shall monitor and verify the progress and results of the CAP periodically. When necessary, the CAP's "feedback" provisions shall be used to ensure that any changes needed to stay "on target" with stated goals are accomplished.*

NEW **Policy AQ 19.1:** *Continue to coordinate with CARB, SCAQMD and the State Attorney General's office to ensure that the milestones and reduction strategies presented in the General Plan and the CAP adequately address the county's greenhouse gas emissions.*

NEW **Policy AQ 19.2:** *Utilize the County's CAP as the guiding document for determining the County's greenhouse gas reduction thresholds and implementation programs. Implementation of the CAP and its monitoring program shall include the ability to expand upon or, where appropriate, update or replace the Implementation Measures established herein so that the implementation of the CAP accomplishes the greenhouse gas reduction targets.*

NEW **Policy AQ 19.3:** *Require new development projects subject to County discretionary approval to achieve the greenhouse gas reduction targets established in the CAP either through:*

a. Garnishing 100 points through the Implementation Measures found the County's CAP; or

b. Requiring quantification of project-specific GHG emissions and reduction of GHG emissions to, at minimum, the applicable GHG reduction threshold established in the CAP.

NEW **Policy AQ 19.4:** *All discretionary project proposals shall analyze their project-specific GHG reduction targets in comparison to the "business as usual" (BAU) scenario for the development's operational life, and the "operational life" of a new development shall be defined as a 30-year span. Other methods for calculating BAU and showing GHG emissions reductions may be used provided such methods are both scientifically defensible and show actual emission reduction measures incorporated into project design, mitigation or alternative selection. Alternatively, a project may use the CAP Screening Tables to show the attainment of the applicable number of points needed to ensure adequate GHG reductions and CAP compliance.*

NEW **Policy AQ 20.1:** *Reduce VMT by requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes. Improve connectivity of the multi-modal facilities by providing linkages between various uses in the developments.*

NEW **Policy AQ 20.2:** *Reduce VMT by facilitating an increase in transit options. In particular, coordinate with adjacent municipalities, transit providers and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation.*

NEW **Policy AQ 20.3:** *Reduce VMT and GHG emissions by improving circulation network efficiency.*

NEW **Policy AQ 20.4:** *Reduce VMT and traffic through programs that increase carpooling and public transit use, decrease trips and commute times, and increase use of alternative-fuel vehicles.*

NEW **Policy AQ 20.5:** *Reduce emissions from standard gasoline vehicles, through VMT, by requiring all new residential units to install circuits and provide capacity for electric vehicle charging stations.*

NEW **Policy AQ 20.6:** *Reduce emissions from commercial vehicles through VMT, by requiring all new commercial buildings, in excess of 162,000 square feet, to install circuits and provide capacity for electric vehicle charging stations.*

NEW **Policy AQ 20.7:** *Reduce VMT through increased densities in urban centers and encouraging emphasis on mixed use to provide residential, commercial and employment opportunities in closer proximity to each other. Such measures will also support achieving the appropriate jobs-housing balance within the communities.*

NEW **Policy AQ 20.8:** *Reduce VMT by increasing options for non-vehicular access through urban design principles that promotes higher residential densities with easily accessible parks and recreation opportunities nearby.*

NEW **Policy AQ 20.9:** *Reduce urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations, and to maximize protection of open space.*

NEW **Policy AQ 20.10:** *Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading as well as passive solar design.*

NEW **Policy AQ 20.11:** *Increase energy efficiency of the new developments through efficient use of utilities (water, electricity, natural gas) and infrastructure design. Also, increase energy efficiency through use of energy-efficient mechanical systems and equipment.*

NEW **Policy AQ 20.12:** *Support programs to assist the energy-efficient retrofitting of older affordable housing units, particularly residential units built prior to 1978 when Title 24 energy requirements went into effect.*

NEW **Policy AQ 20.13:** *Reduce water use and wastewater generation in both new and existing housing, commercial and industrial uses. Encourage increased efficiency of water use for agricultural activities.*

NEW **Policy AQ 20.14:** *Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance 859 and increase use of non-potable water.*

NEW **Policy AQ 20.15:** *Decrease energy costs associated with treatment of urban runoff water through greater use of bioswales and other biological systems.*

NEW **Policy AQ 20.16:** *Preserve and promote forest lands and other suitable natural and artificial vegetation areas to maintain and increase the carbon sequestration capacity of such areas within the County. Artificial vegetation could include urban forestry and reforestation, development of parks and recreation areas and preserving unique farmlands that provide additional carbon sequestration potential.*

NEW **Policy AQ 20.17:** *Protect vegetation from increased fire risk associated with drought conditions to ensure biological carbon remains sequestered in vegetation and not released to the atmosphere through wildfires.*

NEW **Policy AQ 20.18:** *Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).*

NEW **Policy AQ 20.19:** *Facilitate development of siting of renewable energy facilities and transmission lines in appropriate locations.*

NEW **Policy AQ 20.20:** *Reduce the amount of solid waste generation by increasing solid waste recycle, maximizing waste diversion, and composting for residential and commercial generators. Reduction in decomposable organic solid waste will reduce the methane emissions at County landfills.*

NEW **Policy AQ 20.21:** *Provide homeowner education programs on the various voluntary ways in which they may reduce their homes' GHG emissions, e.g. improving home insulation, adding solar energy capabilities, and providing information on energy-saving landscaping techniques.*

NEW **Policy AQ 20.22:** *Develop motorist education programs on reducing VMT, idling and vehicle maintenance, while increasing carpooling and public transit usage.*

NEW **Policy AQ 20.23:** *Develop education programs about green purchasing and waste reduction measures, e.g., use of sustainable materials, recycling, and composting.*

NEW **Policy AQ 20.24:** *Develop programs to improve job-housing balances, such as through small business development, for areas that are housing rich but jobs poor.*

NEW **Policy AQ 20.25:** *Coordinate County GHG emissions reduction efforts with those of other regional agencies and plans, i.e., SCAG's Compass Blueprint, Regional Transportation Plan (RTP) and SCAQMD's Air Quality Management Plans. In addition, coordinate with cities and sub-regional planning agencies, particularly WRCOG and CVAG, on efforts that jointly affect the County and the cities. Also, coordinate with utility and service providers to develop programs to improve energy efficiency, water efficiency and delivery or structural improvements to reduce demand or better coordinate infrastructure development, as appropriate.*

NEW **Policy AQ 20.26:** *Voluntary GHG reduction objectives for the community sector shall be achieved through development and implementation of specific implementation measures, as determined appropriate and feasible by the County.*

NEW **Policy AQ 20.27:** *Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel through fleet transitioning programs. Also, reduce total vehicle miles travel by County employees, both community to work sites and travel for the conduction of County activities.*

NEW **Policy AQ 20.28:** *Increase the energy efficiency of all existing and new County buildings and infrastructure operations (roads, water, waste disposal and treatment, buildings, etc.). Also, decrease energy use through incorporating renewable energy facilities (such as solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.*

NEW **Policy AQ 20.29:** *Establish purchasing and procurement policies that support the use of green products and services, minimize waste, and promote sustainability.*

NEW **Policy AQ 20.30:** *Reduce potable water use, wastewater and solid generation, and urban runoff at both new and existing County facilities and operations. Also, increase the amount of materials recycled from County facilities.*

NEW **Policy AQ 21.1:** *The County shall require new development projects subject to County discretionary approval to incorporate measures to achieve 100 points through incorporation of the Implementation Measures (IMs) found in the Screening Tables within the Riverside County Climate Action Plan. One hundred points represent a project's fair-share of reduction in operational emissions associated with the developed use needed to reduce emissions down to the CAP Reduction Target.*

a. *This reduction shall be measured in comparison to the "business as usual" (BAU) scenario for the development's operational life. The BAU scenario shall be consistent with the General Plan build out assumptions detailed in Appendix E-1 of the General Plan.*

b. *For the purposes of this policy, the "operational life" of a new development shall be defined as a 30-year span with construction emissions amortized over the 30 years.*

c. *For the purposes of this policy, "new development" refers to private development occurring pursuant to a discretionary land use approval issued by the County of Riverside and subject to binding Conditions of Approval. This definition generally corresponds to projects found non-exempt pursuant to the California Environmental Quality Act (CEQA), but is nevertheless subject to the sole discretion of the County of Riverside as lead agency.*

d. *Other methods for calculating BAU and showing GHG emissions reductions may be used provided such methods are both scientifically defensible and show actual emission reduction measures incorporated into project design, mitigation or alternative selection. That is, reductions must not be illusory "paper" reductions achieved merely through baseline manipulation.*

e. *Nothing in this policy shall be construed as accepting any proposed discretionary project from any legally applicable CEQA requirements or explicitly limiting the scope any analyses required to show CEQA compliance.*

NEW **Policy AQ 21.2:** *Implementation Measures found necessary for a given project pursuant to the CAP Screening Tables shall be incorporated into a project's Conditions of Approval issued by the County to ensure the measures are implemented appropriately.*

NEW **Policy AQ 21.3:** *Discretionary Measures - Because of the varied nature of the private development proposals reviewed by the County, in some cases, the Implementing Measures in the CAP may not provide the most appropriate means for achieving the required Interim GHG reductions. In such cases, the following alternate measures may be utilized, at the County's discretion:*

a. *For large-scale developments, such as specific plans, business parks, industrial centers and those triggering a full environmental impact report, a custom GHG analysis may be warranted to both assure compliance with the applicable targets herein and to provide a customized array of appropriate reduction measures.*

b. *In such cases, the resultant GHG analysis may be used to develop customized GHG reduction measures in place of the CAP's Implementing Measures provided they achieve the stated targets or implement all feasible mitigation short of achieving the applicable targets.*

c. *Project-specific analysis may be particularly valuable when assessing large-scale mixed use developments. In such developments, significant energy efficiencies and VMT reductions can result from smart growth design features, such as provision of housing, jobs, services and recreation within a 5- to 10-minute walking radius. Project-specific analysis in these cases may result in the need for fewer add-on Implementing Measures and potentially yield substantial savings on construction costs.*

NEW **Policy AQ 21.4:** *Implementation of the Climate Action Plan (CAP) and monitoring progress toward the CAP reduction targets shall include the ability to expand upon or, where appropriate, update or replace the Implementation Measures established herein such that the implementation of the CAP accomplishes the county's GHG reduction targets.*

NEW **Policy AQ 22.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions associated with transportation:*

a. Reduce vehicle miles traveled by providing or requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes.

b. Reduce vehicle miles traveled by facilitating an increase in transit options. In particular, coordinate with adjacent municipalities, transit providers and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation.

c. Improve connectivity by requiring pedestrian linkages between developments and transportation facilities, as well as between residential and commercial, recreational and other adjacent land uses.

d. Reduce air pollution and greenhouse gas emissions by improving circulation network efficiency.

e. Reduce traffic through programs that increase carpooling and public transit use, decrease trips and commute times and increase use of alternative-fuel vehicles.

f. Preserve transportation corridors for renewable energy transmission lines and for new transit lines, where appropriate.

NEW **Policy AQ 23.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions associated with land use patterns:*

a. Reduce vehicle miles traveled (VMT) through increased densities in urban centers and emphasis on mixed use to provide localized residential, commercial and employment opportunities in closer proximity to each other.

b. Prevent urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations and to maximize protection of open space, particularly forests, which provide carbon sequestration potential.

c. Conserve energy by increasing the efficiency of delivery of services through the adoption and implementation of smart growth principles and policies.

d. Reduce vehicle miles traveled by commuters through implementation of planning measures that provide appropriate jobs-housing balances within communities.

e. Reduce vehicle miles traveled by increasing options for non-vehicular access through urban design principles that promote higher residential densities in attractive forms with easily accessible parks and recreation opportunities nearby.

f. Improve energy efficiency through implementation of standards for new residential and commercial buildings that achieve energy efficiencies beyond that required under Title 24 of the California Code of Regulations.

g. Reduce vehicle miles traveled by identifying sites for affordable housing for workers close to employment centers and encouraging development of such sites.

NEW **Policy AQ 23.2:** *For discretionary actions, land use-related greenhouse gas reduction objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for individual future projects. County programs shall also be developed and implemented to address land use-related reductions for County operations and voluntary community efforts.*

NEW **Policy AQ 24.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions achieved through improving energy efficiency and increasing energy conservation:*

a. *Require new development (residential, commercial and industrial) to reduce energy consumption through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design. Passive solar design addressed the innate heating and cooling effects achieved through building design, such as selective use of deep eaves for shading, operable windows for cross-ventilation, reflective surfaces for heat reduction and expanses of brick for thermal mass (passive radiant heating).*

b. *Require new development (residential, commercial and industrial) to design energy efficiency into the project through efficient use of utilities (water, electricity, natural gas) and infrastructure design.*

c. *Require new development (residential, commercial and industrial) to reduce energy consumption through use of energy-efficient mechanical systems and equipment.*

d. *Establish or support programs to assist in the retrofitting of older affordable housing units to improve energy efficiency.*

e. *Actively seek out existing or develop new programs to achieve energy efficiency for existing structures, particularly residential units built prior to 1978 when CCR Title 24 energy efficiency requirements went into effect.*

f. *Balance additional upfront costs for energy efficiency and affordable housing economic considerations by providing or supporting programs to finance energy-efficient housing.*

NEW **Policy AQ 24.2:** *For discretionary actions, energy efficiency and conservation objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for all new development approvals. County programs shall also be developed and implemented to address energy efficiency and conservation efforts for County operations and the community.*

NEW **Policy AQ 25.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through water conservation:*

a. *Reduce water use in both new and existing housing, commercial and industrial uses.*

b. *Reduce wastewater generation in both new and existing housing, commercial and industrial uses.*

c. *Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance No. 859.*

d. *Increase use of non-potable water where appropriate, such as for landscaping and agricultural uses.*

e. *Encourage increased efficiency of water use for agricultural activities.*

f. *Decrease energy costs associated with treatment of urban runoff water through greater use of bioswales and other biological systems.*

NEW **Policy AQ 25.2:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through biota conservation:*

a. *Conserve biota that provides carbon sequestration through implementation of the Multiple Species Habitat Conservation Plans for western and eastern Riverside County.*

b. *Preserve forest lands and other suitable natural vegetation areas to maintain the carbon sequestration capacity of such areas within the county.*

c. *Promote establishment of vegetated recreational uses, such as local and regional parks, that provide carbon sequestration potential in addition to opportunities for healthy recreation.*

d. *Promote urban forestry and reforestation, as feasible, to provide additional carbon sequestration potential.*

e. *Promote the voluntary preservation of farmlands for carbon sequestration purposes. In particular, protect important farmlands and open space from conversion and encroachment by urban uses. Also, seek to retain large parcels of agricultural lands to enhance the viability of local agriculture and prevent the encroachment of sprawl into rural areas.*

f. *Promote the voluntary preservation of areas of native vegetation that may contribute to biological carbon sequestration functions.*

g. *Protect vegetation from increased fire risks associated with drought conditions to ensure biological carbon remains sequestered in vegetation and not released to the atmosphere through wildfires. In particular, prevent unnecessary intrusion of people, vehicles and development into natural open space areas to lessen risk of wildfire from human activities.*

NEW **Policy AQ 25.3:** *For discretionary actions, greenhouse gas reduction objectives related to water and biota conservation shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan. County programs shall also be developed and implemented to address conservation issues related to County operations and voluntary community efforts.*

NEW **Policy AQ 26.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions derived from energy generation:*

a. *Encourage the installation of solar panels and other energy-efficient improvements.*

b. *Facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).*

c. *Facilitate development of renewable energy facilities and transmission lines in appropriate locations.*

d. *Facilitate renewable energy facilities and transmission line siting.*

e. *Provide incentives for development of local green technology businesses and locally produced green products.*

f. *Provide incentives for investment in residential and commercial energy efficiency improvements.*

g. *Identify lands suitable for wind power generation or geothermal production and encourage development of these alternative energy sources.*

NEW **Policy AQ 26.2:** *For discretionary actions, the objectives for greenhouse gas reduction through increased use of alternative energy sources shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan. County programs shall also be developed and implemented to address use of alternative energy for County operations and within the community.*

NEW **Policy AQ 27.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions associated with wastes:*

a. *Reduce the amount of solid waste generated.*

b. *Increase the amount of solid waste recycled by maximizing waste diversion, composting and recycling for residential and commercial generators.*

c. *Promote reductions in material consumption.*

d. *Decrease wastewater generation.*

e. *Reduce fugitive methane emissions and increase methane conversion to alternative energies at County landfills.*

NEW **Policy AQ 27.2:** *Greenhouse gas reduction through the above waste reduction objectives shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan for new development. County programs shall also be developed and implemented to address waste reductions for County operations and voluntary community efforts.*

NEW **Policy AQ 28.1:** *The County shall implement programs and requirements to achieve voluntary greenhouse gas emissions reductions through the following public education and outreach objectives:*

a. *Provide homeowner education programs on the various voluntary ways in which they may reduce their homes' GHG emissions.*

b. *Develop and implement motorist education programs on reducing vehicle miles traveled (VMT), idling, vehicle maintenance, etc.*

c. *Develop and implement incentive programs for increasing carpooling, public transit use and other similar means.*

d. *Develop and implement incentive programs for residential energy conservation, such as through retrofitting to improve insulation values, adding solar energy capabilities, planting deciduous trees to provide summer shade, etc.*

e. *Develop and implement programs designed to decrease transportation emissions, such as hybrid vehicle rebates, alternate fuel discounts, carpooling incentives, van pools, etc.*

f. *Develop and implement education programs about green purchasing and waste reduction measures, consistent with the County's Climate Action Plan e.g., use of sustainable materials, composting and such.*

g. *Develop and implement programs to improve job-housing balances, such as through small business development, for areas that are housing rich but jobs poor.*

h. *Develop and implement programs, consistent with the County's Climate Action Plan to incentive recycling and other waste reduction programs.*

NEW **Policy AQ 28.2:** *The County shall implement programs and requirements to achieve greenhouse gas emissions reductions through the following interagency coordination objectives:*

a. *Coordinate County regional GHG reduction efforts with those of other regional agencies and plans, i.e.:*

- *SCAG Regional Blueprint Plan*
- *SCAG Regional Transportation Plan (which will address SB 375)*

- *SCAQMD Air Quality Management Plans*
- *SB 375 Coordination and "Sustainable Communities Strategies"*

b. *Coordinate with constituent cities and sub-regional planning agencies, particularly WRCOG and CVAG, on GHG reduction efforts that jointly affect the county and these cities.*

c. *Coordinate with utility and service providers serving the county to develop programs to improve energy efficiency, water efficiency and delivery or structural improvements to reduce demand or better coordinate infrastructure development, as appropriate.*

d. *Coordinate with regional agencies responsible for developing utility corridors, particularly for electricity transmission, to ensure alternate energy sources available to the county are used to their fullest extent.*

NEW **Policy AQ 28.3:** *Voluntary greenhouse gas reduction objectives for the community sector shall be achieved through development and implementation of specific implementation measures, as determined appropriate and feasible by the County.*

NEW **Policy AQ 29.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions from County transportation, such as fleet composition, construction equipment, employee commuting and travel on County business:*

a. *Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel.*

b. *Increase use of alternative and lower carbon fuels in the County vehicle fleet.*

c. *Reduce total vehicle miles traveled by County employees, both commuting to work sites and traveling for the conduction of County activities.*

NEW **Policy AQ 29.2:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through improving energy efficiency for County facilities and operations:*

a. *Improve the energy efficiency of all existing and new County buildings.*

b. *Improve the energy efficiency of County infrastructure operation (roads, water, waste disposal and treatment, buildings, etc.).*

c. *Decrease energy use through incorporating renewable energy facilities (such as, solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.*

NEW **Policy AQ 29.3:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through achieving waste reduction and resource efficiency for County facilities and operations:*

a. *Establish purchasing and procurement policies that support the use of green products and services, minimize waste and promote sustainability.*

b. *Reduce potable water use at both new and existing County facilities and operations.*

c. *Reduce wastewater generation and urban runoff in both new and existing County facilities and operations.*

d. Increase the amount of materials recycled from County facilities while decreasing the amount of solid waste generated by County facilities that requires landfill disposal.

***NEW* Policy AQ 29.4:** *Greenhouse gas emissions reduction objectives for County operations and facilities shall be achieved through development and implementation of enforceable and binding internal County policies, programs or similar means.*

4.6.4 Thresholds of Significance for Air Quality

The project would result in a significant air quality resource impact if it would:

A. Conflict with or obstruct implementation of the applicable air quality plan.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (See below.)

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

In regards to Threshold B, above, the SCAQMD and MDAQMD emission levels outlined in Table 4.6-C (Emission Thresholds for Air Basins in Riverside County), below, were used to gauge the significance of potential emissions within the three air basins of Riverside County. Emissions standards for each air basin are discussed by air district in Section 4.6.3 (Policies and Regulations Addressing Air Quality).

Table 4.6-C: Emission Thresholds for Air Basins in Riverside County

Air Basin / Units	CO	ROG	NO_X[1]	SO_X	PM_{10}	$PM_{2.5}$
Construction						
SCAB [2] (lbs/day)	550	75	100	150	150	55
SSAB [2] (lbs/day)	550	75	100	150	150	55
MDAB[4] (lbs/day)/(tons/year)	548/100	137/25	137/25	137/25	82/15	82/15
Operational						
SCAB [2] (lbs/day)	550	55	55	150	150	55
SSAB [2] (lbs/day)	550	75	100	150	150	55
MDAB [4] (lbs/day)/(tons/year)	548/100	137/25	137/25	137/25	82/15	82/15
Localized Significance[3]						
SCAB [2] and SSAB [2]	20 ppm [5] / 9 ppm [6]	---	0.18 ppm [5] / 0.03 ppm [8]	---	10.4 [7] µg/m^3	2.5 [7] µg/m^3

Footnotes:
1. NO_2 for the localized standards (in ppm); NO_X for the rest.
2. Regulated by the SCAQMD.
3. Voluntary standards; only appropriate for sites 5 acres or smaller.
4. Regulated by the MDAQMD.
5. One-hour standard.
6. Eight-hour standard.
7. 24-hour standard.
8. Annual standard.

Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

4.6.5 Effect of GPA No. 960 on the General Plan and on Air Quality

In this section, the air quality-related changes to the General Plan are outlined and the effects of these proposed changes relative to air quality are discussed. For this resource, air quality modeling was used to estimate both baseline and build out conditions (with and without the project) for air pollutants in Riverside County, as discussed further below. Specific impacts and mitigation are then evaluated according to identified significance thresholds in the subsequent section (4.6.6).

A. Proposed Changes to the General Plan Related to Air Quality

As part of the project review process, land use and demographic data in the General Plan were updated and policies reviewed and revised where necessary. The existing General Plan addresses air quality mainly through the Air Quality (AQ) Element. GPA No. 960 includes revised air quality standards and policies related to pollution control. For full texts of the General Plan policies cited here, see Section 4.6.3.D.

Air Quality Standards: Text was added to address changes in the State of California and federal standards since the adoption of the 2003 General Plan. Further, modifications were included that would address the specific requirements of SB 375, AB 32 and Governor Schwarzenegger's Executive Order of June 2005 (relating to green-house gases; see Section 4.7 for more details).

GHG Emission Reduction: GPA No. 960 introduces Riverside County's first GHG Emission Reduction Strategy and includes Table AQ-7, 2008 Baseline GHG Emissions Inventory for Unincorporated Riverside County. The new table presents a baseline inventory of GHG emissions currently being produced by Riverside County residents, businesses and government (County of Riverside) operations. The GHG Emission Reduction Strategy identifies GHG reduction categories and objectives, references a new Climate Action Plan (CAP) and adds new policies to the AQ Element to achieve the greenhouse gas reduction objectives.

A variety of LUD and policy area changes proposed as per the descriptions in Section 3.0 (Project Description) of the EIR and associated Figure 3-1 (and corresponding maps within each Area Plan) may indirectly affect air quality. Such changes would lead to either an increase or decrease in development potential (density or intensity). Introducing new people and property into areas would incrementally affect air quality in the region as well. GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies and others, as described in EIR Section 3.0.

Infrastructure and utilities, such as roads, power transmission lines, water and sewer lines, are developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need. Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services, are not presently foreseeable beyond the master countywide level (as addressed previously in EIR No. 441). These improvements would require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the project and the General Plan build out. As such, future impacts and mitigation must be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage. Nevertheless, this chapter presents theoretical air emission estimates for both existing and build out conditions. Each of these scenarios is outlined separately, below.

B. Analysis of the Effect of GPA No. 960 on Air Quality

The proposed project would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and standards, and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County.

Accordingly, air quality effects are most often determined on the basis traffic patterns, including those resulting from land use, population and employment sources. Air quality effects are also based on growth projections and patterns. Predictive modeling tools such as URBEMIS2007 are used to calculate emissions based off these projections. As a result, future air quality impacts can be modeled (estimated) for a variety of future scenarios, such as the "build out scenario," which is a theoretical point in time when all of the land uses planned would have been built. As detailed in Section 4.1 (Environmental Assumptions and Methodology), the theoretical build out point used in this EIR for the General Plan and GPA No. 960 is approximately 2060. The theoretical build out for GPA No. 960 occurs at such a time when unincorporated Riverside County has developed land uses to the point that they are "built out" to the density for each land use type designated in GPA No. 960. The year 2060 was based upon the estimated time needed to achieve "build out" using the population and growth projections for the unincorporated area of Riverside County.

It should be noted, however, that build out is a *theoretical* point in time, fixed in order to allow comparison between two differing outcomes. The ultimate outcome, that is, what actually gets built in the real world, is subject to many complex and varying factors over time. Hence, the theoretical approximation is more of a likely best (or worst) case scenario, rather than a precise acre-by-acre prediction. Also, these calculations do not take into account any potential future annexations of unincorporated Riverside County areas into existing (or new) cities or public facility districts, which could lead to other agencies being responsible for provision of the public services. This is appropriate because doing so means the public service needs of the unincorporated county are, at worst, over-estimated so that, in an abundance of caution, mitigation needs are similarly over-estimated.

These build out projections are valuable because they provide a snapshot of how the County of Riverside might look if all of the land uses mapped in the existing (2008) General Plan were built as planned. And, they enable a comparison of the possible outcome of the changes proposed by the project. In each of the subsections that follow details are provided on how the specific projections were developed, as well as the data sources and methods uses.

1. Future Development Construction Emissions

Air pollutant emissions are generally associated with two types of activities: construction and operation. Construction activities include the clearing and grading of land, building of structures and the installation of utilities and road, painting and paving as well as the vehicle trips associated with the site's workers, deliveries of build materials, etc., associated with individual developments. Accordingly, the emissions associated with construction tend to be site specific and depend upon the type of construction and development proposed, as well as the location, time of year and duration, among other things. Because these factors can vary so widely (and would occur over a roughly 50-year time span), estimating all of the construction emissions or impacts for future development expected as the County of Riverside builds out according to the General Plan (existing or proposed) is infeasible. Nevertheless, to provide a reference of the types of air quality emissions associated with "typical"

individual construction activities, several hypothetical scenarios were modeled for three types of residential development. See Table 4.6-D (Typical Project Construction Emission Estimates), below.

Table 4.6-D: Typical Project Construction Emission Estimates

Pollutant	Example Development Projects			AQ Construction Thresholds	
	5 Acres with 190 MFR	25 Acres with 75 SFR	50 Acres with 150 SFR	South Coast and Salton Sea Air Basins[1]	Mojave Desert Air Basin[2]
ROG	66.01	55.51	*108.25*	75	137
NO_X	22.00	29.68	29.68	100	137
CO	26.69	22.22	34.70	550	548
PM_{10}	26.08	*156.55*	*255.55*	150	82
$PM_{2.5}$	6.21	27.53	53.63	55	82

Key: lbs/day = pounds per day MFR = Multi-family residential units SFR = Single-family residential units
Footnotes:
1. Thresholds for these basins from SCAQMD.
2. Thresholds for this basin from MDAQMD.
Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

Residential development acreages can range from less than an acre to well over a hundred in some cases. Keeping in mind that a variety of projects would be undertaken, examples of construction of residential development on 5, 25 and 50 acres were modeled. These construction emission estimates were based on the default construction phase lengths and equipment usage included in the URBEMIS2007 model. Construction estimates for commercial and industrial uses were not modeled as such uses vary too widely to be accurately typified.

For the residential examples analyzed above, emissions would result from onsite grading activities, transport of materials to and from the site and the actual building construction, painting and paving associated with the individual developments. Table 4.6-D shows that the SCAQMD and MDAQMD thresholds for PM_{10} are exceeded with the disturbance of between 25 and 50 acres. In addition, the construction of 150 single family residential units or more is anticipated to exceed the SCAQMD threshold for ROG. Because the residential examples analyzed above demonstrate that the thresholds are exceeded, construction air quality impacts would be considered significant for such individual projects. And, for GPA No. 960, since the precise timing of future development cannot be controlled to avoid multiple projects below the thresholds from occurring simultaneously, construction air quality impacts are also considered cumulatively considerable. See Section 5.5 (Cumulative Impacts) for more details.

Further, because construction impacts are modeled from a myriad of variables unique to each project, it is impossible to develop a reasonably foreseeable forecast of construction-related air quality impacts resulting from future development accommodated by GPA No. 960. Thus air quality impacts as a result of construction must be addressed on a case-by-case basis for each development project.

2. Future Development Operational Emissions

Operational emissions based on future conditions were calculated using URBEMIS for stationary and mobile source emissions. Project-specific data for the types and amounts of various land use development planned were entered into URBEMIS to determine the pollutant emissions anticipated at full build out. This data includes the number of residential dwelling units, square footage of non-residential land uses, average daily trips, vehicle miles traveled and average trip lengths. Where project-specific data was not available, URBEMIS defaults provided for the County of Riverside were used. *The specific land use and mobile source assumptions included ~~I~~ in the modeling are detailed in Appendix EIR-5 Air Quality Data Section A—Modeling Assumptions.*

Baseline conditions for operational emissions are the pollutant levels associated with the existing development and land uses. Because there are changes in land use type and density, a simple calculation of new development emissions would not accurately assess the changes in pollutant emissions being proposed. Therefore, in order to determine pollutant concentrations anticipated from project implementation, the emissions from the baseline condition are subtracted from the total anticipated emissions at project build out under the proposed General Plan. It should be noted the existing and future levels depicted in Tables 4.6-E, 4.6-F, 4.6-G and 4.6-H represent emissions for lands reasonably foreseeable as being spatially affected by GPA No. 960 changes only; not countywide General Plan build out scenarios. (See Section 4.7 for countywide scenarios.)

Table 4.6-E (Comparison of Unmitigated Project Operational Emissions – SCAQMD) and Table 4.6-F (Comparison of Unmitigated Project Operational Emissions – MDAQMD) show the anticipated unmitigated emissions under the proposed GPA No. 960 respectively according to the portions of Riverside County under jurisdiction of the SCAQMD and MDAQMD. As shown, the project would result in net emissions that would exceed SCAQMD and MDAQMD thresholds of significance for CO, ROG, SO_X, PM_{10} and $PM_{2.5}$ but would be less than significant for NO_X emissions. The negative net emissions associated with NO_X is due to the substantial decrease in anticipated emissions from vehicles mandated by increased efficiency requirements in current federal and California State law that have been implemented and will continue to affect the motor vehicle fleet between the existing year and 2040.

Although build out is anticipated to be well beyond 2040, the URBEMIS model does not have emission factors beyond 2040. Thus, these analyses represent a conservative prediction of emissions for build out. Note that the NO_X negative net emissions are due to the substantial decrease in anticipated vehicle emissions due to increased State of California efficiency requirements between the existing year and 2040.

Tables 4.6-E and 4.6-F show that although future development accommodated under the proposed project is designed for decreased density/intensity overall, its implementation would still result in daily emissions above both the SCAQMD and MDAQMD thresholds. While some of the individual development may be able to incorporate project designs and reduction features that would reduce emissions to below the regulatory threshold, the project must be considered in total for significance consideration. Because emissions of the majority of the criteria pollutants exceed the regulatory thresholds, impacts with respect to stationary and mobile sources are considered potentially significant before the implementation of regulations, policies and mitigation.

Table 4.6-E: Comparison of Unmitigated Project Operational Emissions – SCAQMD

Source[1, 6]	CO (lbs/day)[1]	NO_X (lbs/day)[1]	ROG (lbs/day)[1]	SO_X (lbs/day)[1]	PM_{10} (lbs/day)[1]	$PM_{2.5}$ (lbs/day)[1]
Existing Emissions[2]						
Mobile Source	196,880	31,670	18,320	160	25,020	5,100
Area Source	~~44,370~~ 48,990	~~3,480~~ 3,520	~~22,130~~ 22,960	120	6,720	6,470
Total Existing Emissions	***~~241,250~~ 245,870***	***~~35,140~~ 35,190***	***~~40,445~~ 41,280***	***280***	***31,740***	***11,570***
Project Emission at Build Out[3]						
Mobile Source	185,490	21,480	18,750	700	109,480	21,340
Area Emissions	~~139,810~~ 151,790	~~9,770~~ 9,910	~~68,690~~ 70,850	390	~~21,300~~ 21,330	~~40~~ 20,530
Total GPA No. 960 Build Out Emissions	***~~325,300~~ 337,280***	***~~31,250~~ 31,390***	***~~87,430~~ 89,600***	***1,090***	***~~130,790~~ 130,810***	***~~21,380~~ 41,870***
Net Emissions[4]						
Mobile Source	- 11,390	- 10,190	+430	+550	+84,460	+16,240
Area Source	+102,810	+6,390	+47,890	+270	+14,610	+14,060
Net Change in Emissions[5]	***+91,420***	***- 3,800***	***+48,320***	***+810***	***+99,070***	***+30,300***
SCAQMD SCAB Thresholds	550	55	55	150	150	55

Significant Impact?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
SCAQMD SSAB Thresholds	550	100	75	150	150	55
Significant Impact?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***

Footnotes:
1. All values (except thresholds) rounded to nearest 10. Thus, totals may not sum precisely.
2. Existing emissions represent emissions from operational activities calculated with URBEMIS2007 for existing land uses within unincorporated Riverside County areas.
3. Proposed project build out emissions represent estimated land uses and vehicle fleet in 2060 calculated with URBEMIS2007 for unincorporated Riverside County areas.
4. The net change in emissions indicates the emissions attributed to the growth anticipated between the existing year and buildout of the General Plan as amended by GPA No. 960.
5. Net emissions is the gross level of emissions minus existing emissions, which equals the project increment.
6. Although build out is anticipated to be well beyond 2040, the air quality model does not have emission factors beyond 2040. This will represent a conservative analysis of emissions for build out.

Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

Table 4.6-F: Comparison of Unmitigated Project Operational Emissions – MDAQMD

Source	CO (tons/yr)	NO_X (tons/yr)	ROG (tons/yr)	SO_X (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)
Existing Emissions						
Mobile Source	21,950	3,190	1,940	20	2,820	580
Area Source	990	260	970	1	50	50
Total Existing Emissions	***22,940***	***3,450***	***2,910***	***20***	***2,870***	***630***
Proposed GPA No. 960 (Project) Emissions at Build Out						
Mobile Source	21,420	2,270	2,020	80	12,970	2,530
Area Emissions	2,840	690	3,030	3	180	170
GPA No. 960 Build Out Emissions	***24,260***	***2,960***	***5,050***	***80***	***13,150***	***2,700***
Net GPA No. 960 Emissions (Project Emissions minus Existing Emissions) [1]						
Mobile Source	- 530	- 920	+80	+60	+10,150	+1,950
Area Source	+1,860	+430	+2,060	+2	+120	+120
Net Plan Emissions	***+1,330***	***- 490***	***+2,140***	***+60***	***+10,270***	***+2,070***
MDAQMD Thresholds	**100**	**25**	**25**	**25**	**15**	**15**
Significant Impact?	**YES**	**NO**	**YES**	**YES**	**YES**	**YES**

Footnotes:
1. Net emissions are those attributed to the growth anticipated between existing year and full project build out.
2. Net emissions are gross emissions minus existing emissions, which equals the project increment. Note that for NOX the negative net emissions is due to the substantial decrease in anticipated vehicle emissions due to increasing State of California efficiency requirements between existing year and 2040. Although build out is anticipated for 2060, the air quality model's emission factors only go to 2040, so build out is conservatively estimated to occur by the earlier year.

Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

The existing General Plan policies and mitigation along with new General Plan policies and mitigation measures would reduce emissions from operational activities. Table 4.6-G (Mitigated Net Project Operational Emissions – SCAQMD) and Table 4.6-H (Mitigated Net Project Operational Emissions – MDAQMD) show the anticipated project build out emissions after reductions are implemented. However, because the exact nature and location of the build out of the proposed project is unknown, the extent of reductions available from all measures is not fully known and therefore is not included in the calculated reductions.

Reductions included in Tables 4.6-G and 4.6-H are associated with low VOC paint requirements, increased energy efficiencies and transportation reductions. As can be seen, even with these reductions, emissions are anticipated to be above thresholds for all criteria pollutants except CO (SCAQMD only) and NO_X (SCAQMD and MDAQMD). While some of the emissions reductions could not be quantified, it is not anticipated that their reductions would be sufficient to reduce emissions by the 50% to 99% required to achieve the regulatory thresholds.

It can be assumed that various sizes and types of project would be developed, however. And, because of the increased density seen for the land uses and desired proximity of residential land uses to both transit and

commercial centers, it can be assumed that both construction and operation of commercial and potentially industrial sources would be developed relatively close to sensitive receptors such as residences or schools. Each individual future commercial or industrial development would require an environmental analysis because the emissions with respect to countywide sensitive receptors cannot be determined. For projects within SCAQMD's jurisdiction, the analysis shall include an LST evaluation using the screening level analysis for projects at or under 5 acres in size and a more detailed analysis for projects over 5 acres. (See Impact 4.6.D.)

Table 4.6-G: Mitigated Net Project Operational Emissions – SCAQMD

Emission Sources	CO (lbs/day)	NO_X (lbs/day)	ROG (lbs/day)	SO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Net Project Emissions (GPA No. 960 Emissions minus Existing Emissions) (From Table 4.6-E)						
Mobile Source	- 11,390	- 10,190	430	550	84,460	16,240
Area Source	102,810	6,390	47,890	270	14,610	14,060
Net Plan Emissions	***91,420***	***- 3,800***	***48,320***	***810***	***99,070***	***30,300***
Reductions Associated with Mitigation						
Mobile Source Reduction	- 4,070	- 3,640	- 150	- 200	- 30,180	- 5,800
Area Source Reductions	- 93,690	- 2,230	- 33,940	- 260	- 14,470	- 13,920
Net Mitigated Plan Emissions (Net Plan Emissions minus Reduction)						
Mobile Source	- 15,460	- 13,830	+280	+350	+54,280	+10,440
Area Emissions	+9,120	+4,160	+13,950	+10	+140	+140
Net Mitigated Plan Emissions	***- 6,340***	***- 9,660***	***+14,230***	***+360***	***+54,420***	***+10,570***
SCAQMD SCAB Thresholds	**550**	**55**	**55**	**150**	**150**	**55**
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**	**YES**
SCAQMD SSAB Thresholds	**550**	**100**	**75**	**150**	**150**	**55**
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**	**YES**

Footnote: Note that negative numbers represent mitigation that reduces emissions below current baseline conditions.
Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

Table 4.6-H: Mitigated Net Project Operational Emissions – MDAQMD

Source	CO (tons/yr)	NO_X (tons/yr)	ROG (tons/yr)	SO_X (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)
Net Project Emissions (GPA No. 960 Emissions minus Existing Emissions) (From Table 4.6-F)						
Mobile Source	- 530	- 920	80	60	10,150	1,950
Area Source	1,860	430	2,060	2	120	120
Net Plan Emissions	***1,320***	***- 490***	***2,140***	***60***	***10,270***	***2,070***
Reductions Associated with Mitigation						
Mobile Source Reduction	- 190	- 330	- 30	- 20	- 3,630	- 700
Area Source Reductions	- 810	- 90	- 340	- 2	- 120	- 120
Net Mitigated Plan Emissions (Net Plan Emissions minus Reduction)						
Mobile Source	- 720	- 1,250	+50	+40	+6,520	+1,260
Area Emissions	+1,050	+350	+1,720	0	0	0
Net Mitigated Plan Emissions	***~~+1,130~~ +330***	***~~- 820~~ -900***	***~~2,110~~ +1,770***	***+40***	***~~6,650~~ +6,520***	***~~1,370~~ +1,250***
MDAQMD Thresholds	**100**	**25**	**25**	**25**	**15**	**15**
Significant Impact?	**YES**	**No**	**YES**	**YES**	**YES**	**YES**

Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

3. Localized Significance Thresholds (LSTs)

Due to the programmatic nature of the General Plan and the proposed project, detailed construction phasing, equipment and intensities are not available for the development area. Further, the exact size and location of future development within Riverside County is unknown at this time. Therefore, project-level analysis for impacts to sensitive receptors and population groups cannot be accurately determined using LST analysis and would be inappropriate under the SCAQMD's LST methodology, because specific acreages, uses and distances to

sensitive receptors are required in order to calculate localized pollutant concentrations at sensitive receptors. Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases. Sensitive receptors are those areas where sensitive populations may be for extended periods of time, resulting in sustained exposure to any pollutants present.

Localized significance thresholds (LSTs) were developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction or operation for individual developments. Methodology for determining significance of project impacts with respect to sensitive receptors provides screening levels for those projects of less than 5 acres but requires more in-depth dispersion modeling for project sites greater than 5 acres. The screening process results in a conservative estimate of emissions due to the general information that is used to determine emissions. While dispersion modeling is more time intensive, it provides for a project-specific analysis which takes into account not only the size of the project, but also can account for wind direction, topography and additional barriers, such as buildings.

To provide a reference of the types of emissions associated with "typical" construction and operation activities, a hypothetical 5-acre analysis is presented in Table 4.6-I (Localized Significant Analysis for 5-Acre Site – Construction) and Table 4.6-J (Localized Significant Analysis for 5-Acre Site – Operational) below. For projects less than 5 acres in size, screening analyses would occur using the concentrations identified in the LST lookup tables developed by the SCAQMD. Each source receptor area (SRA) within the SCAB has a unique LST for CO, NO_X, PM_{10} and $PM_{2.5}$. While the project's build out area is much greater than 5 acres, it is possible that some of the individual developments that occur would disturb less than 5 acres. For an assumed 5-acre development project located within SRA 24 (Perris Valley area), the lookup tables can be used to determine what the allowable emission concentrations would be at various distances from the construction site. Table 4.6-I shows the LST thresholds for a 5-acre site in SRA 24 in comparison to the emissions estimates detailed previously in Table 4.6-D, above.

Table 4.6-I: Localized Significant Analysis for 5-Acre Site – Construction

Distance from Site	CO	NO_X	PM_{10}	$PM_{2.5}$
25 meters Threshold	1,577	270	13	8
50 meters Threshold	2,178	302	40	10
100 meters Threshold	3,437	378	59	16
200 meters Threshold	6,860	488	96	31
500 meters Threshold	22,530	780	207	105
Project Emissions	**26.69**	**22.00**	**26.08**	**6.21**

Footnote: All values in pounds per day
Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

Table 4.6-J: Localized Significant Analysis for 5-Acre Site – Operational

Distance from Site	CO	NO_X	PM_{10}	$PM_{2.5}$
25 meters Threshold	1,577	270	4	2
50 meters Threshold	2,178	302	10	3
100 meters Threshold	3,437	378	14	4
200 meters Threshold	6,860	488	23	8
500 meters Threshold	22,530	780	50	26
Project Emissions	**2.43**	**1.88**	**0.01**	**0.01**

Footnote: All values in pounds per day
Source: Atkins, Air Quality Study for General Plan Update, 2011. (See Appendix EIR-5)

The same methodology would also apply to operational emissions from the project site. Assuming that the same 5-acre development was for 190 multi-family residential units and the URBEMIS defaults were used, the site's operational emissions could be compared to the LST lookup tables for operational emissions. Table 4.6-J shows the operational LST thresholds in comparison with the anticipated emissions from the theoretical project. The

theoretical 5-acre site project is below all the applicable LST thresholds during construction and operation using the SCAQMD screening level analysis.

These thresholds do not include the mobile sources associated with offsite traffic. However, onsite traffic must also be considered, especially where diesel particulate matter is concerned such as with the operation of a warehouse with numerous loading docks and large volumes of truck traffic. In addition to criteria pollutant analysis, localized emissions of toxic air contaminants (TAC) are also of concern with respect to sensitive receptors. Sources of TACs include diesel particulate matter from railroads, emissions from the combustion of airplane fuel, benzene emissions in close proximity to gasoline dispensing stations, dry cleaners and film processing services that use perchloroethylene, auto body shops due to various solvents, furniture manufacturers and repair facilities that use methylene chloride and print shops that use various solvents.

The primary source of TACs within Riverside County is diesel-fueled trucks and other vehicles traveling the freeways and major roadways. In 2005, CARB published the "Air Quality and Land Use Handbook – A Community Health Perspective," to provide guidance on how to analyze these TAC emission sources in a general plan update and how to apply program-level mitigation. In particular, the CARB Guidance uses buffer zones to insulate sensitive receptors from sources of TACs.

Due to the programmatic nature of the General Plan and GPA No. 960, detailed construction phasing, equipment and intensities are not available. Further, the exact size and location of future development within Riverside County and, in particular, its timing, is unknown at this time. Therefore, project-level analysis for impacts to sensitive receptors cannot be accurately determined. It can, however, be assumed that various sizes and types of projects will be developed and, because of the increased density seen for the land uses and desired proximity of residential land uses to both transit and commercial centers, it can be assumed that both construction and operation of commercial and potentially industrial sources would be developed relatively close to sensitive receptors such as residences or schools.

4.6.6 Air Quality - Impacts and Mitigation

A. Air Quality Plan Conflicts: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact 4.6.A – Cause Inconsistency With Air Quality Plans: As outlined in Section 4.3 (Population and Housing), future development associated with GPA No. 960 represents a reduction in Riverside County capacity and yields lower population growth forecasts, both compared to the existing General Plan and to current SCAG (2008 RTP) projections. Since air quality management plans (AQMPs) are developed using growth forecasts issued by the applicable regional association of governments (SCAG, etc.), a project that is consistent with the applicable growth forecast would generally be consistent with the AQMP. This is the case for GPA No. 960. Further, it includes a number of new policies and programs related to greenhouse gas reductions that would also improve air quality for a variety of criteria pollutants addressed in AQMPs. Compliance with existing regulatory programs, Riverside County ordinances and General Plan policies, as well as new ones included in GPA No. 960, would further reduce this impact by reducing conflicts with or obstruction of the AQMP. However, while the existing General Plan policies and new ones included in GPA No. 960 may reduce conflicts and obstruction of any AQMP, the combined emissions from all proposed General Plan development would exceed the SCAQMD and MDAQMD significance thresholds for criteria pollutants. Exceeding these thresholds has the potential to hinder the region's compliance with each AQMP. Therefore, this impact is significant and unavoidable.

1. Analysis of Impact 4.6.A

As outlined in Section 4.3, in terms of direct growth, GPA No. 960's land use changes would serve to limit and slightly reduce the development capacity of Riverside County, yielding 1.4% less population growth than that projected for the existing General Plan, 2.0% fewer dwelling units and 5.6% fewer jobs. Similarly, traffic volumes also decrease proportionally.

Air quality management plans (AQMPs) are developed using growth forecasts issued by the applicable regional association of governments (SCAG, etc.). Thus, a project that is consistent with the applicable growth forecast would generally be consistent with the AQMP. Thus, overall GPA No. 960 represents a reduction in county capacity and yields lower population growth forecasts, both compared to the existing General Plan and to current SCAG (2008 RTP) projections.

SCAG's Regional Comprehensive Plan and Guide (RCP) includes growth forecasts that are used in the development of air quality-related land use and transportation control strategies. In Southern California, a reduction in vehicle miles traveled correlates with a reduction in emissions of criteria pollutants (and greenhouse gases). As stated earlier, the project's effect on the build out of Riverside County would be to lessen its ultimate density and intensity. For example, the SCAG-projected population for Riverside County in 2035 is 1,243,632. The projected 2035 population resulting from implementation of GPA No. 960 would be 909,072. Similar reductions are seen for housing and employment as well. Thus, Riverside County projections would fall within SCAG projections for 2035.

The 2007 Air Quality Management Plan (AQMP) discussed in Section 4.6.3 was prepared to accommodate growth, to reduce the high levels of pollutants within areas under the jurisdiction of SCAQMD, to return clean air to the region and to minimize the impact of reduced air quality on the economy. Projects that are considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections used during the preparation of the AQMP. Therefore, projects, uses and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

The MDAQMD states that a General Plan amendment or similar land use plan change which does not increase dwelling unit density, vehicle trips or vehicle miles traveled would be considered to conform with attainment of the Air Quality Attainment and Ozone Attainment Plans. GPA No. 960 represents a population reduction of 1.4% by 2035 and an approximate 18% reduction in VMT by 2035 (extrapolated from the 35% reduction anticipated by 2060 as part of the Climate Action Plan requirements).

Projects that are consistent with the employment, population, housing and VMT projections identified in the Growth Management chapter of the Regional Comprehensive Plan and Guide (RCPG) prepared by the Southern California Association of Governments are considered consistent with the growth projections used by the Air Districts to anticipate future pollutant concentrations and determine reductions needed to reach federal and state ambient air quality standards.

Additionally, GPA No. 960 is consistent with SCAG's Regional Growth Management Plan and the rate of growth and vehicle miles traveled for build out of the General Plan as modified by the project is also consistent with SCAG's projected population growth. In addition, because of other traffic and vehicle-related changes associated with the proposed Climate Action Plan and Circulation Element revisions, it is anticipated that GPA No. 960 would also be consistent with SCAG's Regional Mobility Plan, the locally adopted Congestion Management Plan, as well as the Coachella Valley PM_{10} Plan.

Thus, through implementation of the project's proposed changes to the General Plan, including reductions in population, housing, employment and vehicle miles traveled, GPA No. 960 would be consistent with all of the applicable air quality plans. Further, compliance with existing regulatory programs, Riverside County ordinances and General Plan policies, as well as new ones included in GPA No. 960, would ensure that the project reduces conflicts with or obstruction of any AQMP.

However, while the existing General Plan policies and new ones included in GPA No. 960 may reduce conflicts and obstruction of any AQMP, the combined emissions from all proposed General Plan development would exceed both the SCAQMD and MDAQMD significance thresholds for criteria pollutants. These exceedances have the potential to hinder the region's compliance with each AQMP. Therefore, without mitigation this impact is significant.

2. Regulatory Compliance for Impact 4.6.A

Consistency with applicable air quality plans would be further ensured or enhanced through the following regulations, programs and policies.

a. Compliance With Federal, State and County Regulations

Riverside County Ordinance No. 706 and Ordinance No. 726, as detailed in Section 4.6.3, above, would help reduce motor vehicle emissions of criteria pollutants through reduction of vehicle miles traveled. This would also ensure consistency with the SCAQMD and MDAQMD's pollution reduction goals.

b. Compliance with Existing General Plan Policies

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval. See Section 4.6.3.D for full text of each of these policies.

Policy LU 2.1: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies LU 8.12, 11.1-11.4 and 13.1-13.4: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies C 1.2, 1.7, 4.1, 4.8, 9.2, 11.2, 11.4, 11.5, 11.7, 13.1 and 20.14: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies AQ 1.1-1.9, 2.3, 2.4, 4.6, 7.4, 10.4, 15.1, 16.1-16.4, 17.1-17.5, 17.8 and 17.11: These policies promote the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies, and enhanced community involvement.

Policy AQ 5.1: This policy encourages the use of building operations to use and reuse materials to reduce the amount of energy used and waste generated during daily operations.

Policies AQ 3.2-3.4, 4.5, 10.1, 10.2 and 10.3: These policies promote the reduction of mobile source emissions through employer and employee education and implementation of transportation demand measures that would reduce vehicle miles traveled.

Policies AQ 4.4, 5.2-5.4, 17.9 and 17.10: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policies AQ 7.1-7.3, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 11.3 and 11.4: These policies promote the reduction in vehicle miles traveled through the location of new employment centers, residential land uses and transit centers in close proximity. Further reductions are encouraged through public event incentives such as reduced transit pass costs.

Policies AQ 13.1-13.3, 14.1, 14.2 and 14.4: These policies encourage the County of Riverside to reduce vehicle miles traveled through enhancement of transportation fleet mixes, planning for new transportation/land use balance and enhancing and preserving existing transit corridors.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed policies of the Riverside County General Plan would also further ensure that impacts with respect to air quality plan compliance are less than significant. While these proposed air quality policies were introduced to specifically address greenhouse gas emissions, these policies would also provide a reduction in criteria pollutant emissions and so are included herein. See Section 4.6.3.D for full text of each General Plan policy mentioned.

Policy LU 1.5: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies C 12.2 and 17.4: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies AQ 4.2 and 4.3: Together, these policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policy AQ 4.7: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies, and enhanced community involvement.

Policies AQ 22.1 and 29.1: These policies implement requirements to reduce greenhouse gases emissions associated with transportation through the reduction in vehicle miles traveled.

Policies AQ 23.1 and 28.1: These policies help reduce GHG emissions through land use planning.

Policies AQ 24.1, 25.1, 26.1, 27.1, 28.1, 29.2 and 29.3: These policies implement programs and requirements to reduce greenhouse gas emissions through increased energy efficiency, resource conservation and waste reduction.

3. Additional Project-Specific Mitigation for Impact 4.6.A

Additional project-specific mitigation measures are necessary to further avoid, reduce or minimize impacts from operational pollutant emissions. The following mitigation measures from EIR Section 4.7 would also reduce air pollution by reducing energy use and vehicle miles traveled and ensure county compliance with applicable air quality management and attainment plans.

NEW Mitigation Measure 4.7.A-N1: To ensure GHG emissions resulting from new development are reduced to levels necessary to meet California State targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measure backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011).

NEW Mitigation Measure 4.7.A-N2: In lieu of a project-specific GHG analysis per Mitigation Measures 4.7.A-N1, a future discretionary project pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions.

4. Finding on Significance for Impact 4.6.A

With implementation of and compliance with the above-listed regulatory programs, Riverside County ordinances, existing and proposed General Plan policies, as well as proposed new Mitigation Measures 4.7.A-N1 and N2, air pollutant emissions from future development accommodated by GPA No. 960 would be reduced but still exceed regulatory thresholds for the SCAB, SSAB and MDAB. Exceedance of regulatory thresholds would conflict with the implementation of the applicable air quality plans. Implementation of greenhouse gas reduction measures would afford additional reductions in criteria air pollutants; however, it would not reduce criteria pollutant impacts to below regulatory thresholds. Thus, impacts associated with implementation of the proposed project would remain significant and unavoidable with respect to regional air quality plans.

B. Significant Air Emissions: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact 4.6.B(1) – Cause Significant Construction (Short-Term) Air Emissions: Future development accommodated by the proposed project, GPA No. 960, would result in construction activities generating air quality emissions that may be quantified based on the level of daily disturbance. However, since GPA No. 960 would be implemented through many (perhaps thousands) of individual projects occurring throughout Riverside County over next roughly 50 years, the level of daily disturbance for GPA No. 960 cannot be calculated and, therefore, the associated construction emissions cannot be quantified. Although implementing projects may be individually consistent with air quality standards, because of the cumulative nature of air emissions, such projects may nonetheless cumulatively exceed an air quality standard. Thus, even with implementation of the regulations, existing policies and mitigation measures outlined herein that reduce emissions, it cannot be guaranteed that they would be cumulatively reduced to below applicable thresholds. Thus, this impact would be significant and unavoidable with respect to violations of air quality standards for construction activities.

1. Analysis of Impact 4.6.B(1)

Construction activities typically result in temporary air emissions (and air quality impacts) due to onsite grading activities, transport of materials to and from the site and construction of the actual building(s), including emissions from the gluing, painting and paving associated with them.

As discussed in detail in Section 4.6.2 (Existing Environmental Setting – Air Quality), the air districts have developed thresholds by which project impacts can be compared to determine significance. These thresholds are summarized in Table 4.6-C in Section 4.6.3. Thus, while the exact nature of future development is unknown, estimates of emissions and impacts associated with specific sizes of individual development activities can be predicted. Accordingly, as shown in Table 4.6-D, the MDAQMD construction emissions threshold for PM_{10} would be exceeded with the disturbance of as little as 5 acres and between 25 and 50 acres for the SCAQMD thresholds. Similarly, construction of between 75 and 150 single-family residential units would exceed the SCAQMD threshold for ROG. Thus, some projects could be large enough on their own to generate emissions that exceed these thresholds.

The project would result in future development occurring via numerous individual actions scattered across the entirety of Riverside County and at various unforeseeable intervals over the next roughly 50 years. Although the revisions proposed to the General Plan would lower the build out capacity of Riverside County, there would still be development on lands that are currently vacant or under-utilized. Such development would result in new temporary construction emissions being generated. Unlike an individual project for which project-specific construction information available, it is infeasible to quantify all of the individual projects that would contribute incrementally to construction emissions across Riverside County. However, generally speaking, construction equipment emit both criteria pollutants and diesel particulate matter (DPM), which is a Toxic Air Contaminant (TAC), and construction activities such as grading generate fugitive dust emissions including PM_{10} and $PM_{2.5}$. The cumulative emissions of criteria pollutants and DPM resulting from all construction activities throughout Riverside County will potentially affect the health of residents within Riverside County. In the absence of data to prove otherwise, it is therefore assumed that future development accommodated by the proposed project would result in varying amounts of construction on a daily and annual basis through build out that would be cumulatively significant, even if individually consistent with applicable construction thresholds.

2. Regulatory Compliance for Impact 4.6.B(1)

The adverse effects associated with criteria pollutant emissions from future development would be reduced or minimized through adherence to or compliance with the following regulations and policies.

a. Compliance With Federal, State and County Regulations

The 2007 Air Quality Management Plan (AQMP) is intended to accommodate growth within the region while introducing enforceable strategies to reduce the high levels of pollutants within areas under the jurisdiction of SCAQMD. In order to help reduce pollutant levels as required in the AQMP, the SCAQMD has implemented regulatory thresholds for the criteria air pollutants. These thresholds were established to provide for future development while reducing regional concentrations of air pollutants.

MDAQMD Attainment Plans are intended to accommodate growth within the Mojave Desert Air Basin while introducing enforceable strategies to attain the national air quality standards for the MDAQMD jurisdictional areas. As with the SCAQMD, the MDAQMD has implemented regulatory thresholds for the criteria air

pollutants to provide for future development while reducing concentrations of air pollutants consistent with their regional attainment plans.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would also contribute to reducing construction-related pollutant emissions. See Section 4.6.3.D for full text of each.

Policies AQ 1.1-1.4, 1.10, 2.1, 4.8-4.10, 15.1, 16.1, 16.3, 17.1, 17.3, 17.4, 17.6, 17.8 and 17.11: These policies promote the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions from construction-related activities, or limit the level of construction activities that can be undertaken on a daily or annual basis.

Policy AQ 5.1: This policy encourages the use of building methods and use/reuse of materials to reduce the amount of emissions generated during the use or disposal of construction materials.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed policies of the Riverside County General Plan would ensure that impacts with respect to construction emissions are less than significant. Implementation of these policies would provide for a reduction in criteria pollutant emissions. See Section 4.6.3.D for full text of each.

Policy AQ 4.7: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions from construction-related activities, or limit the level of construction activities that can be undertaken on a daily or annual basis.

Policy AQ 4.1: This policy requires the use of building methods and use/reuse of materials to reduce the amount of emissions generated during the use or disposal of construction materials.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.5.1A, 4.5.1B and 4.5.1C were imposed to reduce impacts to air quality. These measures remain applicable to this project and would lessen impacts to air quality by minimizing fugitive dust during construction and reducing pollution resulting from construction equipment.

Existing Mitigation Measure 4.5.1A: Applicable Rule 403 Measures: Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for ten days or more).

- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

- Pave construction access roads at least 100 feet onto the site from main road.
- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

Existing Mitigation Measure 4.5.1B: [Implement the following] additional SCAQMD CEQA Air Quality Handbook dust measures:

- Revegetate disturbed areas as quickly as possible.
- All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 mph.
- All streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

Existing Mitigation Measure 4.5.1C: [Implement the following] mitigation measures for construction equipment and vehicles exhaust emissions:

- The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency.
- The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The construction contractor shall utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.
- The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.
- The construction contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.
- The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.
- Dust generated by the development activities shall be retained on-site and kept to a minimum by following the dust control measures listed below.

    a. During clearing, grading, earthmoving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning, after work is completed for the day and whenever wind exceeds 15 miles per hour.

c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

e. Trucks transporting soil, sand, cut or fill materials and/or construction debris to or from the site shall be tarped from the point of origin.

3. Additional Project-Specific Mitigation for Impact 4.6.B(1)

Despite all of the above measures that lessen impacts from construction, additional project-specific mitigation measures would be necessary to ensure that impacts are less than significant. New Mitigation Measure 4.6.B-N1 would lessen the impact by reducing fugitive emissions of particulate matter. New Mitigation Measures 4.6.B-N2 and 4.6.B-N3 would reduce impacts by limiting the amount of emissions generated by internal combustion engines. Implementation of these additional mitigation measures would further reduce project impacts, although it would not be guaranteed that the impacts would be cumulatively reduced to below threshold levels (even if individual emissions were reduced). Therefore, impacts from construction activities would still be significant and unavoidable.

NEW Mitigation Measure 4.6.B-N1: The construction contractor shall ensure that all disturbed areas and stock piles are watered at least three times per day or soil stabilizers are applied as necessary to prevent visible dust plumes from these areas. Stock piles not in use may be covered with a tarp to eliminate the need for watering or other stabilizers.

NEW Mitigation Measure 4.6.B-N2: All construction equipment shall have EPA rated engines of Tier 3 or better.

NEW Mitigation Measure 4.6.B-N3: As soon as electric utilities are available at construction sites, the construction site shall be supplied with electricity from the local utility and all equipment that can be electrically operated shall use the electric utility rather than portable generators.

4. Finding on Significance for Impact 4.6.B(1)

In addition to site-specific mitigation that would be determined on a project-by-project basis, existing Riverside County practices, SCAQMD and MDAQMD rules, would reduce construction-related impacts by reducing air pollutant emissions from construction activities. However, even where such measures would reduce an individual project's emissions to less-than-significant levels, none of the measures herein serve to prevent individual actions from being constructed concurrently and thus resulting in be cumulatively significant impacts. Additionally, neither the amount of construction occurring nor the exact location within the county is foreseeable, thus, it cannot be determined if the resultant construction emissions could be adequately controlled or reduced to below regulatory thresholds. Without such information, it is not possible to conclude that air pollutant emissions

resulting from construction activities would be adequately reduced and, therefore, this impact must be assumed to remain significant and unavoidable.

Impact 4.6.B(2) – Cause Significant Operational (Long-Term) Air Emissions: Stationary and mobile sources would emit criteria pollutants based on the level of daily operation. Modeling results indicate that such emissions would be large, both for individual future projects and cumulatively due to the countywide scale of GPA No. 960. Even with the implementation of regulations, ordinances and existing and proposed General Plan policies, in addition to new mitigation measures, criteria pollutant emissions would not be reduced below regulatory thresholds. Thus, this impact would remain significant and unavoidable with respect to violations of air quality standards for operational activities.

1. Analysis of Impact 4.6.B(2)

Air emissions associated with the project would occur as a result of operation of new developed uses. Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities within the proposed plan area. Stationary source emissions would be generated by the consumption of natural gas for space and water heating devices, the operation of landscape maintenance equipment and the general operation of industrial and agricultural land uses. Mobile emissions would be generated by the motor vehicles traveling to, within and from land uses unincorporated Riverside County.

Both the SCAQMD and MDAQMD have developed thresholds by which the operational emissions of criteria pollutant impacts can be compared to determine significance. These thresholds are detailed in Section 4.6.2 and summarized in Table 4.6-C in Section 4.6.3. While the exact nature and location of future development is unknown, emission estimates can be made with respect to the amount of development currently existing and at project build out.

As shown in Tables 4.6-E, 4.6-F, 4.6-G and 4.6-H, operational emissions were calculated for existing baseline (2008) and build out (2060) conditions using URBEMIS for stationary and mobile source emissions. The tables show modeled emissions for each of the air basins within Riverside County; SCAB and SSAB under the SCAQMD and the MDAB for MDAQMD. Tables 4.6-E and 4.6-F show emissions without proposed mitigation measures; the remaining two tables show emissions with mitigation.

The tables indicate that GPA No. 960 would result in net emissions that would exceed SCAQMD and MDAQMD thresholds of significance for CO, ROG, SO_X, PM_{10} and $PM_{2.5}$, but would be less than significant for NO_X emissions. The negative net emissions associated with NO_X are due to the substantial decrease in anticipated emissions from vehicles due to increased State of California efficiency requirements that have been or will be implemented between the existing year and 2040.

Tables 4.6-E and 4.6-F show that although development under the proposed General Plan is designed for increased density, its implementation would still result in daily emissions above both the SCAQMD and MDAQMD thresholds. While some of the individual development may be able to incorporate project designs and reduction features that would reduce emissions to below the regulatory threshold, the project must be taken in total for significance consideration. Because the majority of the criteria pollutants' emissions exceed regulatory thresholds, impacts from stationary and mobile sources are considered potentially significant before the implementation of regulations, policies and mitigation.

The existing General Plan policies and mitigation along with new General Plan policies and mitigation measures would reduce emissions from operational activities. Tables 4.6-G and 4.6-H show the anticipated emissions after reductions are implemented. However, because the exact nature and location of the build out of the proposed

project is unknown, the extent of reductions available from all measures is not fully known and therefore is not included in the calculated reductions. Reductions included in Tables 4.6-G and 4.6-H are associated with low VOC paint requirements, increased energy efficiencies and transportation reductions. As can be seen, even with these reductions emissions are anticipated to be above the SCAQMD and MDAQMD thresholds for all criteria pollutants except CO (SCAQMD only) and NO_X (SCAQMD and MDAQMD). While some of the emissions reductions could not be quantified, it is not anticipated that their reductions would be sufficient to reduce emissions by the 50-99% required to get below the regulatory thresholds. Because operational emissions of ROG, an ozone precursor, SOx, PM_{10} and $PM_{2.5}$ are all above the thresholds for both air basins and CO emissions are above the thresholds in the MDAB, these emissions will continue to contribute toward violations of the ambient air quality standards, which will adversely affect the residents within Riverside County.

2. Regulatory Compliance for Impact 4.6.B(2)

As detailed below, compliance with the following existing laws, regulatory programs, General Plan Policies and existing mitigation measures would lessen the adverse effects associated with emissions from the operation of future development accommodated by GPA No. 960.

a. Compliance With Federal, State and County Regulations

Through the implementation of criteria pollutant thresholds, the SCAQMD can accommodate growth within the region while reducing air quality impacts and thereby comply with the 2007 Air Quality Management Plan (AQMP). While it is anticipated that the operation of individual developments under the proposed General Plan may meet or exceed the SCAQMD thresholds, the combined emissions from all proposed General Plan development within the SCAQMD's jurisdiction would exceed these thresholds. This exceedance has the potential to hinder the region's compliance with the AQMP.

Similar to the SCAQMD, the MDAQMD has implemented thresholds for criteria pollutants through which it can reach and maintain pollutant levels anticipated in the Attainment Plans. While the plans are intended to accommodate growth within the Mojave Desert Air Basin, the operation of the entire General Plan area would exceed these regulatory thresholds and may hinder the region's ability to comply with the MDAQMD attainment plans.

Riverside County Ordinances No. 706, 726, 782 and 824 are detailed in the regulatory section above. They would minimize impacts to air quality by reducing motor vehicle emissions through the reduction of vehicle miles traveled, vehicle idling times and by increasing vehicle fuel efficiencies.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would further contribute to reducing air quality impacts through compliance with applicable air quality plans. See Section 4.6.3.D for full text of these policies.

Policy LU 2.1: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies LU 8.12, 11.1, 11.3, 11.4 and 13.1-13.4: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies C 1.2, 1.7, 4.1, 11.2, 11.4-11.7, 12.1, 12.3, 13.1, 13.2 and 20.14: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policy OS 12.1: This policy promotes the reduction in emissions through the use of renewable energy sources such as geothermal for heating.

Policies OS 16.2 and 16.4-16.6: These policies enhance the reduction in criteria pollutant emissions by promoting the use of energy efficient products and resources.

Policies OS 16.3 and 16.8: These policies promote the reduction in mobile source emissions by encouraging the use of alternative fuels and locating land uses close to transit centers.

Policies AQ 1.1-1.11, 2.1, 2.3, 2.4, 4.6, 4.8, 7.4, 10.4, 15.1, 16.1-16.4, 17.1-17.5, 17.8 and 17.11: These policies promote the reduction of criteria pollutant emissions through the development and enforcement of plans, policies, regulations and fees. These policies limit allowable levels of emissions, encourage use of alternate sources, increased efficiencies and enhanced community involvement.

Policy AQ 5.1: This policy encourages the use of building operations to use and reuse materials to reduce the amount of energy used and waste generated during daily operations.

Policies AQ 3.1-3.4, 4.5 and 10.1-10.3: These policies promote the reduction of mobile source emissions through employer and employee education and implementation of transportation demand measures that would reduce vehicle miles traveled.

Policies AQ 5.2-5.4, 17.9 and 17.10: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policies AQ 7.1-7.3, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 11.3 and 11.4: These policies promote the reduction in vehicle miles traveled through the location of new employment centers, residential land uses and transit centers in close proximity. Further reductions are encouraged through public event incentives such as reduced transit pass costs.

Policies AQ 13.1-13.3, 14.1, 14.2 and 14.4: These policies encourage the County of Riverside to reduce vehicle miles traveled through enhancement of transportation fleet mixes, planning for new transportation/land use balance and enhancing and preserving existing transit corridors.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised or proposed policies of the Riverside County General Plan would contribute to the reduction of impacts from operational pollutant emissions. While these proposed air quality policies were introduced to specifically address greenhouse gas emissions, these policies would also provide criteria pollutant reductions and so are included herein. See Section 4.6.3.D for full text of each.

Policies LU 1.5 and 4.1: These policies promote the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies C 4.8, 9.2 and 13.3: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies C 12.2, 17.3, 17.4 and 21.1: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies OS 16.1: This policy enhances the reduction in criteria pollutant emissions by promoting the use of energy efficient products and resources.

Policies AQ 4.2 and 4.3: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policies AQ 4.4: This policy promotes the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policy AQ 4.7: This policy promotes the reduction of criteria pollutant emissions through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies, and enhanced community involvement.

Policies AQ 19.1, 25.1 and 26.1: These policies implement programs and requirements to reduce GHG emissions associated with transportation through the reduction in vehicle miles traveled.

Policies AQ 20.1 and 25.1: These policies implement programs and requirements to reduce greenhouse gas emissions through land use planning.

Policies AQ 22.1, 23.1, 24.1, 25.1 and 26.2: These policies implement programs and requirements to reduce greenhouse gas emissions through increased energy efficiency, resource conservation and waste reduction.

Policy AQ 22.1: This policy implements programs and requirements for reducing greenhouse gas emissions through land use planning.

3. Additional Project-Specific Mitigation for Impact 4.6.B(2)

Additional project-specific mitigation measures, found in the climate change section (Section 4.7) of this document, will also reduce air pollutants and further avoid, reduce or minimize impacts from operational pollutant emissions. Mitigation Measure 4.7.A-N1 would lessen the impact by requiring new development projects to reduce their individual project emissions. Mitigation Measure 4.7.A-N2 would lessen the impact by allowing projects to demonstrate compliance with the Implementation Measures of the CAP by utilizing the Screening Tables. In addition, Mitigation Measures 4.6.B-N4 and 4.6.B-N5 would contribute to the reduction of impacts from operational pollutant emissions.

NEW Mitigation Measure 4.7.A-N1: To ensure GHG emissions resulting from new development are reduced to levels necessary to meet State of California targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measures backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011).

NEW ***Mitigation Measure 4.7.A-N2:*** In lieu of a project-specific analysis per Mitigation Measure 4.7.A-N1, a future discretionary project proposed pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the Riverside County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions.

NEW ***Mitigation Measure 4.6.B-N4:*** All new development shall ensure that all interior and exterior architectural coatings used are low in reactive organic gases.

NEW ***Mitigation Measure 4.6.B-N5:*** If hearths are included in new residential developments, they shall be energy-efficient natural gas appliances. No wood-burning hearths or stoves shall be permitted in new residential developments.

4. Finding on Significance for Impact 4.6.B(2)

Existing regulations and ordinances would reduce operation-related impacts by reducing air pollutant emissions from stationary and mobile sources. Even with the implementation of new mitigation measures, the operational emissions under the proposed project would likely exceed both SCAQMD and MDAQMD thresholds. Therefore, the implementation of proposed GPA No. 960 would result in significant and unavoidable impacts with respect to the emission of criteria pollutants.

C. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard?

Impact 4.6.C – Cause Cumulatively Significant Project Air Quality Impacts: Future development accommodated by GPA No. 960 would result in the emission of criteria pollutants for which the project is in non-attainment during both construction and operation of the new development. However, the exact location and level of activity for development projects under proposed GPA No. 960 is unknown and therefore cumulatively considerable increases to criteria pollutant levels cannot be quantified. Even with compliance with existing regulations and policies and the implementation of existing and new mitigation measures, the proposed project would result in significant and unavoidable cumulative impacts.

1. Analysis of Impact 4.6.C

The cumulative context for consideration of most air pollutants is the basin in which the project is located because the air basin is the natural limit for most air pollutants. Air basins are defined based upon the topographic and meteorological conditions that limit further dispersion of air pollution. For the reasons discussed under Impact 4.6.B(1) and (2), above, the future development accommodated by the project would contribute incrementally to potentially significant air quality pollutant levels in Riverside County.

As outlined in Section 4.6.1 (Introduction), the South Coast Air Basin, Salton Sea Air Basin and Mojave Desert Air Basin are in non-attainment for ozone and PM_{10}. In addition, the SCAB is in nonattainment for $PM_{2.5}$. Neither air basin has a set numerical threshold, nor do they provide methodology or qualitative thresholds to be used to assess cumulative significance. Therefore, as recommended by the SCAQMD, significance for cumulative impacts would be assessed using the same significance criteria as the project-specific analysis. A cumulative significant is indicated for Riverside County if the project would add a cumulatively considerable contribution of a federal or State of California nonattainment pollutant.

As discussed in Impact 4.6.B, even when individual projects can mitigate construction or operational impacts to below regional thresholds, when emissions from all of the individual developments are considered together as one project, the regional thresholds would be exceeded as shown in Tables 4.6-E and 4.6-F. The measures outlined in Impact 4.6.B would aid in reducing cumulative project impacts. However, mitigated emissions shown in Tables 4.6-G and 4.6-H clearly demonstrate that combined emissions associated with GPA No. 960 are above the thresholds of significance and even with the implementation of reductions, emissions of criteria pollutants are not reduced to below regulatory thresholds due to the level of residential and non-residential growth. Therefore, impacts associated with future development accommodated by the project would be cumulatively considerable and result in a significant and unavoidable impact.

2. Regulatory Compliance for Impact 4.6.C

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan policies and existing mitigation measures would lessen a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or State of California ambient air quality standard.

a. Compliance With Federal, State and County Regulations

Through the implementation of criteria pollutant thresholds, the SCAQMD can accommodate growth within the region while continuing to reduce air quality impacts and thereby comply with the 2007 AQMP. While it is anticipated that individual developments under the proposed General Plan may meet or exceed the SCAQMD thresholds, the combined emissions from all proposed General Plan development within the SCAQMD's jurisdiction would exceed these thresholds. This exceedance has the potential to hinder the region's compliance with the AQMP.

Similar to the SCAQMD, the MDAQMD has implemented thresholds for criteria pollutants through which it can reach and maintain pollutant levels anticipated in the Attainment Plans. While the plans are intended to accommodate growth within the Mojave Desert Air Basin, the build out of the entire General Plan area would exceed these regulatory thresholds and may hinder the region's ability to comply with the MDAQMD attainment plans.

Riverside County Ordinances No. 706, 726, 782 and 824, as detailed in the regulatory section above, are intended to reduce motor vehicle emissions of criteria pollutants through the reduction of vehicle miles traveled, vehicle idling times and by increasing vehicle fuel efficiencies. Because motor vehicles represent the largest source of criteria pollutant emissions, a reduction in motor vehicle emissions would reduce cumulative impacts.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would further contribute to compliance with applicable air quality plans. See Section 4.6.3.D for full text of each.

Policy LU 2.1: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies LU 8.12, 11.1, 11.3, 11.4 and 13.1-13.4: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies C 1.2, 1.7, 4.1, 11.2, 11.4-11.7, 12.1, 12.3, 13.1, 13.2 and 20.14: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policy OS 12.1: This policy promotes the reduction in emissions through the use of renewable energy sources such as geothermal for heating.

Policies OS 16.1, 16.2 and 16.4-16.6: These policies promote the reduction in criteria pollutant emissions by promoting the use of energy efficient products and resources.

Policies OS 16.3 and 16.8: These policies promote the reduction in mobile source emissions by encouraging the use of alternative fuels and locating land uses close to transit centers.

Policies AQ 1.1-1.11, 2.1, 2.3, 2.4, 4.6, 4.8-4.10, 7.4, 10.4, 15.1, 16.1-16.4, 17.1, 17.5, 17.8 and 17.11: These policies promote the reduction of criteria pollutant emission through development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage use of alternate sources, increase efficiencies and enhance community involvement.

Policies AQ 4.1, 5.1 and 17.6: These policies encourage the use of building operations to use and reuse materials to reduce the amount of energy used and waste generated during daily operations.

Policies AQ 3.1-3.4, 4.5 and 10.1-10.3: These policies promote the reduction of mobile source emissions through employer and employee education and implementation of transportation demand measures that would reduce vehicle miles traveled.

Policies AQ 4.4, 5.2, 5.3, 5.4, 17.9 and 17.10: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policies AQ 7.1-7.3, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 11.3 and 11.4: These policies promote the reduction in vehicle miles traveled through the location of new employment centers, residential land uses and transit centers in close proximity. Further reductions are encouraged through public event incentives such as reduced transit pass costs.

Policies AQ 13.1-13.3, 14.1, 14.2 and 14.4: These policies encourage the County of Riverside to reduce vehicle miles traveled through enhancement of transportation fleet mixes, planning for new transportation/land use balance and enhancing and preserving existing transit corridors.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed policies of the Riverside County General Plan would contribute to the reduction of criteria pollutant emissions. While these proposed air quality policies were introduced to specifically address greenhouse gas emissions, these policies would also provide a reduction in criteria pollutant emissions and so are included herein. See Section 4.6.3.D for full text of each.

Policies LU 1.5 and 4.1: These policies promote the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations. These policies limit emissions from operation through site placement and design.

Policies C 4.8, 9.2 and 13.3: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies C 12.2, 17.3, 17.4 and 21.1: These policies promote the reduction in mobile source emissions by shortening commute distances and encouraging the use of alternate modes of transportation.

Policies AQ 4.2 and 4.3: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

Policy AQ 4.7: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies, and enhanced community involvement.

Policies AQ 19.1, 25.1 and 26.1: These policies implement programs and requirements to reduce greenhouse gases emissions associated with transportation through the reduction in vehicle miles traveled.

Policies AQ 20.10 and 25.1: These policies implement programs and requirements to reduce greenhouse gas emissions through land use planning.

Policies AQ 22.1, 23.1, 24.1, 25.1 and 26.2: These policies implement programs and requirements to reduce greenhouse gas emissions through increased energy efficiency, resource conservation and waste reduction.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.5.1A, 4.5.1B and 4.5.1C were imposed to reduce impacts to air quality. These measures remain applicable to this project and would lessen impacts to air quality by minimizing fugitive dust during construction and reducing pollution resulting from construction equipment. The measures read as follows:

Existing Mitigation Measure 4.5.1A: Applicable [SCAQMD] Rule 403 Measures: Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for ten days or more).

- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Pave construction access roads at least 100 feet onto the site from main road.
- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

Existing Mitigation Measure 4.5.1B: [Implement the following] additional SCAQMD CEQA Air Quality Handbook dust measures:

- Revegetate disturbed areas as quickly as possible.

- All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 mph.
- All streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

Existing Mitigation Measure 4.5.1C: [Implement the following] mitigation measures for construction equipment and vehicles exhaust emissions:

- The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency.
- The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The construction contractor shall utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.
- The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.
- The construction contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.
- The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.
- Dust generated by the development activities shall be retained on-site and kept to a minimum by following the dust control measures listed below.

    a. During clearing, grading, earthmoving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

    b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning, after work is completed for the day and whenever wind exceeds 15 miles per hour.

    c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

e. Trucks transporting soil, sand, cut or fill materials and/or construction debris to or from the site shall be tarped from the point of origin.

3. Additional Project-Specific Mitigation for Impact 4.6.C

Where future development accommodated by GPA No. 960 would exceed regulatory thresholds for construction emissions, new Mitigation Measures 4.6.B-N1, 4.6B-N2 and 4.6.B-N3 (as listed under Impact 4.6.B) would be implemented to further reduce construction emissions. In addition, new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, as well as 4.6.B-N4 and 4.6.B-N5 (as listed under Impact 4.6.B) would also be implemented for future development to further reduce criteria pollutant emissions from operational activities. Because these mitigation measures reduce emissions associated with all future development projects within the unincorporated Riverside County area, the mitigation measures will also reduce the cumulative air quality impacts associated with all future development projects within the unincorporated Riverside County area, but not to a level of less than significant.

4. Finding on Significance for Impact 4.6.C

For the reasons presented above, implementation and compliance with the above-listed existing regulations, General Plan policies and existing Mitigation Measures 4.5.1A, 4.5.1B and 4.5.1C from EIR No. 441, as well as new Mitigation Measures 4.6.B-N1, 4.6.B-N2, 4.6.B-N3, 4.7.A-N1, 4.7.A-N2, 4.6.B-N4 and 4.6.B-N5 would reduce construction and operation-related air quality impacts. However, even with these mitigation measures, future construction and operational emissions would likely exceed SCAQMD and MDAQMD thresholds. As a result, the project would result in significant and unavoidable cumulative impacts with respect to the emission of criteria pollutants.

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 4.6.D – Expose Sensitive Receptors to Air Pollutants: Future development accommodated by GPA No. 960 would expose sensitive receptors to pollutant emissions from both construction and operational activities. The degree of impact would depend on the type of operation, distance from sensitive receptors and the level of activity at each site. However, as the exact location, timing and level of future development activities arising from GPA No. 960 is unforeseeable, specific impacts to sensitive receptors cannot be quantified. Thus, even after complying with regulations, existing policies and mitigation measures, as well as specific new mitigation measures, impacts cannot be guaranteed to be reduced to below applicable agency thresholds. Thus, this impact would be significant and unavoidable with respect to exposure of sensitive receptors.

1. Analysis of Impact 4.6.D

Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases. Sensitive receptors are those areas where sensitive populations may be for extended periods of time, resulting in sustained exposure to any pollutants present. As mentioned in Section 4.6.4 (Thresholds of Significance for Air Quality), localized significance thresholds (LSTs) have been developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction and operation of a project. Table 4.6-I shows the LST thresholds for a 5-acre site in SRA 24 in comparison to the

emissions estimates detailed under Impact 4.6.2 above. As can be seen from the table, this individual project would be less than significant for CO, NO_X and $PM_{2.5}$ regardless of the distance from the sensitive receptor, however for PM_{10} the construction activities would need to be a minimum of 50 meters from the nearest sensitive receptor in order to be less than significant.

Table 4.6-J shows the operational LST thresholds in comparison with the anticipated emissions from the theoretical project. As can be seen from the table, this individual project would be less than significant for all criteria pollutants regardless of the distance from the sensitive receptor. This is typical for residential land uses where onsite area sources do not emit substantial criteria pollutants. Industrial land uses where there are large stationary sources are more likely to emit levels of criteria pollutants above these thresholds.

As indicated previously, the thresholds identified in Table 4.6-J do not include the mobile sources associated with offsite traffic. However, onsite traffic must be considered, especially where diesel particulate matter is concerned such as with the operation of a warehouse with numerous loading docks and large volumes of truck traffic. In addition to criteria pollutants, localized emissions of toxic air contaminants (TAC) are also of concern with respect to sensitive receptors. Sources of TACs include diesel particulate matter from railroads, emissions from the combustion of airplane fuel, benzene emissions in close proximity to gasoline dispensing stations, dry cleaners and film processing services that use perchloroethylene, auto body shops due to various solvents, furniture manufacturers and repair facilities that use methylene chloride and print shops that use various solvents.

The primary source of TACs within the County of Riverside is from diesel-fueled trucks and other vehicles using the freeways and major roadways throughout the county. The CARB Guidance uses buffer zones to insulate sensitive receptors from sources of TACs. Through compliance with new Mitigation Measures 4.6.D-N1 and 4.6.D-N2, impacts from TACs on sensitive receptors would be minimized to the extent feasible, although residual impacts would remain significant and unavoidable.

Due to the programmatic nature of the project, detailed construction phasing, equipment and intensities cannot be foreseen with reasonable accuracy at this time. Further, the expected future development would occur across the entirety of Riverside County over roughly 50 years' time, making exact sizes and locations similarly unknowable at this time. Thus, site-specific impacts to sensitive receptors cannot be determined at present. It can, however, be assumed that various sizes and types of project would be developed. And, because of the increased density seen for the land uses and desired proximity of residential land uses to both transit and commercial centers, it can be assumed that both construction and operation of commercial and potentially industrial sources would be developed relatively close to sensitive receptors such as residences or schools. Thus, effects of project emissions on sensitive receptors throughout the county must be considered significant and unavoidable.

While this analysis cannot determine the concentration of air pollutants that sensitive receptors will be exposed to as a result of land use development within GPA No. 960, Tables 4.6-E and 4.6-F demonstrate that emissions of criteria pollutants substantially exceed the regulatory thresholds and because the regulatory thresholds are meant to protect the air quality within the project area, the exceedance of these thresholds demonstrates that substantial concentrations of air pollution may occur. In particular, ROG emissions, an ozone precursor, above the threshold may result in substantial concentrations of ozone which could affect sensitive receptors. The impact of ozone on sensitive receptors include breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue and immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increased daily hospital admission rates, as well as mortality have been reported. Also an increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

In addition, Tables 4.6-E and 4.6-F demonstrate that build out of GPA No. 960 will result in exceeding the regulatory thresholds for particulate matter (both PM_{10} and $PM_{2.5}$). Particulate matter exceeding the regulatory threshold may expose sensitive receptors to high concentrations of these pollutants. The impact of elevated concentrations of particulate matter on sensitive receptors include an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions. Daily fluctuations in $PM_{2.5}$ concentrations have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

2. Regulatory Compliance for Impact 4.6.D

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan policies and existing mitigation measures would lessen the adverse effects associated with emissions from future development.

a. Compliance With Federal, State and County Regulations

The California Air Resources Board has determined that exposure to toxic air contaminants can have significant health effects on sensitive receptors. CARB has recommended various buffer zones which are intended to reduce the potential exposure of sensitive receptors to safe levels. By implementing the proposed mitigation, the General Plan would be in compliance with the CARB regulations, at least on the individual project basis. Further, SCAQMD has implemented thresholds for criteria pollutants in order to minimize the exposure of sensitive receptors to impacts from construction and operational activities of new development. However, while individual developments may be able to successfully reduce emissions below these thresholds, they would also contribute incrementally to emissions within Riverside County as a whole. In the absence of site-specific analysis, such emissions must be assumed to be significant and avoidable.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would help reduce emission exposures to sensitive receptors. See Section 4.6.3.D for full text of each.

Policies AQ 1.1, 1.3, 1.4, 1.7, 1.10, 2.1-2.4, 4.6, 4.8-4.10, 15.1, 16.1, 16.3, 17.1, 17.3, 17.4, 17.6, 17.8 and 17.11: These policies promote the reduction of criteria pollutant emission through the development and enforcement of plans, policies, regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies and enhanced community involvement.

Policy AQ 5.1: This policy encourages the use of building operations to use and reuse materials and reduce the amount of energy used and waste generated during daily operations.

Policy AQ 4.5: This policy promotes the reduction of mobile source emissions through employer and employee education and implementation of transportation demand measures that would reduce vehicle miles traveled.

Policies AQ 17.9 and 17.10: These policies promote the reduction of criteria pollutants through the use of energy efficiency measures and site design, including use of alternate energy sources for vehicles, heating and cooling.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed policies of the Riverside County General Plan would help reduce pollutant concentrations near sensitive receptors. While these proposed air quality policies were introduced to specifically address greenhouse gas emissions, these policies would also provide a reduction in criteria pollutant emissions and so are included herein. See Section 4.6.3.D for full text of each.

Policy AQ 4.1: This policy encourages the use of building operations to use and reuse materials and reduce the amount of energy used and waste generated during daily operations.

Policy AQ 4.7: This policy promotes the reduction of criteria pollutant emission through the development and enforcement of plans, policies and regulations and fees. These policies limit the allowable levels of emissions, encourage the use of alternate sources and increased efficiencies and enhanced community involvement.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.5.1A, 4.5.1B and 4.5.1C were imposed to reduce impacts to air quality. These measures, as listed under Impact 4.6.B, above, are also applicable to this impact. They would lessen impacts to air quality by minimizing fugitive dust during construction and reducing pollution resulting from construction equipment.

3. Additional Project-Specific Mitigation for Impact 4.6.D

Despite all of the above measures to lessen impacts to air quality, additional project-specific mitigation measures would be necessary to further avoid, reduce or minimize impacts. For future development accommodated by GPA No. 960 that exceeds regulatory thresholds for construction or operational emissions (even after the inclusion of existing policies and regulations), the following new Mitigation Measures 4.6.D-N1 and 4.6.D-N2 shall be implemented. Additionally, implementation of new Mitigation Measures 4.6.B-N1, 4.6.B-N2 and 4.6.B-N3 (as listed under impact 4.6.B) would further reduce construction or operational emissions, which in turn will reduce the concentration of air pollutants sensitive receptors will be exposed to within the county.

NEW Mitigation Measure 4.6.D-N1: New developments shall include the following requirements to reduce emissions associated with toxic air contaminants (TACs):

a. Electrical outlets shall be included in the building design of any loading docks to allow use by refrigerated delivery trucks. Signage shall also be installed, instructing commercial vehicles to limit idling times to five minutes or less. If loading and/or unloading of perishable goods would occur for more than five minutes and continual refrigeration is required, all refrigerated delivery trucks shall use the electrical outlets to continue powering the truck refrigeration units when the delivery truck engine is turned off.

b. Electrical outlets shall be installed on the exterior of new structures for use with electrical landscaping equipment. Further, the property owner(s) shall ensure that the hired landscape companies use electric-powered equipment where available to a minimum of 20% of the equipment used.

NEW Mitigation Measure 4.6.D-N2: The County of Riverside shall require minimum distances between potentially incompatible land uses, as described below, unless a project-specific evaluation of human health risks defines, quantifies and reduces the potential incremental health risks through site design or the implementation of additional reduction measures to levels below applicable standards. (e.g., standards recommended or required by CARB, SCAQMD or MDAQMD).

SCAQMD Jurisdiction:

a. Proposed dry cleaners and film processing services that use perchloroethylene must be sited at least 500 feet from existing sensitive land uses including residential, schools, day care facilities, congregate care facilities, hospitals or other places of long-term residency for people.

b. Proposed auto body repair services shall be sited at least 500 feet from existing sensitive land uses.

c. Proposed gasoline dispensing stations with an annual throughout of less than 3.6 million gallons shall be sited at least 50 feet from existing sensitive land uses. Proposed gasoline dispensing stations with an annual throughput at or above 3.6 million gallons shall be sited at least 300 feet from existing sensitive land uses.

d. Other proposed sources of TACs including furniture manufacturing and repair services that use methylene chloride or other solvents identified as a TAC shall be sited at least 300 feet from existing sensitive land uses.

e. Avoid siting distribution centers that accommodate more than 100 truck trips per day (or more than 40 truck trips operating transport refrigeration units per day, or where transportation refrigeration units operate more than 300 hours per week) within 1,000 feet of existing sensitive land uses.

f. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more.

g. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners and film processing services that use perchloroethylene.

h. Proposed sensitive land uses shall be sited at least 500 feet from existing auto body repair services.

i. Proposed sensitive land uses shall be sited at least 50 feet from existing gasoline dispensing stations with an annual throughput of less than 3.6 million gallons and 300 feet from existing gasoline dispensing stations with an annual throughput at or above 3.6 million gallons.

j. Proposed sensitive land uses shall be sited at least 300 feet from existing land uses that use methylene chloride or other solvents identified as a TAC.

k. Proposed sensitive land uses shall be sited at least 1,000 feet from existing distribution centers that accommodate more than 100 trucks per day, accommodate more than 40 trucks per day with transportation refrigeration units, or where transportation refrigeration units operate more than 300 hours per week.

MDAQMD Jurisdiction:

a. Proposed industrial projects must be sited at least 1,000 feet from existing sensitive land uses.

b. Proposed distribution centers with 40 or more truck per day shall be sited at least 1,000 feet from existing sensitive land uses.

c. Proposed dry cleaner using perchloroethylene shall be sited at least 500 feet from existing sensitive land uses.

d. Proposed gasoline dispensing facility shall be sited at least 300 feet from existing sensitive land uses.

e. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more.

f. Proposed sensitive land uses shall be sited at least 1,000 feet from existing industrial facilities or distribution centers with more than 40 trucks per day.

g. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners using perchloroethylene.

h. Proposed sensitive land uses shall be sited at least 300 feet from existing gasoline dispensing stations.

4. Finding on Significance for Impact 4.6.D

The existing Riverside County ordinances, policies and programs to implement and comply with SCAQMD and MDAQMD rules would reduce construction and operation related impacts. However, the project would result in the future development of numerous projects each contributing incrementally to air emissions affecting sensitive receptors. Thus, it is possible that the project would result in cumulatively significant impacts to sensitive receptors, even if individual projects were each less than significant. This is particularly likely since none of the measures herein would prevent multiple development projects from being constructed concurrently within close proximity to sensitive receptors in such a manner as to cause substantial concentrations within the area. Further, neither the amount of construction occurring nor the exact location within the county is foreseeable and, as such, it cannot be determined if the resultant construction emissions could be adequately controlled or reduced to below regulatory thresholds. Without such information, it is not possible to conclude that air pollutant emissions resulting from construction activities would be adequately reduced to the point that sensitive receptors are not exposed to substantial concentrations of air pollutants, and thus a significant and unavoidable impact may result.

Existing regulations and ordinances would reduce operation-related impacts by reducing air pollutant emissions from stationary and mobile sources. Even with the implementation of new project-specific mitigation measures, cumulative operational emissions resulting from future development would likely exceed both the SCAQMD and MDAQMD thresholds. Therefore, the implementation of GPA No. 960 would result in significant and unavoidable impacts to sensitive receptors.

E. Would the project create objectionable odors affecting a substantial number of people?

Impact 4.6.E – Cause or Expose People to Objectionable Odors: Future development accommodated by the proposed project would not create objectionable odors that would affect a substantial number of people. Additionally, compliance with existing regulatory programs and General Plan policies, as well as new Mitigation Measures 4.6.E-N1, 4.6.E-N2 and 4.6.E-N3 would further reduce objectionable odors. For these reasons odor impacts are less than significant.

1. Analysis of Impact 4.6.E

Odors emanate from trace substances within the air that can be perceived by the sense of smell. This analysis focuses on objectionable odors. Although almost any land use has the potential to emit odors, some land uses are more likely to produce odors because of their operations. Land uses known to have odor-emitting potential

include: agriculture, chemical plants, composting operations, dairies, fiberglass-molding operations, landfills, refineries, rendering plants, rail yards and wastewater treatment plants.

Construction activities associated with project implementation would generate airborne odors as a result of operation of construction vehicles (i.e., diesel exhaust), paving with hot asphalt and the application of architectural coatings. Because of the volatile nature of odor compounds, they either react quickly in the atmosphere or are diluted as they are carried away from the odor source. Therefore, construction odors are generally isolated and limited to the duration of construction and its immediate site vicinity. As such, they would not affect a substantial number of people as impacts related to these odors are limited to the number of people living and working nearby the source. While some components of asphalt and diesel emissions are considered toxic air contaminants, construction activities do not generally cause significant odor impacts because of the duration of exposure.

Because of the specific uses that would be accommodated by GPA No. 960, there is the potential for odor emissions from new development operations. While none of the land uses known to emit odors are specifically planned as part of GPA No. 960, neither are they specifically prohibited or restricted. For example, as development occurs through the county it is reasonable to assume that additional wastewater treatment facilities would be needed.

Likewise, although new agricultural land uses are not specifically planned as part of GPA No. 960, the conversion of existing agricultural land uses to other types of land use (for example, the Northeast Business Park Overlay) would result in the development of vacant agricultural lands; possibly including those in the vicinity of operating dairies. In such locations, there would be a substantial potential for airborne odors to emanate from the existing dairies. Likewise, other agricultural odors, up to and including from manures or other fertilizers could also result in odors that affect the newly developed areas. And, while agricultural odors typically do not pose a health risk, they can be still be strong enough to prove a nuisance. Because there is the potential for development of odor-emitting uses as a result of GPA No. 960, each individual development project proposed would be required to evaluate impacts to their surroundings with respect to odors. By evaluating potential odor impacts early in the development process, odor sources can be situated away from sensitive receptors or reduced to a level where odors are not objectionable through similar such site-design measures. (See new mitigation measures, below).

2. Regulatory Compliance for Impact 4.6.E

Compliance with existing regulatory requirements and General Plan policies would reduce odor impacts to less than significant levels with respect to sensitive receptors.

a. Compliance With Federal, State and County Regulations

SCAQMD Rule 402 (Nuisance), Rule 410 (odors from transfer stations and material recovery stations) and Rule 1179 (Public owned treatment works operations) place conditions and compliance measures for odor emissions from the identified sources in order to reduce exposure to the surrounding area.

Riverside County Ordinance No. 706, as detailed under Section 4.6.3, would reduce motor vehicle emissions of criteria pollutants through the reduction of vehicle miles traveled. A reduction in motor vehicle emissions would proportionally result in a reduction in emissions from diesel combustion engines, which are responsible for the most noticeable of the mobile source odors.

b. Compliance with Existing General Plan Policies

The implementation following existing policies of the Riverside County General Plan would further contribute to complying with applicable air quality plans, however the anticipated contribution of each policy is not quantifiable. See Section 4.6.3.D for full text of each of these policies.

Policies AQ 1.5, 1.7, 16.3 and 17.7-17.10: These policies would reduce potential odor impacts from vehicles by reducing operating time or switching from diesel combustion to alternative fuels.

Policies AQ 2.1-2.4: These policies would reduce potential odor impacts through the use of distance, site design and barriers between sources and receptors.

Policy AQ 4.6: This policy would reduce the potential for odor impacts on surrounding uses by requiring compliance with air district regulations on siting odor-emitting uses.

Policy AQ 5.1: This policy would reduce potential odor impacts from landfills by emphasizing recycling. Less waste being sent to landfills, would mean less decomposition and less associated odors.

3. Additional Project-Specific Mitigation for Impact 4.6.E

Additional project-specific mitigation measures would further avoid, reduce or minimize odor impacts. New Mitigation Measures 4.6.E-N1, 4.6.E-N2 and 4.6.E-N3 would lessen potential odor impacts by affecting the location and design of odor-generating uses. Implementation of these mitigation measures would ensure that project impacts from odor sources are mitigated to less than significant.

NEW Mitigation Measure 4.6.E-N1: Locate potential new odor sources predominantly down- or cross-wind from existing sensitive receptors and potential new sensitive receptors predominantly upwind from existing odor sources. As indicated by the "Right-to-Farm" ordinance, agricultural uses that have been operated for more than three years cannot be re-classified as a public or private nuisance by new development.

NEW Mitigation Measure 4.6.E-N2: Maintain an adequate buffer between potential new odor sources and receptors such that emitted odors are dissipated before reaching the receptors (minimum of 500 feet depending on odor source). As indicated by the "right-to-farm" ordinance, agricultural uses that have been operated for more than three years cannot be re-classified as a public or private nuisance by new development.

NEW Mitigation Measure 4.6.E-N3: Design odor-emitting facilities such that odor emitters are located as far from potential receptors as possible. Also, balance stack heights to provide the maximum dispersion of odor between the stack and the nearest sensitive receptor.

4. Finding on Significance for Impact 4.6.E

As discussed above, implementation of and compliance with the above-listed regulatory programs, as well as new Mitigation Measures 4.6.E-N1, 4.6.E-N2 and 4.6.E-N3, would ensure that future development accommodated by GPA No. 960 would have less than significant odor impacts.

4.6.7 Significance After Mitigation for Air Quality

Implementation of, and compliance with, the above regulations, policies and mitigation measures (existing and proposed) would ensure that future development accommodated by the proposed project, GPA No. 960, would reduce obstructions to and increase compliance with applicable air quality management plans. Compliance with existing mitigation measures from EIR No. 441 would also ensure that future development activities minimize or avoid significant impacts to sensitive receptors from toxic air contaminants and odors. However, even with all of the above measures, future development would likely result in significant and unavoidable air quality impacts, particularly due to cumulatively significant emissions. Significant impacts would result from construction and operational emissions of criteria pollutants, associated violations of air quality standards or thresholds and effects to sensitive receptors, both locally and regionally. Even where individual future development projects were successfully mitigated to less than significant levels, they would still be liable to contribute incrementally to cumulatively significant air quality impacts. Because there is no feasible mechanism for the County of Riverside to control individual projects with respect to their incremental pollutant contributions, impacts to air quality would remain significant and unavoidable.

Health Impacts from Significant Emissions of Criteria Pollutants

Air quality impacts occur at a cumulative level, meaning that the concentration of air pollution in the air is the result of emissions from many sources and continued exposure to air pollution over many years. Therefore, health effects are linked to the cumulative emissions of existing and future criteria pollutant sources. Regional criteria pollutant modeling cannot accurately capture the project-level effects on ambient pollutant concentrations beyond the uncertainty level of the modeling because the emissions from typical projects analyzed under CEQA are relatively small and are localized rather than spread out over the entire region. The following table shows a comparison of project related emissions to regional emissions for each of the air basins. As shown, even a project of this size is a relatively low percentage of the total emissions within the current air basin. NO_X emissions are reduced in both air basins, as is CO in the SCAB.

	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
South Coast Air Basin (tons/day)						
GPA	-3.17	-4.83	7.115	0.18	27.21	5.285
SCAB	2271.8	512	466.4	174.6	153.6	68.4
% of basin	-0.14%	-0.94%	1.53%	0.10%	17.71%	7.73%
Mojave Desert Air Basin (tons/day)						
GPA	3.10	-2.25	5.80	0.11	18.27	3.76
MDAB	309.2	173.8	65.5	7.7	131.2	36.1
% of basin	1.00%	-1.30%	8.85%	1.43%	13.92%	10.43%

Source: California Air Resources Board, Estimated Emissions Almanac Emissions Projections Data. Accessed 9/15/2014 from http://www.arb.ca.gov/app/emsinv/2013/emssumcat.php

As is shown, there will be an increase in some criteria pollutants and while more criteria pollutant emissions will contribute to greater health effects regionally, specifically attributing the projects emissions to a defined quantitative or geographic health effect is beyond the ability of the current modeling tools. The following is a qualitative discussion correlating each air pollutant emissions level resulting from GPA No. 960 with potential health impacts that may occur from exposure to increased regional levels of these air pollutants.

Ozone: *Ozone is the result of a chemical reaction between precursors such as NO_X and ROGs. Short-term exposure (lasting for a few hours) can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of*

lung tissue and immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increased daily hospital admission rates, as well as mortality have been reported. Also an increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Buildout of GPA No. 960 will not directly emit ozone. However, buildout of GPA No. 960 will ad significant concentrations of ROGs to the atmosphere, which when combined in the presence of sunlight can result in increased ozone concentrations. Currently all three air basins are in severe non attainment for ozone. Buildout of GPA No. 960 has the potential to indirectly result in increased concentrations of Ozone and may result in helath impacts including breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue and immunological changes. Elevated ozone levels are associated with increased school absences. Because this impact may adversely affect the health of individuals, the impact is considered Significant and Unavoidable.

Reactive Organic Gases: *Health effects resulting from exposure to the various forms of ROGs range from minor and temporary irritation of the mucous membranes to death. As an example, formaldehyde is an ROG and many building materials such as paints, adhesives, wall boards, and ceiling tiles slowly emit formaldehyde, which irritates the mucous membranes and can make a person irritated and uncomfortable when indoor concentrations of formaldehyde build up. By contrast, brief exposure (as little as ten minutes) to high concentrations of benzene (another form of ROG) can cause death. Short-term exposure to lower concentrations of benzene can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion and unconsciousness; in most cases people will stop feeling these effects when they are no longer exposed. People who inhale benzene for long periods of time (months or years) at high enough levels may experience harmful effects in the tissues that form blood cells, especially the bone marrow. Long-term exposure to benzene can cause various forms a cancer.*

Emissions of ROGs resulting from buildout of GPA No. 960 exceed the thresholds established by the SCAQMD and the MDAQMD. Those thresholds are based upon the definition of a major source in the Federal Clean Air Act. Major sources of ROGs have the potential to adversely impact the air basin with higher concentrations of this pollutant. The amount of ROGs emitted per day may potentially contribute to long term exposure of benzene and other ROGs which is known to cause cancer. Because this impact may adversely affect the health of individuals, the impact is considered Significant and Unavoidable.

Nitrogen Dioxide: *Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis or emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups*

With the mitigation measures in place implementation of GPA No. 960 will reduce nitrogen dioxide emissions compared to the no project condition and, therefore, modestly improve ambient air quality with regard to this air pollutant. Therefore, GPA No. 960 will not impact the health of individuals through emissions of nitrogen dioxide. Impacts are less than significant for this pollutant.

Carbon Monoxide: *Inhaled CO has no direct toxic effect on the lungs but effects tissues by interfering with oxygen transport and by competing with oxygen in combining with hemoglobin. Hence, individuals that have conditions that restrict oxygen intake can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels and patients with chronic hypoxemia (oxygen deficiency), such as that seen at high altitudes. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects of CO inhalation include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart.*

Emissions of CO resulting from buildout of GPA No. 960 exceed the thresholds established by the MDAQMD for the Mojave Air Basin. The threshold is based upon the definition of a major source in the Federal Clean Air Act. Major sources of CO have the potential to adversely impact the air basin with higher concentrations of this pollutant. A CO Hotspot analysis determined that the concentration of CO will not exceed the ambient air quality standards within the three air basins. Therefore, the impact will not

adversely affect the health of individuals. However, because the emissions exceed the thresholds for the Mojave Air Basin the impact is considered Significant and Unavoidable.

Particulate Matter: *A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life span and an increased mortality from lung cancer.*

Daily fluctuations in $PM_{2.5}$ concentrations have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Emissions of PM_{10} and $PM_{2.5}$ resulting from buildout of GPA No. 960 exceed the thresholds established by the SCAQMD and the MDAQMD. Those thresholds are based upon the definition of a major source in the Federal Clean Air Act. Major sources of particulates have the potential to adversely impact the air basin with higher concentrations of this pollutant. All three air basins are in non attainment for both PM_{10} and $PM_{2.5}$. The amount of both PM_{10} and $PM_{2.5}$ emitted per day may potentially cause respiratory infections, number and severity of asthma attacks, and number of hospital admissions. Because this impact may contribute to the non attainment status of all three air basins and adversely affect the health of individuals, the impact is considered Significant and Unavoidable.

Sulfur Dioxide: *The effects of sulfate exposure at levels above the standard include the aggravation of asthmatic symptoms, an increased risk of cardio-pulmonary disease and a decrease in respiratory function. A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics. In asthmatics, increased lung resistance as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage and sloughing off of cells lining the respiratory tract.*

Emissions of Sulfur Dioxide resulting from buildout of GPA No. 960 exceed the thresholds established by the SCAQMD and the MDAQMD. Those thresholds are based upon the definition of a major source in the Federal Clean Air Act. Major sources of Sulfur Dioxide have the potential to adversely impact the air basin with higher concentrations of this pollutant. The amount of Sulfur Dioxide emitted per day may potentially cause aggravation of asthmatic symptoms including airway constriction, but given the current very low concentrations of Sulfur Dioxide in the atmosphere, future concentrations as a result of GPA No. 960 are unlikely to exceed the ambient air quality standards set of this pollutant. The ambient air quality standard is set to protect health. As such exposure levels in all three air basins will remain low and impacts to health will be restricted to mild symptoms of asthmatics and other individuals extremely sensitive to air quality impacts. Because this impact may adversely affect the health of some individuals, the impact is considered Significant and Unavoidable.

Section 4.7

Greenhouse Gases

Section 4.7 Greenhouse Gases

4.7.1 Introduction

The State of California recognizes that anthropogenic (human-caused) greenhouse gas (GHG) emissions are contributing to changes in the global climate and that such changes are having and will have adverse effects on the environment, the economy and public health. These are cumulative effects of past, present and future actions worldwide. While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHGs emitted from a particular source or location. Thus, when considering a project's contribution to impacts from climate change, it is possible to examine the quantity of GHG emissions that would be emitted either directly from project sources or indirectly from other sources, such as production of electricity as a result of activities or land use development in the county. This section assesses the potential impacts of GHG emissions that could result from new land use development within unincorporated Riverside County as authorized pursuant to the plans and policies of the General Plan, as updated per this project, proposed GPA No. 960. The updates proposed in GPA No. 960 include extensive revisions to the existing General Plan Air Quality Element to address GHGs in Riverside County.

GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities, primarily through the combustion of fossil fuels. The State of California has been at the forefront of developing solutions to address global climate change and reduce anthropogenic GHG emissions.

State law defines GHGs to include the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (State CEQA Guidelines, Section 15364.5 and Health and Safety Code, Section 38505(g)). The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. Because GHGs have variable potencies, a common metric of "carbon dioxide equivalents" (CO_2e) is used to report their combined potency. The potency each GHG has in the atmosphere is measured as a combination of the volume of its emissions and its 'global warming potential' (GWP). GWP is the potential of a gas or aerosol to trap heat in the atmosphere and is expressed as a function of the potency with respect to the same mass of CO_2. Methane, for example has a GWP of 21, while nitrous oxide has a GWP of 310. By multiplying the amount in metric tons of each individual gas by their respective GWP, all GHGs can be reported in the common unit of metric tons of CO_2e (MT CO_2e). Note, one metric ton (MT) equals 1,000 kilograms or 2,204 pounds; one 'short ton' is 2,000 pounds.

Due to the successful global bans on chlorofluorocarbons (primarily used as refrigerants, aerosol propellants and cleaning solvents), Riverside County does not generate significant emissions of these GHGs. The same has occurred for other synthesized gases, such as HFCs and carbon tetrafluoride (CF_4), which have been banned and

are no longer available on the market. Because of the ban, Riverside County will not generate additional emissions of these GHGs and therefore, they are not considered any further in this document. SF_6 is another GHG with a high GWP (23,900 times that of CO_2); it is mainly used in the electric switchgear of high voltage electric transmission lines and medical use in retinal detachment surgery and ultrasound imaging. These are the only two uses of SF_6 in Riverside County. According to the Local Government Operations Protocol (LGOP) published jointly by the California Air Resources Board (CARB), the California Climate Action Registry (CCAR) and The Climate Registry (TCR) for quantification and reporting of GHG emissions inventories by local governments, the sources of SF_6 in Riverside County are defined as a Scope 3 emission source not directly or indirectly attributable to the Riverside County operations or the community within Riverside County. This means that the County of Riverside has little control over the emission source and is not considered necessary within Riverside County's community-wide GHG emissions inventory. Therefore, it is not considered further in this document.

4.7.2 Existing Environmental Setting – Greenhouse Gases

A. Data Types and Sources

Before establishing policies to reduce GHGs, it was necessary to determine the full extent of the issue's effects within Riverside County. Thus, in order to establish a GHG emissions baseline that is currently being emitted into the environment, an inventory of GHG emissions within unincorporated Riverside County and the county government operations was conducted. Note that the GHG emission inventories for Riverside County include emissions sources within unincorporated Riverside County and activities that the County of Riverside has direct or indirect jurisdictional control. The GHG emissions inventories do not include sources within the incorporated cities because these emission sources are under the jurisdictional control of the respective municipal government that those emissions sources reside within. The following GHG emissions inventory identifies and categorizes the major sources and quantities of GHG emissions being produced by Riverside County residents, businesses and government (County of Riverside) operations currently in Riverside County. Using historic emissions and business-as-usual (BAU) practices as the basis, the inventory includes GHG emissions from 2008 (baseline) and projected for 2020 and beyond. The year 2008 was used as the baseline to inventory emissions for existing conditions as it was the most recent year with complete data. The methodology and data sources used to estimate the various types of existing (2008) GHG emissions are described here. The results of modeled estimates for 2035, including projected emissions for the year 2020 (both BAU and reduced scenarios), are described under "Effects" (Section 4.7.4).

In terms of land use, GHG emissions are predicted based on the types of activities associated with the given use and may span a number of sectors. For example, a single-family home would be associated with GHG emissions from transportation (commuting to work, say), waste generation (trash and lawn clippings) and energy consumption (electricity to run appliances and lights, natural gas to heat the house and cook, etc.). Accordingly, the following subsection describes the 2008 existing GHG emissions inventory for Riverside County and the methodology used to calculate emissions from the following categories: electricity, natural gas, solid waste, area sources, water-related emissions, agriculture and transportation.

1. Energy

The two main energy sources used to provide power on most developed sites are electricity and natural gas. Both these energy sources can result in greenhouse gas emissions. Because natural gas use involves combustion within

the equipment itself, it is a direct source of greenhouse gas emissions on a site. Electricity is sometimes generated directly on a site through alternative means, such as solar or wind turbines. Most commonly, however, it is generated offsite by a utility provider and when that generation involves the combustion of a fossil fuel (such as coal or natural gas, for example, which is burned to generate steam to run turbines), the result is the indirect production of greenhouse gases. Estimates for Riverside County usage of these two resources are as follows below. It should be noted that these values are countywide estimates obtained directly from major utility providers. They are not meant to be synonymous with the data used in Section 4.10 (Energy) later in this document.

Electricity: Emissions of CO_2, CH_4 and N_2O within Riverside County result from the use of electricity. Annual electricity usage in 2008, obtained from Southern California Edison (SCE) and the Imperial Irrigation District (IID), the two major commercial electricity providers serving Riverside County territory, was used in determining community-wide electricity consumption and generation emission estimates for the existing inventory.

SCE and IID provide electricity generated via a variety of sources, including combustion of natural gas and coal, nuclear, large hydroelectric and renewable sources (solar, wind, etc.). Each of these sources of electricity emits different amounts of GHGs. Therefore, emissions from electricity were determined by multiplying annual usage in megawatt hours per year (MWh/year) by the SCE emission factors appropriate to the inventory year for CO_2, CH_4 and N_2O as reported in the EPA's Emissions and Generation Resource Integrated Database (eGRID) (U.S. EPA 2007).

Two gas-to-energy facilities are located in unincorporated Riverside County, one at the Badlands Landfill and one at the El Sobrante Landfill. These facilities take the methane collected from the decomposition of solid waste and convert it to electricity. The generation of electricity from these alternative generation sources results in emission reductions. Therefore, the operation of these facilities offset electrical consumption within the inventory by approximately 13,016 megawatt hours to account for the electricity generated by these facilities in 2008. Concerning the El Sobrante Landfill, the County of Riverside cannot claim all of the benefits associated with the gas-to-energy facility at the landfill. The El Sobrante landfill is privately owned and operated. The majority of the waste disposed of at the landfill is generated from outside of Riverside County boundaries. The County of Riverside collects fees and has indirect control over the waste collected from within Riverside County at the El Sobrante Landfill; however, the County of Riverside does not have control over the landfill waste collected by the private operator from outside Riverside County boundaries. Therefore, the benefits from cogeneration are limited to the portion of methane associated with waste collected within Riverside County. As of the end of 2008, approximately 49 percent of the total waste deposited in the El Sobrante landfill originated within Riverside County with the remaining 51 percent originating outside of Riverside County. The 2008 baseline inventory calculates the benefit of the El Sobrante cogeneration based on the portion of waste collected within Riverside County. The contractual split of waste at El Sobrante Landfill was updated after 2008 such that 40 percent of the waste will come from within Riverside County with the remaining 60 percent coming from outside Riverside County. Cogeneration benefits at the El Sobrante Landfill for years 2020 and 2035 reflect the contractual split of waste.

Natural Gas: The residents and businesses of Riverside County emit GHGs from the combustion of natural gas, most often used for space heating and cooling. To determine annual GHG emissions from natural gas combustion, the annual natural gas usage for the unincorporated areas of Riverside County in million British Thermal Units (MMBTUs) was multiplied by the respective emissions factors for CO2, CH4 and N2O. Existing inventory consumption levels were obtained from the Southern California Gas Company, which serves all of the fixed-line connections and mains within unincorporated Riverside County.

2. Solid Waste

Riverside County Waste Management Department is responsible for managing Riverside County's landfills, including both active and closed landfills. Table 4.7-A (Existing Riverside County Landfills), below, provides information on Riverside County's active landfills, including planned closure year, the year the landfill-gas system was installed, the in-place tonnage at the end of 2008 and the amount of waste disposed at each landfill in 2008. Table 4.7-B (Closed Riverside County Landfills) provides information for the closed landfills managed by Riverside County including closure year, the year the landfill-gas system was installed and the in-place tonnage. All of the listed landfills are managed by the County of Riverside with the exception of El Sobrante, which is privately owned and operated. As discussed under Electricity, the County of Riverside collects fees and has control over the portion of the El Sobrante landfill waste collected from within Riverside County. Therefore, the emissions associated with solid waste collected within Riverside County are calculated in Riverside County's baseline inventory of GHG emissions.

Emissions from solid waste result from three different waste-related sources of emissions: transportation from its source to the landfill, operation of the equipment used at the landfill and the fugitive emissions from waste decomposition. Emissions from the transportation of solid waste is determined based on the average number of miles traveled by each truck and the CO_2, CH_4 and N_2O emissions generated per mile traveled. Unlike the rest of these emissions, the transportation-related emissions are accounted for under "Transportation" in the inventory described below. The emissions from landfill equipment are dependent upon the type of equipment, fuel use and duration of use. Emissions from waste decomposition at both active and inactive landfills operated by Riverside County are included in the solid waste category of the Riverside County GHG inventory.

Table 4.7-A: Existing Riverside County Landfills

Landfill Name (Scheduled Closure Year[2])	Year LFG[1] System Installed	In-place Waste (At End of 2008) (in tons)[3]	Waste Disposed in 2008 (in tons)[3]
Badlands (2024)	2001	8,389,810	582,400
Blythe (2047)	1998	609,370	15,180
Desert Center (2018)	---	40,430	15
El Sobrante[4] (Private) (2045)	1989	22,127,560	960,360
Lamb Canyon (2021)	2001	6,376,350	688,140
Mecca II (2037)	---	228,090	10
Oasis (2021)	---	176,410	1,480

Footnotes:
1. LFG = landfill gas.
2. Estimated years per Riverside County Waste Management Dept.'s "Site Info Landfill Operation Database," 2010.
3. All values rounded to nearest 10.
4. Waste Disposed in 2008 associated with the El Sobrante landfill represents only the in-county portion (or approximately 49 percent) of the total waste disposed at this landfill.

Source: Riverside County Waste Management Dept., Landfill Information, 2010.

Table 4.7-B: Closed Riverside County Landfills

Landfill Name (Closure Year)	Year LFG System Installed	In-place Tonnage*
Coachella (1997)	2001	3,237,850
Corona (1986)	1988	3,200,000
Double Butte (1994)	1997	1,977,460
Edom Hill (1997)	2008	7,323,780
Elsinore (1965)	1993	1,140,000
Highgrove (1998)	1998	3,496,430
Mead Valley (1997)	1995	2,312,840
West Riverside (1993)	1988	1,260,000

*All values rounded to nearest 10. LFG = landfill gas.

Source: Riverside County Waste Management Dept., Landfill Information, 2010.

Emissions from the equipment used at the landfills were calculated from total fuel use by the equipment and the emission factors for CO_2, CH_4 and N_2O, as determined from CARB off-road mobile source emission factors. Fugitive methane emissions from the decomposition of solid waste (typically buried) are calculated based on the annual waste generation multiplied by the applicable emission factors for waste production for CH_4. In Riverside County, all of the landfills have such landfill gas collection systems with the exception of Desert Center, Mecca II and Oasis landfills. These three landfills are the smallest in Riverside County with limited waste disposal and represent only 0.07% (444,923 tons) of the total in-place waste (61,896,358 tons) at the end of 2008. Although CO_2 is also a by-product of organic waste decomposition, the United States Environmental Protection Agency (U.S. EPA) considers these emissions to be natural and not anthropogenic; therefore they are not included in the emissions inventory. Therefore, CH_4 is the only fugitive GHG that is analyzed from the decomposition of organic waste in landfill operations. Organic waste includes yard and food waste while non-organic waste includes fossil fuel-derived products, such as plastic and rubber. Nitrous oxide is not a by-product of decomposition and therefore no fugitive emissions of nitrous oxide are anticipated or calculated from solid waste sources.

3. Area Source Emissions

The following two categories of emissions, landscaping equipment and woodburning emissions, are included in the "Area Source" category, as follows. The emissions associated with landscaping activities and woodburning were calculated using URBEMIS2007. URBEMIS2007 is a computer software package used for modeling projected emissions of air quality pollutants, including carbon dioxide.

Landscaping Emissions: Emissions of CO_2, CH_4 and N_2O are generated by the use of landscape equipment that runs on gasoline. CO_2 emissions were determined directly through URBEMIS2007 for the existing (2008) inventory. From the CO_2 emissions, the approximate number of gallons of gasoline consumed by landscape equipment use was calculated (CARB 2007e). This number was then multiplied by emission factors according to the General Reporting Protocol, version 3.1 (CCAR 2010) to derive both CH_4 and N_2O emissions.

Woodburning Emissions: Direct CO_2 emissions are produced from the burning of wood in wood stoves and fireplaces. Natural gas-fired stoves, barbecues and other heating devices are not included in this subcategory; they have already been accounted for under "Energy." CO_2, CH_4 and N_2O emissions from wood stoves and fireplaces are calculated based on the percentage of residential units using each type of hearth and the California average amount of wood burned per unit value provided by the EIA "2005 Residential Energy Consumption Survey." The emission coefficients used are taken from the EPA's AP-42 document (U.S. EPA 1985).

4. Water-Related Emissions

Water-related emissions included in this section are indirectly produced as a result of electrical consumption to pump and treat water imported from outside Riverside County. There are many water agencies that operate in Riverside County providing both potable and non-potable water to customers in the unincorporated areas. The six major water importers/wholesalers serving Riverside County are: Coachella Valley Water District, Desert Water Agency, Eastern Municipal Water District, Western Municipal Water District, Palo Verde Irrigation District and San Gorgonio Pass Water Agency. However, the Palo Verde Irrigation District does not serve potable water delivery.

Serving EMWD and WMWD, the Metropolitan Water District of Southern California (MWD) holds the rights to a large portion of the State Water Project supply (the system of aqueducts and canals that distributes water from the Sacramento Bay-San Joaquin Delta across the state) and is the largest water wholesaler in California. The San

Gorgonio Pass Water Agency also gets its water from the State Water Project. The water agencies in the eastern portion of Riverside County predominantly get their water from the Colorado River. See Section 4.19 (Water Resources) for full details.

Within Riverside County, each agency's water supply comes from a mixture of the following sources: the Bay-Delta via the State Water Project, the Colorado River via a system of regional canals local groundwater, recycled water and local surface water. The GHG emissions associated with water use come from the energy used to collect, treat, convey and distribute the water. Thus, water imported through the State Water Project and from the Colorado River have higher GHG emissions associated with them, when compared to local water sources, as these distant sources require more energy-intensive transport to reach Riverside County.

Water Supply: This category, "Water Supply," addresses the GHG emissions resulting from energy used to pump/transport these imported sources of water from their sources to Riverside County and to treat the water. This separate category is necessary, as the energy used is accrued across a varied of providers and is not included in the data collected from SCE and IID. For local water sources, the data collected from SCE and IID include associated electricity usage and, hence GHG emissions, are included under the "Electricity" category described above.

Wastewater Treatment: As with the local water supply described above, GHG emissions associated with wastewater (that is, pumping and treatment of sewage, urban runoff and, in some cases, industrial or manufacturing runoff) are based on the electricity needed to pump and treat the wastewater. The Riverside County GHG inventory measures the GHG emissions from the transport and treatment of the wastewater as a separate sub-category within the inventory analysis.

5. Agricultural Emissions

Riverside County encompasses a large amount of agricultural land with a variety of cultivation uses. The most prominent uses are field and seed crops, including primarily alfalfa and wheat, as well as irrigated pasturelands and rangelands (for grazing). Other uses include orchards, groves, vineyards, truck crops and livestock (including poultry). Agricultural procedures contribute directly to emissions of greenhouse gases through a variety of processes. Assessment of non-carbon-dioxide emissions are from the following source categories: enteric fermentation in domestic livestock, livestock manure management, crop cultivation and field burning of agricultural residues.

Livestock emissions are divided into two categories based on the emissions source: enteric fermentation and manure management. Enteric fermentation is defined as a fermentation process that takes place in the stomach of ruminant animals, such as cows, sheep and goats. This process produces methane that is released through belching and flatulence. Manure management is the process of gathering and disposing of manure generated by livestock. Management practices vary by type of livestock, but in the case of dairy cows, manure is often collected and stored in lagoons. As the manure breaks down, methane is released.

Methane (CH_4) and N_2O are the primary greenhouse gases emitted from crop cultivation and associated activities. Field burning of agricultural residues from corn and wheat is a minor source of CH_4 in Riverside County (U.S. EPA 2009b). Agricultural-related emissions for 2008 were based on data for the unincorporated areas of Riverside County from SCAG and the Riverside County Agricultural Commissioner.

6. Transportation Emissions

The transportation emissions include emissions from on-road vehicles as well as aviation-related fuel use. These two categories of emissions are described below:

On-Road Vehicles: Emissions from on-road vehicles include all generated from trips attributable to activities taking place in the unincorporated parts of Riverside County. Carbon dioxide emissions from vehicles were calculated utilizing EMFAC2007 emission factors for the existing inventory. The Emission Factors (EMFAC) model was developed by CARB and is used to calculate CO_2 emission rates for on-road motor vehicles, from light-duty passenger vehicles to heavy-duty trucks that operate on highways, freeways and local roads in California. Motor vehicle emissions of CH_4 and N_2O were calculated using U.S. EPA emission factors for on-road vehicles based on the total annual mileage driven (that is, vehicle miles traveled) multiplied by their respective emission factors by year.

Vehicle miles traveled (VMT) were provided by the Riverside County Transportation Department, which derived them from a transportation model count of the trips entering the unincorporated areas of Riverside County, trips leaving unincorporated Riverside County and trips occurring solely within unincorporated Riverside County. Pass-through traffic (that is, trips beginning and ending outside of unincorporated Riverside County) is not included in this analysis. Since trips entering or leaving unincorporated Riverside County have only one end in Riverside County, only half of these miles were included in the emissions analysis in order to reflect the split jurisdiction of these trips. The VMT associated with these trips are split equally between the two jurisdictions since both are equally responsible for the trips; one jurisdiction is home to the origin and the other is home to the destination. Due to the size of Riverside County and the complexity of its circulation network, using any other split ratio was technologically infeasible. See Section 4.18 (Circulation and Traffic), for further details on traffic modeling, data and results.

The transportation modeling (RIVTAM) assumed that all vehicles are either gasoline or diesel powered. The estimates therefore do not account for electrical, biodiesel (a blend of diesel and vegetable oil) or hydrogen-powered systems. Any electrically powered vehicle draws its power from a residential, commercial or industrial land use within Riverside County; however, the electricity would have been captured under the electrical usage category for the baseline year of 2008.

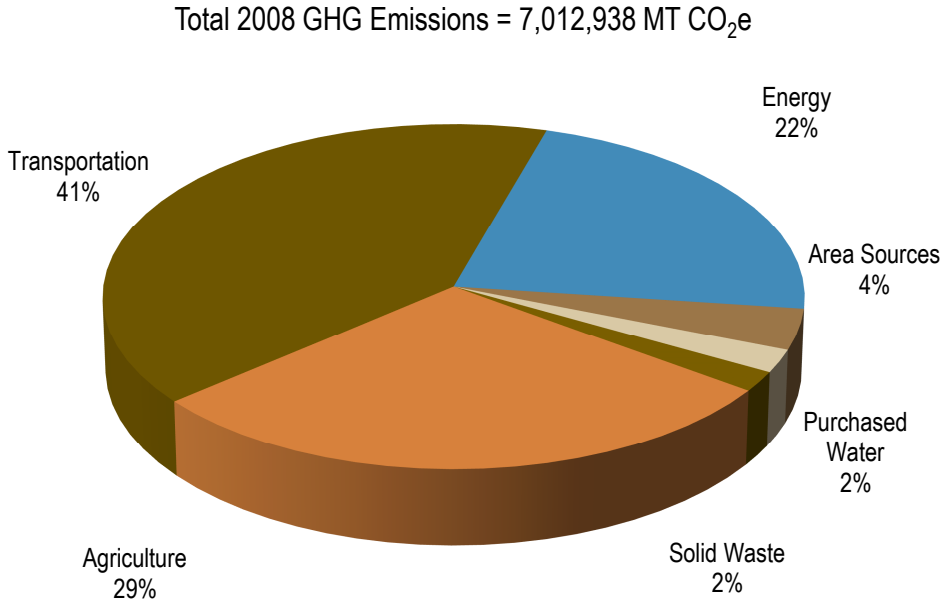
Aviation: Riverside County owns and operates five airports: Hemet-Ryan, French Valley, Chiriaco Summit, Desert Center and Jacqueline Cochran Regional Airport. The GHG emissions associated with aircraft trips within Riverside County were calculated based on annual fuel consumption (extrapolated from airport aviation fuel sales) and emission factors for jet fuel and aviation fuel for CO_2, CH_4 and N_2O. Fuel services are not provided at the Chiriaco Summit or Desert Center Airport, so all fuel consumption data was obtained from the three larger airports. March Air Reserve Base is not included here as flights occurring there are predominantly military and not under the jurisdiction of the County of Riverside.

B. Base Year (2008) Results

For 2008, activities within unincorporated Riverside County resulted in the emission of approximately 7.1 million metric tons (MMT) CO_2e. The categories included in this inventory are: transportation, energy, area source, water and wastewater, solid waste and agriculture. As shown in Figure 4.7.1 (2008 Greenhouse Gas Emissions in Unincorporated Riverside County) and Table 4.7-C (2008 Net Total GHG Emissions for Unincorporated Riverside County), energy-related emissions represent approximately 22% of the total GHG emissions generated by Riverside County in 2008. Solid waste-related emissions represent approximately 3% of the total GHG

emissions. Area source emissions represent approximately 4%. Indirect emissions from the purchasing of water from the State Water Project and the Colorado River represent approximately 2% of the total GHG emissions. Agricultural emissions represent approximately 29% of the total GHG emissions generated by Riverside County in 2008. Transportation emissions do not include pass-through traffic on the freeways within Riverside County and only account for vehicle trips with starting points and/or destinations related to land uses within unincorporated areas that are within the jurisdictional control of the County of Riverside. Transportation-related emissions represent the largest emission source; approximately 40% of the total GHG emissions generated within Riverside County.

Figure 4.7.1: 2008 Greenhouse Gas Emissions in Unincorporated Riverside County



Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

Table 4.7-C: 2008 Net Total GHG Emissions for Unincorporated Riverside County

Emissions Category & Sub-category	Metric Tons of CO_2e	Percent of Total
Transportation	***2,850,520***	***41%***
On-road Vehicles	2,819,456	
Airport Operations	21,162	
Energy	***1,577,667***	***22%***
Electricity [1]	1,067,418	
Natural Gas [2]	510,249	
Solid Waste	***132,666***	***2%***
Landfill Off-gassing [3]	150,639	
Onsite Equipment	4,816	
Area Sources	***269,181***	***4%***
Landscaping Equipment	128,043	
Wood Burning	118,543	
Water and Wastewater [4]	***152,473***	***2%***
Agriculture	***2,030,431***	***29%***
Enteric Fermentation	115,584	
Manure Management	199,873	
Agriculture Residue Burning	166	

Emissions Category & Sub-category	Metric Tons of CO_2e	Percent of Total
Crop Growth	1,233,081	
Animals and Runoff	235,565	
Fertilizer Use	246,162	
GRAND TOTAL	**7,012,938**	**100%**

Footnotes:
1. Includes electricity used for local water supply and wastewater treatment.
2. Includes natural gas-using stoves, grills, barbecues and other heating devices.
3. Per U.S. EPA standards, does not include landfill decomposition emissions.
4. Indirect (outside of county) electricity use for importation of water.

Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

4.7.3 Policies and Regulations Addressing Greenhouse Gases

A. Federal Regulations

Kyoto Protocol: The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) signed on March 21, 1994. Specifically, the Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5% from 1990 levels during the first commitment period of 2008-2012 (UNFCCC 1997). It should be noted that although the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

In December 2009, representatives from 170 countries met in Copenhagen to ratify an updated UNFCCC agreement known as the "Copenhagen Accord". This accord is a voluntary agreement between the United States, China, India and Brazil that recognizes the need to keep global temperature rise to below 2°C and obliges signatories to establish measures to reduce greenhouse gas emissions and to prepare to provide help to poorer countries in adapting to climate change. The countries met again in Cancun in December 2010 and adopted the Cancun Agreements, which reinforce and build upon the Copenhagen Accord. The nations agreed to recognize country targets, develop low-carbon development plans and strategies, and report inventories annually. In addition, agreements were made regarding financing for developing countries, as well as for technology support and coordination among all nations. The conference of the parties occurred again in December 2011 in South Africa. At the South Africa conference, China and Brazil agreed to unbinding Kyoto reduction targets through an informal memorandum. Two climate change conferences of the parties occurred in August 2012 in Bangkok, Thailand; and again in November/December 2012 in Doha, Qatar without major progress. The 2013 climate change conference occurred in Warsaw, Poland and the parties agreed to extend the Kyoto Protocol through 2015. The next climate change conference of the parties is scheduled for September 2014 in New York City.

Climate Change Technology Program: In lieu of the Kyoto Protocol's mandatory framework, the United States has opted for a voluntary and incentive-based approach toward emissions reductions. The Climate Change Technology Program is a multi-agency research and development coordination effort led by the Secretaries of Energy and Commerce and charged with carrying out the President's National Climate Change Technology Initiative.

United States Environmental Protection Agency: The United States Environmental Protection Agency (U.S. EPA) is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce GHG emissions generated by the United States.

These programs focus on energy efficiency, renewable energy, methane and other non-CO_2 gases, agricultural practices and implementation of technologies to achieve GHG reductions. The U.S. EPA implements several voluntary programs that help substantially reduce GHG emissions. These programs include: the State Climate and Energy Partner Network, which fosters the exchange of information between federal and state agencies regarding climate and energy; the Climate Leaders program for companies; the Energy Star® labeling system for energy-efficient products; and the Green Power Partnership for organizations interested in buying green power. All of these programs play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

It should be noted that in Massachusetts v. Environmental Protection Agency (Docket No. 05-1120), the U.S. Supreme Court held in April of 2007 that the U.S. EPA has authority to regulate greenhouse gases and that the U.S. EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the Court ruled that the U.S. EPA should be required to regulate CO_2 and other greenhouse gases as pollutants pursuant to Section 202(a)(1) of the federal Clean Air Act (CAA).

Towards this aim, in 2009 the U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions by fossil fuel suppliers, industrial gas suppliers, direct GHG emitters and manufactures of heavy-duty and off-road vehicles and vehicle engines. It also requires annual reporting of emissions. The first annual reports required by the Rule were due in March 2011. This rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of greenhouse gas emissions for those sources above certain thresholds (U.S. EPA 2009). In addition, the U.S. EPA adopted a Final Endangerment Finding for the six defined GHGs in December 2009. This Endangerment Finding is required for the U.S. EPA to regulate GHG emissions under Section 202(a)(1) of the CAA.

On May 13, 2010, the U.S. EPA issued a Final Rule that establishes a common sense approach to addressing greenhouse gas emissions from stationary sources under the CAA permitting programs. The rule is in its second phase, which continues through June 2013. In this phase, new construction projects that exceed a CO_2e threshold of 100,000 tons per year and modifications of existing facilities that increase CO_2e emissions by at least 75,000 tons per year are subject to permitting requirements. Additionally, operating facilities that emit at least 100,000 tons per year are subject to Title V permitting requirements for GHGs (U.S. EPA 2010a). New and existing industrial facilities that meet or exceed that threshold require a permit under the New Source Review 'Prevention of Significant Deterioration' and Title V 'Operating Permit' programs.

B. State Regulations

California Air Resources Board: The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles air emission inventories, develops suggested control measures and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints and barbecue lighter fluid) and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of the State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts. The SIP is required for the State of California to take over implementation of the federal Clean Air Act in California and consists of rules and technical documentation to support the State of California's plan for reducing emissions of criteria pollutants in areas that exceed EPA standards and are designated non-attainment.

Executive Order S-3-05: In June 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05 establishing the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels.
- By 2020, California shall reduce GHG emissions to 1990 levels.
- By 2050, California shall reduce GHG emissions to 80% below 1990 levels.

The first California Climate Action Team (CCAT) Report to the Governor in 2006 contained recommendations and strategies to help meet these Executive Order targets. The 2010 CCAT Biennial Report expanded on the policy-oriented 2006 report. The information detailed in the 2010 CCAT Biennial Report included issuance of revised climate and sea level projections using newly available information and tools, and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts. The action items in the report focus on the preparation of the Climate Change Adaptation Strategy, as required by Executive Order S-13-08 (and described later in this report).

Assembly Bill 32 - Global Warming Solutions Act of 2006: In 2006, the California legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, focusing on reducing GHG emissions in California. GHGs as defined under AB 32 include CO_2, CH_4, N_2O, HFCH, PCH, SFX. AB 32 required CARB to adopt rules and regulations directing state actions that would reduce GHG emissions to 1990 statewide levels by 2020. CARB was also required to publish a list of "discrete early action" GHG emission reduction measures that would be made enforceable by 2010. The law further required that such measures achieve the maximum technologically feasible and cost-effective reductions in GHGs from sources or categories of sources to achieve the statewide greenhouse gas emissions limit for 2020.

Towards this aim, in October 2007, CARB published its "Final Report for Proposed Early Actions to Mitigate Climate Change in California." This report described recommendations for discrete early action measures to reduce GHG emissions. Resulting from this were three new regulations including: a low carbon fuel standard, reduction of HFC-134a (a refrigerant chemical) emissions from non-professional servicing of motor vehicle air conditioning systems and improved landfill methane capture. CARB estimated that by 2020, reductions from these three measures would reduce emissions by approximately 13-26 million metric tons CO_2e.

In 2007, CARB released a report, "California 1990 GHG Emissions Level and 2020 Emissions Limit," establishing that statewide levels of GHG emissions in 1990 were 427 MMT CO_2e. Additionally, in 2008, CARB adopted the "Climate Change Scoping Plan," outlining the State of California's strategy to achieve the 2020 GHG limit. The Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs and enhance public health. The plan emphasizes a cap-and-trade program, but also includes the discrete early actions previously mentioned.

Senate Bill 97 – 2007 CEQA Guidelines and Climate Change: SB 97, enacted in 2007, amended the California Environmental Quality Act (CEQA) to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed the California Office of Planning and Research (OPR) to develop revisions to the State CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" and directed the Natural Resources Agency to certify and adopt these revised State CEQA Guidelines by January 2010 (See PRC Section 21083.05). The revisions were codified into the California Code of Regulations (CCR) and became fully effective by July 2010. These revisions provide regulatory guidance for the analysis and mitigation of the potential effects of GHG emissions.

Among the changes resulting from SB 97 was the addition of criteria for climate action plans used in the tiering and streamlining of CEQA analysis of GHGs for subsequent development projects. Riverside County has updated the Air Quality Element of the General Plan to include specific policies to address GHG emissions. The implementation mechanisms for these GHG-related policies are the Screening Tables for New Development, included in the proposed Climate Action Plan (CAP). The Screening Tables allow new development projects a streamlined option for complying with the CEQA requirements for addressing GHG emissions. Additionally, Riverside County's CAP details policies to reduce emissions from municipal and community-wide sources, including existing buildings and new development. The addition to the State CEQA Guidelines addressing tiering reads as follows:

15183.5. Tiering and Streamlining the Analysis of Greenhouse Gas Emissions.

(a) Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans) and 15183 (EIRs Prepared for General Plans, Community Plans or Zoning).

*(b) **Plans for the Reduction of Greenhouse Gas Emissions.** Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.*

*(1) **Plan Elements.** A plan for the reduction of greenhouse gas emissions should:*

(A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review.

> (2) ***Use with Later Activities.*** *A plan for the reduction of greenhouse gas emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable notwithstanding the project's compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.*

Senate Bill 375 – 2008 Sustainable Communities and Climate Protection Act: SB 375 established mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions and was adopted by the State of California in September 2008. In response, in 2010, CARB adopted vehicular GHG emissions reduction targets developed in consultation with the State of California's metropolitan planning organizations (MPOs), which included the Southern California Association of Governments (SCAG), to which Riverside County belongs. The targets require a 7-8% reduction by 2020 and 13-16% reduction by 2035 for each MPO. The objective of these targets is to induce cities and counties to change their land use patterns and improve their transportation alternatives. Through the SB 375 process, MPOs, such as SCAG, are to work with local jurisdictions in the development of "Sustainable Communities Strategies" (SCS) designed to integrate development patterns and the transportation network in a way that reduces greenhouse gas emissions while meeting housing needs and other regional planning objectives. In particular, SCAG's reduction target for per-capita vehicular emissions is 8% by 2020 and 13% by 2035 (CARB 2010b). SCAG is in the process of preparing its SCS according to its 2012 Regional Transportation Plan (RTP) update schedule. To date, different regions remain in different states regarding the completion and adoption of their SCSs.

Pertinent to Riverside County, the Southern California Association of Governments (SCAG) adopted the 2012 RTP including the SCS for the region on April 4, 2012; Riverside County is within the SCAG area and the SCAG 2012 RTP and SCS applies to Riverside County.

Executive Order S-13-08: On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08, the Climate Adaptation and Sea Level Rise Planning Directive, to provide clear direction on how the State of California should plan for future climate impacts. Executive Order S-13-08 outlines four key actions to reduce the vulnerability of California to climate change:

- Initiate California's first statewide Climate Change Adaptation Strategy (CAS) to assess the state's expected climate change impacts, identify where California is most vulnerable and recommend climate adaptation policies.
- Request that the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California in order to inform State of California planning and development efforts.
- Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects.
- Initiate studies on critical infrastructure projects and land-use policies vulnerable to sea level rise.

The resultant 2009 "CAS Report" summarizes the best known science on climate change impacts in the state to assess vulnerability and outlines possible solutions that can be implemented within and across state agencies to

promote resiliency. This is the first step in an ongoing, evolving process to reduce California's vulnerability to climate impacts.

California Energy Code (CCR Title 24, Part 6): CCR Title 24, Part 6, the California Energy Code (also known as "Energy Efficiency Standards for Residential and Non-Residential Buildings"), commonly referred to simply as "Title 24," were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically incorporate new energy efficiency technologies and methods as they become available. Since use of fossil fuels to produce energy results in GHG emissions, energy-efficient buildings that use less energy result in less GHG emissions as well. The State also enacted the "California Green Building Standards Code" under CCR Title 24, Part 11, to address other "holistic" aspects of green building, energy and resource conservation. See section 4.10 for more details on this and other energy conservation issues.

In 2013, the California Energy Commission (CEC) adopted updated Title 24 (Parts 1 and 6) standards ~~which will go into~~ effect*ive* on July 1, 2014. These changes are intended to:

- Provide California with an adequate, reasonably priced and environmentally sound supply of energy.
- Respond to the AB 32 mandate for California to reduce its GHG emissions to 1990 levels by 2020.
- Pursue California energy policy, which states that energy efficiency is the resource of first choice for meeting California's energy needs.
- Act on the findings of California's Integrated Energy Policy Report which concluded that the standards are the most cost-effective means to achieve energy efficiency, reduce electricity and peak demand, and reduce energy used in meeting California's water needs and reduce California's GHG emissions.
- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of the California Building Standards Code.
- Meet the energy efficiency goals of Executive Order S-20-04, which established California's Green Building Initiative to improve the energy efficiency of nonresidential buildings by 20% by the year 2015.

C. Regional Regulations – Air Quality Management Districts

As outlined in Section 4.6 (Air Quality), Riverside County spans three different air basins: South Coast, Salton Sea and Mojave Desert. The portions of Riverside County within the South Coast and Salton Sea air basins are regulated by the South Coast Air Quality Management District (SCAQMD), which also governs Los Angeles and Orange counties, plus a small portion of San Bernardino County. The easternmost third of Riverside County, that within the Mojave Desert Air Basin, is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD), which also governs most of San Bernardino County. The AQMDs are charged by CARB and the State of California with promoting and improving the air quality of their jurisdictions' basins. This is accomplished though air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations and by supporting and implementing measures to reduce emissions from motor vehicles.

After AB 32 was passed, SCAQMD formed a Climate Change Committee along with a Greenhouse Gases CEQA Significance Thresholds Working Group and the SoCal Climate Solutions Exchange Technical Advisory Group.

In September 2008, the SCAQMD Board or Directors approved the "SCAQMD Climate Change Policy," which outlines actions the SCAQMD will take to assist businesses and local governments in implementing climate change measures, decrease the agency's carbon emissions and provide information to the public regarding climate change. Also in 2008, the SCAQMD Board approved interim CEQA GHG significance thresholds for stationary sources of GHG emissions and related rules and plans. SCAQMD also adopted a tiered approach for determining significance of projects' impacts relative to GHGs. Projects that are exempt from CEQA or consistent with an approved local GHG reduction plan can be found to be less than significant. Other threshold "tiers" capture various levels of GHG emissions. The adopted interim CEQA GHG significance thresholds for stationary sources were adopted by the SCAQMD Governing Board on December 5, 2008, and can be found on the SCAQMD website: www.aqmd.gov/hb/2008/December/081231a.htm.

D. Riverside County Regulations

The following Riverside County ordinances and County Board of Supervisors (BOS) policies address impacts related to global climate change and related issues, such as energy efficiency.

Ordinance No. 706 - Mobile Source Air Pollution Reduction Programs (Funding): This ordinance supports the SCAQMD's imposition of the vehicle registration fee and brings the County into compliance with the requirements of the California Health and Safety Code in order to receive fee revenues for the purpose of implementing programs to reduce air pollution from motor vehicles. Motor vehicles are a large source of both air pollution and GHG emissions, and programs that reduce the use or increase the efficiency of motor vehicles reduce both air pollution and GHG emissions.

Ordinance No. 726 - Transportation Demand Management for New Development: This ordinance sets the following goals for efficiently utilizing Riverside County's existing and planned transportation system and reducing vehicle emissions:

- Reduce vehicle trips generated by new development by 12% commencing in 1994, by 20% commencing in 2000 and by 30% commencing in 2006.
- Reduce overall projected 1994 vehicle trips emanating from the County of Riverside by 7%.
- Relieve traffic congestion in an effort to improve air quality.
- Produce an efficient transportation demand management (TDM) system which utilizes the existing system to its best potential.
- Maintain or achieve minimum level of service of "C" for all new development projects.

The ordinance further requires proposed projects prepare a traffic impact analysis, which must include a Transportation Demand Management Plan describing proposed trip levels and outlining proposed TDM measures for the project to achieve the necessary reductions. Since 40% of Riverside County's GHG emissions come from vehicular sources, these traffic-reducing measures will also reduce GHG levels.

Ordinance No. 748 - Mitigation of Traffic Congestion through Signalization: This ordinance adopts and sets forth policies, regulations and fees for the funding and installation of traffic signals for mitigation of cumulative environmental impacts due to traffic congestion generated by new developments and land use changes. By aiding in reducing traffic, this ordinance also serves to help reduce GHG emissions in Riverside County.

Ordinance No. 782 - Golf Cart Transportation Plan: This ordinance establishes a golf cart transportation program within the County of Riverside. The golf cart transportation plan, authorized by California's Streets and Highways Code, extends the use of golf carts for transportation beyond access to golf courses. Utilizing golf carts can reduce automobile trips and associated vehicular emissions, thus improving air quality and reducing GHG emissions.

Ordinance No. 824 - Western Riverside County Traffic Uniform Mitigation Fee (TUMF) Program: This ordinance authorizes Riverside County's participation in the Western Riverside Council of Government (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program. The purpose of the TUMF program is to fund scheduled improvements to the regional system of highways and arterials in western Riverside County. WRCOG studies show that future development within western Riverside County and its cities will result in traffic volumes exceeding the capacity of the regional system as it presently exists. Thus, TUMF is needed to provide improvements to the regional system to reduce traffic congestion. Increased traffic flow and decreased idling time as a result of the traffic improvements will decrease vehicle fuel consumption and reduce GHG emissions.

Ordinance No. 659 - Development Impact Fee (DIF) Program for Residential Development: The Development Impact Fee (DIF) established by this ordinance is collected by Riverside County for each residential unit, development project or portion thereof to be constructed in order to assist in providing revenue to acquire or construct public facilities, purchase regional parkland and preserve habitat and open space. Constructing public facilities and preserving open space associated with new developments is necessary to prevent adverse impacts and promote public health and safety. Specifically, air pollutants and GHG emissions are reduced by the convenient location of public facilities in close proximity to new developments, thus reducing vehicle travel. Preservation of open space both helps improve air quality and prevent urban sprawl into natural areas.

Ordinance No. 655 - Regulating Light Pollution: This ordinance limits the use of lights within the vicinity of the Palomar Observatory. Although the primary intent of the ordinance is to limit light pollution in order to avoid interference with astronomical observation and research, the ordinance also limits the amount of time lights can be on. This conserves electricity and indirectly reduces greenhouse gases emissions.

Ordinance No. 859 - Establishing Water-Efficient Landscaping Standards: This ordinance establishes provisions for water management practices and water waste prevention and creates a structure for planning, designing, installing, maintaining and managing water-efficient landscapes in new rehabilitated projects. It was adopted to implement the requirements of the 2006 California Water Conservation in Landscaping Act and CCR Title 23, Division 2, Chapter 2.7. It generally requires new development landscaping to not exceed a maximum water demand of 70% (or lower as may be required by state legislation). It also includes provisions to eliminate water waste from overspray and runoff and raise public awareness of the need to conserve water through education and motivation. Increasing water efficiency works towards reducing GHG emissions by reducing electricity associated with water use and, thus, the associated GHG emissions.

Ordinance No. 559 - Regulating the Removal of Trees: This ordinance states that "no person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside, without first obtaining a permit to do so." Trees, as they grow, provide carbon storage; keeping trees in their place retains this storage of GHGs.

Ordinance No. 695 - Requiring the Abatement of Hazardous Vegetation: The main purpose of this ordinance is to product Riverside County residents and homes from wildfires. The policy requires all owners or occupants to remove all combustible material and hazardous vegetation. This ordinance help reduce fire risks; wildfires release large amounts of air pollutants, such as soot, and also naturally occurring GHGs.

Ordinance No. 810 - Establishing an Interim Open Space Mitigation Fee: This ordinance implements the Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP) and mitigates impacts of new development in western Riverside County. It establishes a development mitigation fee in order to help finance the acquisition of lands containing species protected by the WRC-MSHCP. By preserving these habitats and assessing a fee to develop in these open space areas, the ordinance helps to limit sprawl and encourage concentrated development, thereby reducing GHG emissions that would arise from trips between wider-flung land uses.

Ordinance No. 875 - Establishing Mitigation Fees for Coachella Valley Multi-Species Habitat Conservation Plan: This ordinance helps to enable Riverside County to achieve the conservation goals set forth in the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (CV-MSHCP). Similar to Ordinance No. 810, this ordinance establishes a fee to help finance the acquisition of lands supporting species protected by the CV-MSHCP.

Board of Supervisors (BOS) Policy A-64 - Environmental Purchasing: This policy directs Riverside County's departments to purchase environmentally friendly materials whenever possible. These can include energy-efficient light bulbs, low emissions vehicles and items made from recycled content. By choosing energy-efficient technologies and recycled materials, GHG emissions from electricity and waste are reduced.

BOS Policy H-4 - Energy Conservation: Policy H-4 states that all County of Riverside departments are responsible for conserving energy. It also directs the Riverside County Economic Development Agency to oversee energy conservation efforts with regard to building heating and cooling systems, lighting, building controls and water conservation by county facilities. It also focuses on energy conservation and rebate/ incentive programs as well as energy conservation education and awareness. Other Riverside County agencies and departments are instructed to appoint an energy conservation representative to enforce energy conservation measures.

BOS Policy H-25 - Water Efficient Landscaping: This policy provides for the design, installation and maintenance of water-efficient landscapes for county-owned or county-maintained facilities. This policy will help reduce public facility water consumption and prevent water waste. Transporting water to Southern California is energy-intensive and efforts to reduce water use translates to reduced electricity use to pump the water from Northern California and reduces GHG emissions associated with electricity use in Riverside County.

BOS Policy H-29 - Sustainable Building: This policy establishes the use of sustainable building practices in the design of Riverside County capital improvement projects in order to reduce pollution, protect natural resources, enhance asset value, optimize building performance and create healthier workplaces for Riverside County employees. In addition to reducing operating costs, the use of sustainable building design reduces GHG emissions associated with electricity use, natural gas use, water use and solid waste generation.

E. Existing County General Plan Policies

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects related to GHGs are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

1. Land Use (LU) Element

Policy LU 2.1: Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Map (Figure LU-1) and the Area Plan land use maps, in accordance with the following:

a. Provide a land use mix at the countywide and area plan levels based on projected need and supported by evaluation of impacts to the environment, economy, infrastructure and services.

b. Accommodate a range of community types and character, from agricultural and rural enclaves to urban and suburban communities.

c. Provide for a broad range of land uses, intensities and densities, including a range of residential, commercial, business, industry, open space, recreation and public facilities uses.

d. Concentrate growth near community centers that provide a mixture of commercial, employment, entertainment, recreation, civic and cultural uses to the greatest extent possible.

e. Concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character of Riverside County to the greatest extent possible.

f. Site development to capitalize upon multi-modal transportation opportunities and promote compatible land use arrangements that reduce reliance on the automobile.

g. Prevent inappropriate development in areas that are environmentally sensitive or subject to severe natural hazards.

Policy LU *8.12* (Previously LU 7.12): Improve the relationship and ratio between jobs and housing so that residents have an opportunity to live and work within the county.

Policy LU *11.1* (Previously LU 10.1): Provide sufficient commercial and industrial development opportunities in order to increase local employment levels and thereby minimize long-distance commuting.

Policy LU *11.3* (Previously LU 10.3): Accommodate the development of community centers and concentrations of development to reduce reliance on the automobile and help improve air quality.

Policy LU *11.4* (Previously LU 10.4): Provide options to the automobile in communities, such as transit, bicycle and pedestrian trails, to help improve air quality.

Policy LU *13.1* (Previously LU 12.1): Provide land use arrangements that reduce reliance on the automobile and improve opportunities for pedestrian, bicycle and transit use in order to minimize congestion and air pollution.

Policy LU *13.2* (Previously LU 12.2): Locate employment and service uses in areas that are easily accessible to existing or planned transportation facilities.

Policy LU *13.3* (Previously LU 12.3): Locate transit stations in community centers and at places of public, employment, entertainment, recreation and residential concentrations.

Policy LU *13.4* (Previously LU 12.4): Incorporate safe and direct multi-modal linkages in the design and development of projects, as appropriate.

2. Circulation (C) Element

Policy C 1.2: Support development of a variety of transportation options for major employment and activity centers including direct access to transit routes, primary arterial highways, bikeways, park-n-ride facilities and pedestrian facilities.

Policy C 1.7: Encourage and support the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle lanes and paths, and mixed-use community centers.

Policy C 4.1: Provide facilities for the safe movement of pedestrians within developments, as specified in the County Ordinance regulating the division of land of the County of Riverside.

Policy C 5.2: Encourage the use of drought-tolerant native plants and the use of recycled water for roadway landscaping.

Policy C 11.2: Incorporate the potential for public transit service in the design of developments that are identified as major trip attractions (i.e., community centers, tourist and employment centers), as indicated in ordinances regulating the division of land of the County of Riverside.

Policy C 11.4: Offer incentives to new development to encourage it to locate in a transit-oriented area such as a community center or along a designated transit corridor near a station.

Policy C 11.5: Accommodate transit through higher densities, innovative design and right-of-way dedication.

Policy C *11.6* (Previously C 11.7): Promote development of transit centers and park-n-rides for use by all transit operators, including development of multi-modal facilities.

Policy C 12.1: Support the development and implementation of the Transit Oasis concept in conjunction with RCTC [Riverside County Transportation Commission], local transit operators and cities.

Policy C 13.1: Support continued development and implementation of the Riverside County Transportation Commission Rail Program including new rail lines and stations, the proposed California High Speed Rail System with at least two stations in Riverside County, the Coachella Valley Commuter Rail Service and the proposed Intercity Rail Corridor between Calexico and Los Angeles.

Policy C 13.2: Support continued improvements to AMTRAK and MetroLink rail passenger service within Riverside County and throughout the Southern California region.

Policy C *20.14* (Previously C 20.12): Encourage the use of alternative non-motorized transportation and the use of non-polluting vehicles.

Policy C *21.7* (Previously C 21.9): Encourage development of bus-only lanes and signal synchronization so that transit can help to alleviate congestion.

3. Multipurpose Open Space (OS) Element

Policy OS *2.2* (Previously OS 2.1): Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms.

Policy OS 2.5: Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields and appropriate scheduling of water deliveries.

Policy OS 10.1: Provide for orderly and efficient wind energy development in a manner that maximizes beneficial uses of the wind resource and minimizes detrimental effects to the residents and the environment of the county.

Policy OS 11.1: Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources.

Policy OS 11.2: Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments.

Policy OS 11.3: Permit and encourage the use of passive solar devices and other state-of-the-art energy resources.

Policy OS 12.1: Allow for the development of non-electrical, direct heat uses of geothermal heat and fluids for space, agricultural and industrial heating in situations and localities where naturally occurring hydrothermal features will not be degraded.

Policy OS 16.2: Specify energy efficient materials and systems, including shade design technologies, for county buildings.

Policy OS 16.3: Implement public transportation systems that utilize alternative fuels when possible, as well as associated urban design measures that support alternatives to private automobile use.

Policy OS 16.4: Undertake proper maintenance of County physical facilities to ensure that optimum energy conservation is achieved.

Policy OS 16.5: Utilize federal, State and utility company programs that encourage energy conservation.

Policy OS 16.6: Assist public buildings and institutions in converting asphalt to greenspace to address the heat island effect.

Policy OS 16.7: Promote purchasing of energy-efficient equipment based on a fair return on investment and use energy-savings estimates as one basis for making purchasing decisions regarding major energy-using devices.

Policy OS 16.8: Promote coordination of new public facilities with mass transit service and other alternative transportation services, including bicycles, and design structures to enhance mass transit, bicycle and pedestrian use.

Policy OS 16.9: Encourage increased use of passive, solar design and day-lighting in existing and new structures.

Policy OS 16.10: Encourage installation and use of cogenerating systems where they are cost-effective and appropriate.

4. Air Quality (AQ) Element

Policy AQ 1.1: Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

Policy AQ 1.2: Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts and those subregional entities identified in the Regional Growth Management Plan.

Policy AQ 1.3: Participate in the development and update of those regional air quality management plans required under federal and State law, and meet all standards established for clean air in these plans.

Policy AQ 1.4: Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

Policy AQ 1.5: Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire regions.

Policy AQ 1.6: Establish a level field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element.

Policy AQ 1.7: Support legislation which promotes cleaner industry, clean fuel vehicles and more efficiently-burning engines and fuels.

Policy AQ 1.8: Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented.

Policy AQ 1.9: Encourage publicly recognized and reward innovative approaches that improve air quality.

Policy AQ 1.10: Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible.

Policy AQ 1.11: Involve environmental groups, the business community, special interests, and the general public in the formation and implementation of programs that effectively reduce airborne pollutants.

Policy AQ 2.1: The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

Policy AQ 2.2: Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

Policy AQ 2.3: Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Policy AQ 2.4: Consider creating a program to plant urban trees to an Area Plan basis that removes pollutants from the air provides shade and decreases the negative impacts on the air.

Policy AQ 3.1: Allow the market place, as much as possible, to determine the most economical approach to relieve congestion and cut emissions.

Policy AQ 3.2: Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.

Policy AQ 3.4: Encourage employee rideshare and transit incentives for employers with more than 25 employees at a single location.

Policy AQ 4.5: Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;
- Operating procedures
- Preventive maintenance;
- Operator training; and,
- Emergency response planning

Policy AQ 4.6: Require stationary air pollution sources to comply with applicable air district rules and control measures.

Policy AQ 4.8: Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.

Policy AQ 4.9: Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

Policy AQ 4.10: Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

Policy AQ 5.1: Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

Policy AQ 5.2: Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments.

Policy AQ 5.4: Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Policy AQ 6.1: Assist small business by developing education and job training programs, especially in job-poor areas.

Policy AQ 6.2: Collaborate with local colleges and universities to develop appropriate education programs to assist residents in obtaining job skills to meet market demands.

Policy AQ 7.1: Provide incentives to encourage new firms to locate within the County and existing firms to expand operations.

Policy AQ 7.2: Work with SCAQMD and MDAQMD to develop a means to encourage the location of new commercial and industrial development in those localities where jobs are most needed.

Policy AQ 7.3: Create a loan program to encourage small business to located within the County.

Policy AQ 7.4: Offer incentives to businesses to control emissions and implement the AQMP.

Policy AQ 7.5: Reduce regulations on small businesses wherever possible and thereby encourage small business development and job creation. The County shall set performance standards as well as design standards, thus giving small business owners as many options as possible to comply with County regulations.

Policy AQ 7.6: Adopt policies freeing small businesses from unnecessary and duplicative paperwork.

Policy AQ 7.7: Assemble information collected from County agencies and departments concerning the business community to develop programs that better serve their needs.

Policy AQ 8.1: Locate new public facilities in job-poor areas of the County.

Policy AQ 8.2: Emphasize job creation and reductions in vehicle miles traveled in job-poor areas to improve air quality over other less efficient methods.

Policy AQ 8.3: Time and locate facilities and services so that they further enhance job creation opportunities.

Policy AQ 8.4: Support new mixed-use land use patterns and community centers which encourage community self-sufficiency and containment, and discourage automobile dependency.

Policy AQ 8.5: Develop community centers in conformance with policies contained in the Land Use Element.

Policy AQ 8.6: Encourage employment centers in close proximity to residential uses.

Policy AQ 8.7: Implement zoning code provisions which encourage community centers, telecommuting and home-based businesses.

Policy AQ 8.8: Promote land use patterns which reduce the number and length of motor vehicle trips.

Policy AQ 8.9: Promote land use patterns that promote alternative modes of travel.

Policy AQ 9.1: Cooperate with local, regional, state and federal jurisdictions to reduce vehicle miles traveled and motor vehicle emissions through job creation.

Policy AQ 9.2: Attain performance goals and/or VMT reductions which are consistent with SCAG's Growth Management Plan.

Policy AQ 10.1: Encourage trip reduction plans to promote alternative work schedules, ridesharing, tele-commuting and work-at-home programs, employee education and preferential parking.

Policy AQ 10.2: Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions when possible to eliminate vehicle trips which would otherwise be made.

Policy AQ 10.3: Assist merchants in encouraging their customers to shift from single occupancy vehicles to transit, carpools, bicycles or foot.

Policy AQ 10.4: Continue to enforce the County's Transportation Demand Management Ordinance and update as necessary.

Policy AQ 11.1: Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close to practicable to the event site and the operator should supply shuttle services.

Policy AQ 11.2: Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates to peripheral parking with tickets sold for non-ridesharing patrons.

Policy AQ 11.3: Encourage special event center operators to advertise and offer discounted transit passes with event tickets.

Policy AQ 11.4: Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with two or more persons per vehicle, for on-site facilities.

Policy AQ 12.1: Manage traffic flow through signal synchronization, while coordinating with and permitted the free flow of mass transit vehicles, when possible.

Policy AQ 12.2: Synchronize signals through the County with those of its cities, adjoining counties and the California Department of Transportation.

Policy AQ 12.3: Construction and improve traffic signals with channelization and Automated Traffic Surveil-lance and Control systems at appropriate intersections.

Policy AQ 12.4: Eliminate traffic hazards and delays through highway maintenance, rapid emergency response, debris removal, and elimination of at-grade railroad crossings, when possible.

Policy AQ 12.5: Encourage business owners to schedule deliveries at off-peak traffic periods.

Policy AQ 13.1: Manage the County of Riverside transportation fleet fueling standards to achieve an appropriate alternate fuel fleet mix.

Policy AQ 13.2: Cooperate with local, regional state, and federal jurisdictions to better manage transportation facilities and fleets.

Policy AQ 13.3: Encourage the construction of high-occupancy-vehicle (HOV) lanes whenever possible to relieve congestion, safety hazards and air pollution described in the AQMP

Policy AQ 14.1: Emphasize the use of high occupancy vehicle lanes, light rail and bus routes, and pedestrian and bicycle facilities when using transportation facility development to improve mobility and air quality.

Policy AQ 14.2: When developing new capital facility improvement plans, also consider measures such as Transportation Demand Management, Transportation Systems Management, and job/housing balance strategies.

Policy AQ 14.3: Monitor traffic and congestion to determine when and where the County needs new transportation facilities to achieve increased mobility efficiency.

Policy AQ 14.4: Preserve transportation corridors with high demand potential or regional significance for future expansion to meet project demand.

Policy AQ 15.1: Identify and monitor sources, enforce existing regulations, and promote stronger control to reduce particulate matter.

Policy AQ 16.1: Cooperate with, regional, state and federal jurisdictions to better control particulate matter.

Policy AQ 16.2: Encourage stricter state and federal legislation on bias belted tires, smoking vehicles, and vehicles that spill debris on streets and highways, to better control particulate matter.

Policy AQ 16.3: Collaborate with SCAQMD and MDAQMD to require and/or encourage the adoption of regulations or incentives to limit the amount of time trucks may idle.

Policy AQ 16.4: Collaborate with EPA, SCAQMD, MDAQMD, and warehouse owners and operators to create regulations and programs to reduce the amount of diesel fumes released due to warehousing operations.

Policy AQ 17.1: Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible.

Policy AQ 17.2: Enforce regulations against illegal fires.

Policy AQ 17.3: Identify and create a control plan for areas within the County prone to wind erosion of soil.

Policy AQ 17.4: Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates.

Policy AQ 17.5: Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable.

Policy AQ 17.6: Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

Policy AQ 17.7: Separate trucks from other vehicles in industrial areas of the County with the creation of truck-only access lanes to promote the free flow of traffic.

Policy AQ 17.8: Adopt regulations and programs necessary to meet state and federal guidelines for diesel emissions.

Policy AQ 17.9: Encourage the installation and use of electric service units at truck stops and distribution centers for heating and cooling truck cabs, and particularly for powering refrigeration trucks in lieu of idling of engines for power.

Policy AQ 17.10: Promote and encourage the use of natural gas and electric vehicles in distribution centers.

Policy AQ 17.11: Create and implement street-sweeping plans, as appropriate, in areas of the County disproportionately affected by particulate matter pollution.

F. Proposed New or Revised County General Plan Policies

The following revisions, deletions and additions are proposed for the General Plan as part of GPA No. 960 to address greenhouse gases.

1. Land Use (LU) Element

Policy LU 1.5: The County shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality**,** watershed ~~and~~ habitat management~~, child care~~ with cities, local and regional agencies, stakeholders, Indian nations and surrounding jurisdictions.

Policy LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

a. Compliance with the design standards of the appropriate area plan land use category.

b. Require that structures be constructed in accordance with the requirements of the County's zoning, building and other pertinent codes and regulations.

c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.

d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.

e. Pursue energy efficiency through street configuration, building orientation and landscaping to capitalize on shading and facilitate solar energy, as provided for in Title 24*, Part 6 and/or Part 11,* of the California ~~Administrative~~ Code *of Regulations (CCR)*.

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought-tolerant landscaping and water recycling, as appropriate.

g. Encourage innovative and creative design concepts.

h. Encourage the provision of public art *that enhances the community's identity, which may include elements of historical significance and creative use of children's art*.

i. Include consistent and well-designed signage that is integrated with the building's architectural character.

j. Provide safe and convenient vehicular access and reciprocal access between adjacent commercial uses.

k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighborhoods.

l. Mitigate noise, odor, lighting and other impacts on surrounding properties.

m. Provide and maintain landscaping in open spaces and parking lots.

n. Include extensive landscaping.

o. Preserve natural features, such as unique natural terrain, *arroyos, canyons and other* drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.

p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space and other pertinent elements.

q. Design parking lots and structures to be functionally and visually integrated and connected.

r. Site buildings access points along sidewalks, pedestrian areas and bicycle routes, and include amenities that encourage pedestrian activity.

s. Establish safe and frequent pedestrian crossings.

t. Create a human-scale ground floor environment that includes public open areas that separate pedestrian space from auto traffic or where mixed, it does so with special regard to pedestrian safety.

u. Recognize open space, including hillsides, arroyos, riparian areas and other natural features as amenities that add community identity, beauty, recreational opportunities and monetary value to adjacent developed areas.

v. Manage wild land fire hazards in the design of development proposals located adjacent to natural open space.

Policy LU *9.1* (Previously LU 8.1): Provide for permanent preservation of open space lands that contain important natural resources, *cultural resources,* hazards, water features, watercourses *including arroyos and canyons* and scenic and recreational values.

2. Circulation (C) Element

Policy C *4.8* (Previously C 4.9): Coordinate with all transit operators to ensure that *ADA compliant* pedestrian facilities are provided along and/or near all transit routes, whenever feasible. New land developments may be required to provide pedestrian facilities due to existing or future planned transit routes even if demand for pedestrian facility ~~is~~ *may* not *be* otherwise warranted.

Policy C 9.2: Support *the expansion of Metrolink service and* transit operators' programs to ~~foster~~ *increase* transit usage *to implement bus rapid transit (BRT) services, and make other express and local bus service improvements.*

Policy C 12.2: Support the development of high-speed transit linkages*, bus rapid transit (BRT)* or express routes between community centers and other major nodes of activity.

Policy C 13.3: Support implementation of the San Jacinto Branch Line to serve ~~planned industrial development~~ *commuter uses*.

Policy C 17.3: Ensure that the bikeway system incorporates the following:

a. Interconnection *throughout and between* ~~of~~ cities and unincorporated communities.

b. ~~Provision of~~ *Appropriate* lanes to specific destinations such as state or county parks.~~;~~

c. ~~Provision for~~ *Appropriate opportunities for recreational bicycle riding and* bicycle touring.~~; and~~

d. ~~Encouragement of~~ *Opportunities for* bicycle commuting~~.~~ *and golf cart commuting within a community, as appropriate for the terrain, traffic levels and proximity to surrounding destinations.*

e. Bikeways connecting to all urban transit centers and systems (bus stops and Metrolink stations) in the vicinity.

f. Bicycle parking at transit stops and park-and-ride lots.

Policy C 17.4: Ensure that alternative modes of motorized transportation, such as buses, trains, *taxi cabs,* etc., plan and provide for transportation of recreational and commuting bicyclists and bicycles on public transportation systems. *Coordinate with all transit operators to ensure that bicycle facilities are provided along and/or near all transit routes, whenever feasible. New land developments shall be required to provide bicycle facilities due to existing or future planned transit routes.*

Policy C 21.1: Encourage the installation and use of HOV lanes. Such lanes should be continuous, linking major population centers with employment centers. If HOV lanes are used, consider making them available for mixed flow traffic during non-peak periods where warranted and feasible. *Consider and implement, where feasible and needed, direct HOV connections between freeways and arterial-to-freeway exclusive HOV ingress/egress ramps.*

3. Air Quality (AQ) Element

Policy AQ 4.1: *Require* ~~Encourage~~ the use of *all feasible* building materials/methods which reduce emissions.

Policy AQ 4.2: *Require* ~~Encourage~~ the use of *all feasible* efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

Policy AQ 4.3: *Require* ~~Encourage~~ centrally heated facilities to utilize automated time clocks or occupant sensors to control heating *where feasible*.

Policy AQ 4.4: Require residential building construction to comply with energy use guidelines detailed in *Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of* Title 24 of the California ~~Administrative~~ Code *of Regulations*.

Policy AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, ~~SOCAB~~ *SCAB*, the Environmental Protection Agency and the California Air Resources Board.

NEW **Policy AQ 18.1:** *Baseline emissions inventory and forecast. Riverside County CAP has included baseline emissions inventory with data from the County's CO2e emissions for specific sectors and specific years. The carbon inventory greatly aids the process of determining the type, scope and number of greenhouse gas reduction policies needed. It also facilitates the tracking of policy*

implementation and effectiveness. The carbon inventory for the county consists of two distinct components; one inventory is for the county as a whole, as defined by its geographical borders and the other inventory is for the emissions resulting from the County's municipal operations.

NEW **Policy AQ 18.2:** *Adopt GHG emissions reduction targets. Pursuant to the results of the Carbon Inventory and Greenhouse Gas Analysis for Riverside County, future development proposed as a discretionary project pursuant to the General Plan shall achieve a greenhouse gas emissions reduction of 25% compared to Business As Usual (BAU) project in order to be found consistent with the County's Climate Action Plan (CAP).*

NEW **Policy AQ 18.3:** *Develop a Climate Action Plan (CAP) for reducing GHG emissions. The Riverside County CAP has been developed to formalize the measures necessary to achieve county greenhouse gas emissions reduction targets. The CAP includes both the policies necessary to meet stated targets and objectives are met. These targets, objectives and Implementation Measures may be refined, superseded or supplemented as warranted in the future.*

NEW **Policy AQ 18.4:** *Implement policies and measures to achieve reduction targets. The County shall implement the greenhouse gas reduction policies and measures established under the County Climate Action Plan for all new discretionary development proposals.*

NEW **Policy AQ 18.5:** *Monitor and verify results. The County shall monitor and verify the progress and results of the CAP periodically. When necessary the CAP's "feedback" provisions shall be used to ensure that any changes needed to stay "on target" with stated goals are accomplished.*

NEW **Policy AQ 19.1:** *Continue to coordinate with CARB, SCAQMD and the State Attorney General's office to ensure that the milestones and reduction strategies presented in the General Plan and the CAP adequately address the county's greenhouse gas emissions.*

NEW **Policy AQ 19.2:** *Utilize the County's CAP as the guiding document for determining the County's greenhouse gas reduction thresholds and implementation programs. Implementation of the CAP and its monitoring program shall include the ability to expand upon or, where appropriate, update or replace the Implementation Measures established herein so that the implementation of the CAP accomplishes the greenhouse gas reduction targets.*

NEW **Policy AQ 19.3:** *Require new development projects subject to County discretionary approval to achieve the ~~greenhouse gas~~ GHG reduction targets established in the CAP either through:*

a. Garnishing 100 points through the Implementation Measures found the County's CAP; or

b. Requiring quantification of project-specific GHG emissions and reduction of GHG emissions to, at minimum, the applicable GHG reduction threshold established in the CAP.

NEW **Policy AQ 19.4:** *All discretionary project proposals shall analyze their project-specific GHG reduction targets in comparison to the "business as usual" (BAU) scenario for the development's operational life and the "operational life" of a new development shall be defined as a 30-year span. Other methods for calculating BAU and showing GHG emissions reductions may be used provided such methods are both scientifically defensible and show actual emission reduction measures incorporated into project design, mitigation or alternative selection. Alternatively, a project may use the CAP Screening Tables to show the attainment of the applicable number of points needed to ensure adequate GHG reductions and CAP compliance.*

NEW **Policy AQ 20.1:** *Reduce VMT by requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes. Improve connectivity of the multi-modal facilities by providing linkages between various uses in the developments.*

NEW **Policy AQ 20.2:** *Reduce VMT by facilitating an increase in transit options. In particular, coordinate with adjacent municipalities, transit providers and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation.*

NEW **Policy AQ 20.3:** *Reduce VMT and GHG emissions by improving circulation network efficiency.*

NEW **Policy AQ 20.4:** *Reduce VMT and traffic through programs that increase carpooling and public transit use, decrease trips and commute times, and increase use of alternative-fuel vehicles.*

NEW **Policy AQ 20.5:** *Reduce emissions from standard gasoline vehicles, through VMT, by requiring all new residential units to install circuits and provide capacity for electric vehicle charging stations.*

NEW **Policy AQ 20.6:** *Reduce emissions from commercial vehicles, through VMT, by requiring all new commercial buildings, in excess of 162,000 square feet, to install circuits and provide capacity for electric vehicle charging stations.*

NEW **Policy AQ 20.7:** *Reduce VMT through increased densities in urban centers and encouraging emphasis on mixed use to provide residential, commercial and employment opportunities in closer proximity to each other. Such measures will also support achieving the appropriate jobs-housing balance within the communities.*

NEW **Policy AQ 20.8:** *Reduce VMT by increasing options for non-vehicular access through urban design principles that promotes higher residential densities with easily accessible parks and recreation opportunities nearby.*

NEW **Policy AQ 20.9:** *Reduce urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations, and to maximize protection of open space.*

NEW **Policy AQ 20.10:** *Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading as well as passive solar design.*

NEW **Policy AQ 20.11:** *Increase energy efficiency of the new developments through efficient use of utilities (water, electricity, natural gas) and infrastructure design. Also, increase energy efficiency through use of energy efficient mechanical systems and equipment.*

NEW **Policy AQ 20.12:** *Support programs to assist the energy-efficient retrofitting of older affordable housing units, particularly residential units built prior to 1978 when Title 24 energy requirements went into effect.*

NEW **Policy AQ 20.13:** *Reduce water use and wastewater generation in both new and existing housing, commercial and industrial uses. Encourage increased efficiency of water use for agricultural activities.*

NEW **Policy AQ 20.14:** *Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance 859 and increase use of non-potable water.*

NEW **Policy AQ 20.15:** *Decrease energy costs associated with treatment of urban runoff water through greater use of bioswales and other biological systems.*

NEW **Policy AQ 20.16:** *Preserve and promote forest lands and other suitable natural and artificial vegetation areas to maintain and increase the carbon sequestration capacity of such areas within the County. Artificial vegetation could include urban forestry and reforestation, development of parks and recreation areas, and preserving unique farmlands that provide additional carbon sequestration potential.*

NEW **Policy AQ 20.17:** *Protect vegetation from increased fire risk associated with drought conditions to ensure biological carbon remains sequestered in vegetation and not released to the atmosphere through wildfires.*

NEW **Policy AQ 20.18:** *Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.)*

NEW **Policy AQ 20.19:** *Facilitate development of sitting of renewable energy facilities and transmission lines in appropriate locations.*

NEW **Policy AQ 20.20:** *Reduce the amount of solid waste generation by increasing solid waste recycle, maximizing waste diversion, and composting for residential and commercial generators. Reduction in decomposable organic solid waste will reduce the methane emissions at County landfills.*

NEW **Policy AQ 20.21:** *Provide homeowner education programs on the various voluntary ways in which they may reduce their homes' GHG emissions, e.g. improving home insulation, adding solar energy capabilities, and providing information on energy saving landscaping techniques.*

NEW **Policy AQ 20.22:** *Develop motorist education programs on reducing VMT, idling and vehicle maintenance, while increasing carpooling and public transit usage.*

NEW **Policy AQ 20.23:** *Development education programs about green purchasing and waste reduction measures, e.g., use of sustainable materials, recycling, and composting.*

NEW **Policy AQ 20.24:** *Develop programs to improve job-housing balances, such as through small business development, for areas that are housing rich but jobs poor.*

NEW **Policy AQ 20.25:** *Coordinate County GHG emissions reduction efforts with those of other regional agencies and plans, i.e., SCAG's Compass Blueprint, Regional Transportation Plan (RTP) and SCAQMD's Air Quality Management Plans. In addition, coordinate with cities and sub-regional planning agencies, particularly WRCOG and CVAG, on efforts that jointly affect the County and the cities. Also, coordinate with utility and service providers to develop programs to improve energy efficiency, water efficiency and delivery or structural improvements to reduce demand or better coordinate infrastructure development, as appropriate.*

NEW **Policy AQ 20.26:** *Voluntary GHG reduction objectives for the community sector shall be achieved through development and implementation of specific implementation measures, as determined appropriate and feasible by the County.*

NEW **Policy AQ 20.27:** *Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel through fleet transitioning programs. Also, reduce total vehicle miles travel by County employees, both community to work sites and travel for the conduction of County activities.*

NEW **Policy AQ 20.28:** *Increase the energy efficiency of all existing and new County buildings and infrastructure operations (roads, water, waste disposal and treatment, buildings, etc.) Also, decrease energy use through incorporating renewable energy facilities (such as, solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.*

NEW **Policy AQ 20.29:** *Establish purchasing and procurement policies that support the use of green products and services, minimize waste, and promote sustainability.*

NEW **Policy AQ 20.30:** *Reduce potable water use, wastewater and solid generation, and urban runoff at both new and existing County facilities and operations. Also, increase the amount of materials recycled from County facilities.*

NEW **Policy AQ 21.1:** *The County shall require new development projects subject to County discretionary approval to incurporate measures to achieve 100 points through incorporation of the Implementation Measures (IMs) found in the Screening Tables within the Riverside County Climate Action Plan. One hundred points represent a project's fare-share of reduction in operational emissions associated with the developed use needed to reduce emissions down to the CAP Reduction Target.*

a. *This reduction shall be measured in comparison to the "business as usual" (BAU) scenario for the development's operational life. The BAU scenario shall be consistent with the General Plan build out assumptions detailed in Appendix E-1 of the General Plan.*

b. *For the purposes of this policy, the "operational life" of a new development shall be defined as a 30-year span with construction emissions amortized over the 30 years.*

c. *For the purposes of this policy, "new development" refers to private development occurring pursuant to a discretionary land use approval issued by the County of Riverside and subject to binding Conditions of Approval. This definition generally corresponds to projects found non-exempt pursuant to the California Environmental Quality Act (CEQA), but is nevertheless subject to the sole discretion of the County of Riverside as lead agency.*

d. *Other methods for calculating BAU and showing GHG emissions reductions may be used provided such methods are both scientifically defensible and show actual emission reduction measures incorporated into project design, mitigation or alternative selection. That is, reductions must not be illusory "paper" reductions achieved merely through baseline manipulation.*

e. *Nothing in this policy shall be construed as accepting any proposed discretionary project from any legally applicable CEQA requirements or explicitly limiting the scope any analyses required to show CEQA compliance.*

NEW **Policy AQ 21.2:** *Implementation Measures found necessary for a given project pursuant to the CAP Screening Tables shall be incorporated into a project's Conditions of Approval issued by the County to ensure the measures are implemented appropriately.*

NEW **Policy AQ 21.3:** *Discretionary Measures - Because of the varied nature of the private development proposals reviewed by the County, in some cases, the Implementing Measures in the CAP may not provide the most appropriate means for achieving the required Interim GHG reductions. In such cases, the following alternate measures may be utilized, at the County's discretion:*

a. *For large-scale developments, such as specific plans, business parks, industrial centers and those triggering a full environmental impact report, a custom GHG analyses may be warranted to both assure compliance with the applicable targets herein and to provide a customized array of appropriate reduction measures.*

b. *In such cases, the resultant GHG analysis may be used to develop customized GHG reduction measures in place of the CAP's Implementing Measures provided they achieve the stated targets or implement all feasible mitigation short of achieving the applicable targets.*

c. *Project-specific analysis may be particularly valuable when assessing large-scale mixed use developments. In such developments, significant energy efficiencies and VMT reductions can result from smart growth design features, such as provision of housing, jobs, services and recreation within a 5- to 10-minute walking radius. Project-specific analysis in these cases may result in the need for fewer add-on Implementing Measures and potentially yield substantial savings on construction costs.*

NEW **Policy AQ 21.4:** *Implementation of the Climate Action Plan (CAP) and monitoring progress toward the CAP reduction targets shall include the ability to expand upon or, where appropriate, update or replace the Implementation Measures established herein such that the implementation of the CAP accomplishes the county's GHG reduction targets.*

NEW **Policy AQ 22.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions associated with transportation:*

a. *Reduce vehicle miles traveled by providing or requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes.*

b. *Reduce vehicle miles traveled by facilitating an increase in transit options. In particular, coordinate with adjacent municipalities, transit providers and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation.*

c. *Improve connectivity by requiring pedestrian linkages between developments and transportation facilities, as well as between residential and commercial, recreational and other adjacent land uses.*

d. *Reduce air pollution and greenhouse gas emissions by improving circulation network efficiency.*

e. *Reduce traffic through programs that increase carpooling and public transit use, decrease trips and commute times and increase use of alternative-fuel vehicles.*

f. *Preserve transportation corridors for renewable energy transmission lines and for new transit lines, where appropriate.*

NEW **Policy AQ 23.1:** *The County shall implement programs and requirements to achieve the following objective related to reducing greenhouse gas emissions associated with land use patterns:*

a. *Reduce vehicle miles travelled (VMT) through increased densities in urban centers and emphasis on mixed use to provide localized residential, commercial and employment opportunities in closer proximity to each other.*

b. *Prevent urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations and to maximize protection of open space, particularly forests, which provide carbon sequestration potential.*

c. *Conserve energy by increasing the efficiency of delivery of services through the adoption and implementation of smart growth principles and policies.*

d. *Reduce vehicle miles travelled by commuters through implementation of planning measures that provide appropriate jobs-housing balances within communities.*

e. *Reduce vehicle miles travelled by increasing options for non-vehicular access through urban design principles that promote higher residential densities in attractive forms with easily accessible parks and recreation opportunities nearby.*

f. *Improve energy efficiency through implementation of standards for new residential and commercial buildings that achieve energy efficiencies beyond that required under Title 24 of the California Code of Regulations.*

g. *Reduce vehicle miles travelled by identifying sites for affordable housing for workers close to employment centers and encouraging development of such sites.*

NEW **Policy AQ 23.2:** *For discretionary actions, land use-related greenhouse gas reduction objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for individual future projects. County programs shall also be developed and implemented to address land use-related reductions for County operations and voluntary community efforts.*

NEW **Policy AQ 24.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions achieved through improving energy efficiency and increasing energy conservation:*

a. Require new development (residential, commercial and industrial) to reduce energy consumption through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design. Passive solar design addressed the innate heating and cooling effects achieved through building design, such as selective use of deep eaves for shading, operable windows for cross-ventilation, reflective surfaces for heat reduction and expanses of brick for thermal mass (passive radiant heating).

b. Require new development (residential, commercial and industrial) to design energy efficiency into the project through efficient use of utilities (water, electricity, natural gas) and infrastructure design.

c. Require new development (residential, commercial and industrial) to reduce energy consumption through use of energy efficient mechanical systems and equipment.

d. Establish or support programs to assist in the energy-efficient retrofitting of older affordable housing units.

e. Actively seek out existing or develop new programs to achieve energy efficiency for existing structures, particularly residential units built prior to 1978 when CCR Title 24 energy efficiency requirements went into effect.

f. Balance additional upfront costs for energy efficiency and affordable housing economic considerations by providing or supporting programs to finance energy-efficient housing.

NEW **Policy AQ 24.2:** *For discretionary actions, energy efficiency and conservation objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for all new development approvals. County programs shall also be developed and implemented to address energy efficiency and conservation efforts for County operations and the community.*

NEW **Policy AQ 25.1:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions through water conservation:*

a. Reduce water use in both new and existing housing, commercial and industrial uses.

b. Reduce wastewater generation in both new and existing housing, commercial and industrial uses.

c. Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance No. 859.

d. Increase use of non-potable water where appropriate, such as for landscaping and agricultural uses.

e. Encourage increased efficiency of water use for agricultural activities.

f. Decrease energy costs associated with treatment of urban runoff water through greater use of bioswales and other biological systems.

NEW **Policy AQ 25.2:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions through biota conservation:*

a. Conserve biota that provides carbon sequestration through implementation of the Multiple Species Habitat Conservation Plans for western and eastern Riverside County.

b. Preserve forest lands and other suitable natural vegetation areas to maintain the carbon sequestration capacity of such areas within the county.

c. Promote establishment of vegetated recreational uses, such as local and regional parks, that provide carbon sequestration potential in addition to opportunities for healthy recreation.

d. Promote urban forestry and reforestation, as feasible, to provide additional carbon sequestration potential.

e. Promote the voluntary preservation of farmlands for carbon sequestration purposes. In particular, protect important farmlands and open space from conversion and encroachment by urban uses. Also, seek to retain large parcels of agricultural lands to enhance the viability of local agriculture and prevent the encroachment of sprawl into rural areas.

f. Promote the voluntary preservation of areas of native vegetation that may contribute to biological carbon sequestration functions.

g. Protect vegetation from increased fire risks associated with drought conditions to ensure biological carbon remains sequestered in vegetation and not released to the atmosphere through wildfires. In particular, prevent unnecessary intrusion of people, vehicles and development into natural open space areas to lessen risk of wildfire from human activities.

NEW **Policy AQ 25.3:** *For discretionary actions, greenhouse gas reduction objectives related to water and biota conservation shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan. County programs shall also be developed and implemented to address conservation issues related to County operations and voluntary community efforts.*

NEW **Policy AQ 26.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions derived from energy generation:*

a. Encourage the installation of solar panels and other energy-efficient improvements.

b. Facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).

c. Facilitate development of renewable energy facilities and transmission lines in appropriate locations.

d. Facilitate renewable energy facilities and transmission line siting.

e. Provide incentives for development of local green technology businesses and locally produced green products.

f. Provide incentives for investment in residential and commercial energy efficiency improvements.

g. Identify lands suitable for wind power generation or geothermal production and encourage development of these alternative energy sources.

NEW **Policy AQ 26.2:** *For discretionary actions, the objectives for greenhouse gas reduction through increased use of alternative energy sources shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan. County programs shall also be developed and implemented to address use of alternative energy for County operations and within the community.*

NEW **Policy AQ 27.1:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions associated with wastes:*

a. Reduce the amount of solid waste generated.

b. Increase the amount of solid waste recycled by maximizing waste diversion, composting and recycling for residential and commercial generators.

c. Promote reductions in material consumption.

d. Decrease wastewater generation.

e. Reduce fugitive methane emissions and increase methane conversion to alternative energies at County landfills.

NEW **Policy AQ 27.2:** *Greenhouse gas reduction through the above waste reduction objectives shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan for new development. County programs shall also be developed and implemented to address waste reductions for County operations and voluntary community efforts.*

NEW **Policy AQ 28.1:** *The County shall implement programs and requirements to achieve voluntary greenhouse gas emissions reductions through the following public education and outreach objectives:*

a. Provide homeowner education programs on the various voluntary ways in which they may reduce their homes' GHG emissions.

b. Develop and implement motorist education programs on reducing vehicle miles travelled (VMT), idling, vehicle maintenance, etc.

c. Develop and implement incentive programs for increasing carpooling, public transit use and other similar means.

d. Develop and implement incentive programs for residential energy conservation, such as through retrofitting to improve insulation values, adding solar energy capabilities, planting deciduous trees to provide summer shade, etc.

e. Develop and implement programs designed to decrease transportation emissions, such as hybrid vehicle rebates, alternate fuel discounts, carpooling incentives, van pools, etc.

f. Develop and implement education programs about green purchasing and waste reduction measures, consistent with the County's Climate Action Plan e.g., use of sustainable materials, composting and such.

g. Develop and implement programs to improve job-housing balances, such as through small business development, for areas that are housing rich but jobs poor.

h. Develop and implement programs, consistent with the County's Climate Action Plan to incentive recycling and other waste reduction programs.

NEW **Policy AQ 28.2:** *The County shall implement programs and requirements to achieve greenhouse gas emissions reductions through the following interagency coordination Objectives:*

a. Coordinate County regional GHG reduction efforts with those of other regional agencies and plans, i.e.:

- *SCAG Regional Blueprint Plan*

- *SCAG Regional Transportation Plan (which will address SB 375)*
- *SCAQMD Air Quality Management Plans*
- *SB 375 Coordination and "Sustainable Communities Strategies"*

b. *Coordinate with constituent cities and sub-regional planning agencies, particularly WRCOG and CVAG, on GHG reduction efforts that jointly affect the county and these cities.*

c. *Coordinate with utility and service providers serving the county to develop programs to improve energy efficiency, water efficiency and delivery or structural improvements to reduce demand or better coordinate infrastructure development, as appropriate.*

d. *Coordinate with regional agencies responsible for developing utility corridors, particularly for electricity transmission, to ensure alternate energy sources available to the county are used to their fullest extent.*

NEW **Policy AQ 28.3:** *Voluntary greenhouse gas reduction objectives for the community sector shall be achieved through development and implementation of specific implementation measures, as determined appropriate and feasible by the County.*

NEW **Policy AQ 29.1:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions from County transportation, such as fleet composition, construction equipment, employee commuting and travel on County business:*

a. *Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel.*

b. *Increase use of alternative and lower carbon fuels in the County vehicle fleet.*

c. *Reduce total vehicle miles traveled by County employees, both commuting to work sites and traveling for the conduction of County activities.*

NEW **Policy AQ 29.2:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions through improving energy efficiency for County facilities and operations:*

a. *Improve the energy efficiency of all existing and new County buildings.*

b. *Improve the energy efficiency of County infrastructure operation (roads, water, waste disposal and treatment, buildings, etc.)*

c. *Decrease energy use through incorporating renewable energy facilities (such as, solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.*

NEW **Policy AQ 29.3:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through achieving waste reduction and resource efficiency for County facilities and operations:*

a. *Establish purchasing and procurement policies that support the use of green products and services, minimize waste and promote sustainability.*

b. *Reduce potable water use at both new and existing County facilities and operations.*

c. *Reduce wastewater generation and urban runoff in both new and existing County facilities and operations.*

d. Increase the amount of materials recycled from County facilities while decreasing the amount of solid waste generated by County facilities that requires landfill disposal.

NEW **Policy AQ 29.4:** *Greenhouse gas emissions reduction objectives for County operations and facilities shall be achieved through development and implementation of enforceable and binding internal County policies, programs or similar means.*

4. Multipurpose Open Space (OS) Element

Policy OS 16.1: Continue to implement Title 24 of the ~~State Building Code~~ *California Code of Regulations (the California Building Standards Code), particularly Part 6 (the California Energy Code) and Part 11 (the California Green Building Standards Code), as amended and adopted pursuant to County ordinance*. Establish mechanisms and incentives to encourage architects and builders to exceed the energy efficiency standards ~~of~~ *within CCR* Title 24.

4.7.4 Thresholds of Significance for Greenhouse Gases

The proposed project would result in a significant greenhouse gas emissions impact if it would:

A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.7.5 Effect of GPA No. 960 on the General Plan and on Greenhouse Gases

As the GHG threshold for determining if emissions would be significant, this EIR uses compliance with AB 32. AB 32, the California Global Warming Solutions Act of 2006, requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. Per its Scoping Plan, CARB recommends to local governments that they adopt a 2020 reduction target that requires a decrease of approximately 15% below current GHG emissions to reach 1990 GHG levels (CARB AB 32 Scoping Plan, page 3). Thus, analysis for this EIR focused on two areas: a) determining the GHG reductions necessary to be found less than significant pursuant to AB 32, and b) developing a program that accomplishes the necessary reductions to ensure future development authorized pursuant to the General Plan is consistent with both AB 32 and the County's Climate Action Plan.

The baseline (2008) Riverside County scenario was calculated as presented in Section 4.7.2. The proposed project's future GHG emissions were analyzed for three different timelines: 2020, 2035 and 2060. For each of these years, emissions were calculated under a BAU scenario and a reduced scenario. The BAU scenarios follow the growth projections in the General Plan update for the various land uses in Riverside County but does not include implementation of the policies to reduce GHG emissions. The inclusion of BAU scenarios allows for evaluation of the growth of emissions from various sectors and sources over time, which provides additional insight into where attention should focus in regard to reducing emissions through policies and implementation measures. The reduced scenarios provide an estimate of Riverside County's emissions with the implementation of the GHG-reducing policies in the General Plan and CAP's Implementation Measures.

Each year was analyzed for a different reason. The 2020 scenarios align with the AB 32 Global Warming Solutions Act and are used to assess consistency with the 2020 target established under AB 32. Both the 2020 (reduced scenario) and the 2035 emissions analyses are used to assess consistency with the targets established under SB 375 for the reduction of GHG emissions from passenger vehicles. The 2060 analysis presents emissions estimate for the build out of the proposed General Plan; to date, targets have not been established to reduce emissions at the year 2060.

A. Future Development Construction Emissions

Air pollutant emissions, including GHGs, are generally associated with two types of activities: construction and operation. Since the bulk of a project's emissions come from operations, the various scenarios presented in this chapter all focus on operational emissions. Nevertheless, examination of construction emissions was also made where feasible to elucidate the scope of this type of emissions.

Construction activities include the clearing and grading of land, building of structures and the installation of utilities and road, as well as the vehicle trips associated with the site's workers, deliveries of build materials, etc. Accordingly, the emissions associated with construction tend to be site specific and depend upon the type of construction and development proposed, as well as the location, time of year and duration, among other things. Because these factors can vary so widely, estimating construction emissions or impacts for future development expected as Riverside County builds out according to the plans in the General Plan (existing or proposed) is infeasible. Nevertheless, to provide a reference of the types of GHG emissions associated with "typical" construction activities, several hypothetical scenarios were modeled for three types of residential development. See Table 4.7-D (Construction GHG Emissions – Residential Examples), below. Construction estimates for commercial and industrial uses were not modeled as such uses vary too widely to be accurately typified. Generally, speaking emissions from construction of commercial and industrial uses can be roughly equivalent to the emissions shown for residential construction to three times higher than the emissions from similarly sized residential construction sites. Within that general range there are exceptions where some types of commercial construction may be much lower than or significantly higher than this approximate range.

Table 4.7-D: Construction GHG Emissions – Residential Examples

Construction Activity	Construction Emissions (Metric Tons CO_2)		
	5 Acre (190 MFR)	25 Acre (75 SFR)	50 Acre (150 SFR)
2012	303.48	303.65	386.36
2013	218.22	171.85	267.39
Project Total	521.7	475.5	653.75
Annual Total, Amortized Over 30 Years	17.39	15.85	21.79
CUMULATIVE* TOTAL	**55.03 MT CO_2**		

* Total if all three [of the example] projects undergoing construction simultaneously.
Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

For the residential examples analyzed, GHG emissions would result from onsite grading activities, transport of materials to and from the site and the actual building construction, painting and paving associated with the individual developments. Residential development acreages can range from less than an acre to well over a hundred in some cases. Keeping in mind that a variety of projects would be undertaken, examples of construction of residential development on 5, 25 and 50 acres are presented herein. These construction emission estimates are based on the default construction phase lengths and equipment usage provided in the URBEMIS2007 model. Table 4.7-D summarizes the annual CO_2 emissions for each project example. Following SCAQMD methodology found in the 2008 "SCAQMD Draft Guidance: Interim CEQA Greenhouse Gas Significance Thresholds," the

construction emissions were amortized over a 30-year economic lifetime of the project. If all three development projects presented were occurring at the same time, the total amortized residential construction emissions would be 55.03 MT CO_2e per year.

Generalizing for both residential and commercial construction, total amortized construction emissions could be approximately 1.38 MT CO_2e per acre of construction per year. This value was approximated by taking the 55.03 MT CO_2e per year for 80 acres of residential construction, multiplying that value by 3 to approximate 80 acres of commercial/industrial construction (165.09 MT CO_2e) adding the two together, then dividing by the total acreage (160 acres). This value is an approximation for informational purposes and can vary widely depending upon the type and intensity of construction occurring at any given time.

B. Future 2020 Operational Emissions

GHG emissions are primarily important in the context of other statewide and global emissions, which on an aggregate basis have and will affect global climate. While the evaluation presented below is focused on and specific to the updated General Plan, it is also considered cumulative because it is only cumulative contributions of GHGs that have environmental consequences at the global scale. Therefore, the 2020 analysis below addresses both the project and cumulative impacts for GHGs.

1. 2020 Business as Usual (BAU) Scenario Emissions

For 2020, emissions estimates were based on the anticipated growth in population, housing and employment for Riverside County. The 2020 growth projections were interpolated from General Plan build out conditions as updated to reflect current trends and statistics pursuant to General Plan Appendix E-1 (Methods and Assumptions). Predicted 2020 BAU vehicle trips were estimated by using the given build out (2060) conditions for the updated Riverside County General Plan and interpolating back to year 2020.

The BAU emissions inventory for Riverside County represents the emissions expected in the year 2020 based on the General Plan build out conditions. These emissions do not include the proposed General Plan policies and Implementation Measures directed toward reducing emissions. In 2020, Riverside County is projected to emit a total of 10.27 MMT of CO_2e; this projection is based on existing emissions plus Riverside County's anticipated growth, as projected by the updated General Plan. As per state guidelines, reduction initiatives coming from the state or other agencies are not included in the BAU scenario. Such reduction measures and their anticipated emission reductions in Riverside County are included in the reduced emissions inventory discussed in the subsequent section, Section 4.7.6. Table 4.7-E (2020 BAU – Operational GHG Emissions Inventory), below, describes the forecasted BAU emissions for Riverside County in the year 2020. Figure 4.7.2 (2020 BAU Greenhouse Gas Emissions) provides a graphical representation of the same data.

Table 4.7-E: 2020 BAU - Operational GHG Emissions Inventory

Emissions Category & Sub-category	Metric Tons of CO_2e	Percent of Total
Transportation	**6,977,331**	**58%**
On-road Vehicles	6,956,170	
Airport Operations	21,161	
Energy	**2,830,246**	**23%**
Electricity [1]	1,923,508	
Natural Gas [2]	906,738	

Emissions Category & Sub-category	Metric Tons of CO_2e	Percent of Total
Solid Waste	**181,728**	**1%**
Landfill Offgassing [3]	176,584	
Onsite Equipment	5,145	
Area Sources	**442,0024**	**4%**
Landscaping Equipment	250,422	
Wood Burning	191,603	
Purchased Water [4]	**175,344**	**2%**
Agriculture	**1,522,823**	**13%**
Enteric Fermentation	86,688	
Manure Management	149,905	
Agriculture Residue Burning	124	
Crop Growth	924,811	
Animals and Runoff	176,674	
Fertilizer Use	184,621	
GRAND TOTAL	**12,129,497**	**100%**

Footnotes:
1. Includes electricity used for local water supply and wastewater treatment.
2. Includes natural gas-using stoves, grills, barbecues and other heating devices.
3. Per U.S. EPA standards, does not include landfill decomposition emissions.
4. Indirect (outside of county) electricity use for importation of water.

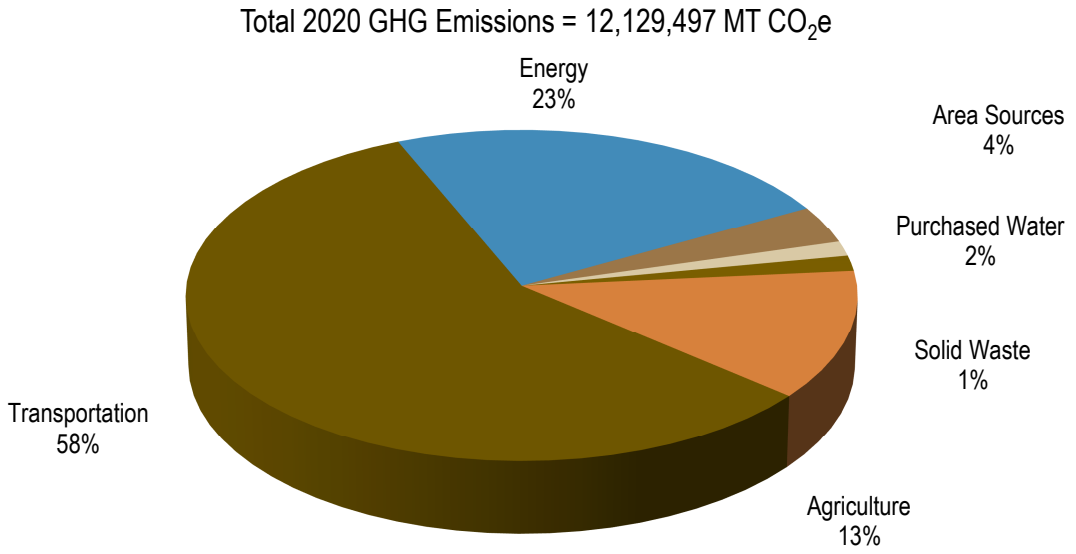
Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

2020 Adjusted BAU

As noted earlier, AB 32 calls for state reductions of GHGs by roughly 15% from current levels by the year 2020. With Riverside County's BAU scenario for 2020 GHG emissions calculated, it is now possible to establish the GHG reduction measures necessary to reduce 2020 emissions. To accomplish this, Riverside County has prepared a Climate Action Plan (CAP) that details a variety of actions necessary to reduce GHGs across a number of sectors. Key to these measures are a series of IMs that may be used by new development proposals to demonstrate consistency with Riverside County's CAP (and, hence, AB 32). Alternatively, individual future developments that wish to model and mitigate their projects directly may also do so. Such analyses would also have to show consistency with Riverside County's CAP by demonstrating a 25% reduction in GHG emissions as compared to the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects and by including all measures necessary to achieve such reductions in the project's design (i.e., site plans), Riverside County Conditions of Approval or project-specific CEQA mitigation measures, as applicable. The adjusted BAU is based upon the 2020 adjusted BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011). See the mitigation measures outlined in Section 4.7.6 for additional details.

Riverside County Climate Action Plan (CAP) Implementation Measures Program: The CAP includes a series of IMs that address various steps to reduce GHGs in Riverside County. It also includes two sets of Screening Tables. These Screening Tables assign a point value to each IM in the CAP. They also assign points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as "feature"). The point values correspond to the minimum emissions reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG mitigation measures. Projects that garner at least 100 points would be consistent with the reduction quantities anticipated in Riverside County's GHG analysis described below. As such, those projects that garner a total of 100 points or greater would not require quantification of project-specific GHG emissions and a GHG Reduction Plan. Consistent with the State CEQA Guidelines (Section 15183.5), such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

Figure 4.7.2: 2020 BAU Greenhouse Gas Emissions



Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

The total emission reductions offered by each measure is based on both changes in existing land use activities as well as how new development is designed and built. The points were proportioned by residential unit or square feet of commercial/industrial uses. This was accomplished by taking the predicted growth in households and commercial/industrial uses by the year 2020 and proportioning the appropriate IM reduction quantities for new development to the residential and commercial/industrial land use sectors within the Screening Tables. These calculations result in point values that are allocated by residential unit or commercial/industrial square footage. Because of this, the size of the project is not relevant to the Screening Tables. Regardless of size, each project needs to garnish 100 points to demonstrate consistency with the CAP. If development projects each garnish a minimum of 100 points in GHG emissions reductions, then Riverside County would be able to achieve the 2020 reduced scenario inventory shown in Table 4.7-F (2020 Reduced GHG Emissions Inventory) and Table 4.7-G (2020 Operational GHG Emissions – Scenario Comparisons), below, and achieve the reduction target. Therefore, the 100 points constitute a Project's "fair share" of GHG emissions reductions within the County of Riverside.

2. 2020 Reduced Scenario Emissions

In 2020, total emissions from Riverside County are projected to total 10.27 MMT CO_2e, without the incorporation of any reduction measures. With the incorporation of both the state reduction measures and Riverside County's Implementation Measures detailed in the CAP, Riverside County emissions for 2020 would be reduced to an estimated 6.03 MMT CO_2e. Emission reductions estimated for year 2020 were based on the efforts likely to be achieved pursuant to the Implementation Measures detailed in the CAP.

With the incorporation of the CAP's IMs as mitigation for new development, Riverside County is predicted to reduce emissions by 4.23 MMT CO_2e from the BAU 2020 emissions. As this represents a 25% decrease from emissions from new development compared to the adjusted 2020 BAU and a 15% decrease from 2008 levels, Riverside County's 2020 emissions would be below the AB 32 reduction target. Table 4.7-F (2020 Reduced GHG Emissions Inventory) describes the predicted 2020 inventory with implementation of GPA 960. Figure 4.7.3

(2020 Reduced Scenario – Operational Greenhouse Gas Emissions) is a graphical representation of that same data.

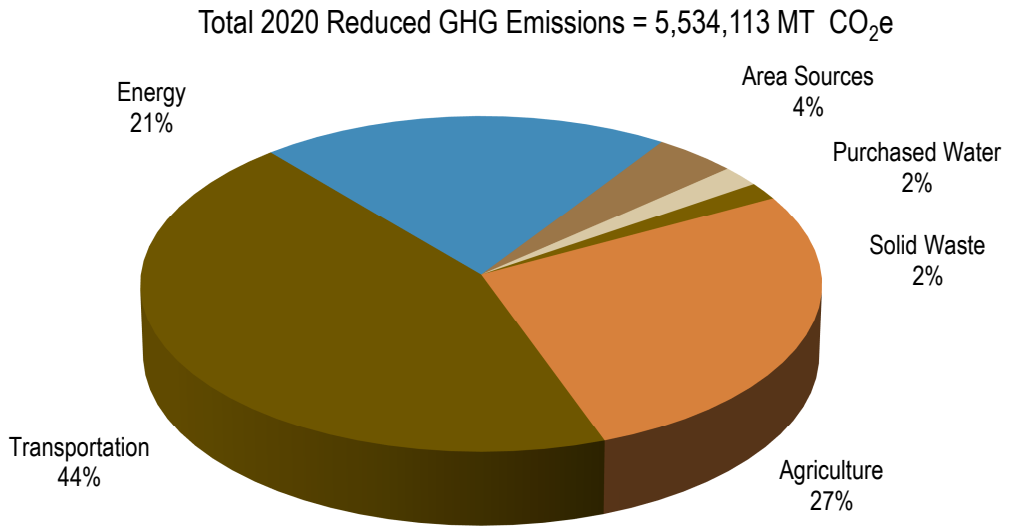
Table 4.7-F: 2020 Reduced GHG Emissions Inventory

Emissions Categories	GHG Emissions (Metric Tons CO_2e)[1]	Percent of Total
Transportation	**2,454,032**	**44%**
On-road Vehicles	2,432,871	
Airport Operations	21,160	
Energy	**1,1,41,380**	**21%**
Electricity [2]	637,156	
Natural Gas [3]	504,224	
Solid Waste	**92,273**	**2%**
Landfill Off-gassing [4]	87,128	
Onsite Equipment	5,145	
Area Sources	**230,188**	**4%**
Landscaping Equipment	126,463	
Wood Burning	103,725	
Purchased Water [5]	**109,021**	**2%**
Agriculture	**1,507,220**	**27%**
Enteric Fermentation	80,050	
Manure Management	140,940	
Agriculture Residue Burning	120	
Crop Growth	924,810	
Animals and Runoff	176,670	
Fertilizer Use	184,620	
GRAND TOTAL	**5,534,113**	**100%**

Footnotes:
1. All values rounded to nearest 10. Thus, totals may not sum precisely. See Appendix EIR-6 for full data.
2. Includes electricity used for local water supply and wastewater treatment.
3. Includes natural gas-using stoves, grills, barbecues and other heating devices.
4. Per U.S. EPA standards, does not include landfill decomposition emissions.
5. Indirect (outside of county) electricity use for importation of water.

Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. (See Appendix EIR-6.)

Figure 4.7.3: 2020 Reduced Scenario – Operational Greenhouse Gas Emissions



Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. (See Appendix EIR-6).

3. Emissions Comparison Summary

Table 4.7-G (2020 Operational GHG Emissions – Scenario Comparisons) summarizes existing 2008, BAU 2020 and reduced 2020 GHG emissions inventories. The reduced 2020 inventory describes Riverside County's GHG emissions for implementation of the updated General Plan *with* the incorporation of the CAP's Implementation Measures for new development.

Table 4.7-G: 2020 Operational GHG Emissions – Scenario Comparisons

Source Category	Net Total Emissions (Metric tons of CO_2e)[1]		
	2008	**BAU 2020**	**Reduced 2020**
Transportation	2,850,520	6,977,330	2,454,032
Energy	1,577,670	2,830,250	1,141,380
Area Sources	269,180	442,030	203,190
Water and Wastewater	152,470	175,340	109,020
Solid Waste	132,670	181,730	92,273
Agriculture	2,030,430	1,522,820	1,507,220
Totals	**7,012,940**	**12,129,823**	**5,534,113**
AB 32 Target[2]	5,960,998	5,960,998	5,960,998
Significant?	***Yes[3]***	***Yes[3]***	***No***

Footnotes:
1. All values rounded to nearest 10. Thus, totals may not sum precisely. See study (Appendix EIR-6) for full results.
2. Target value based on necessary reductions from BAU per AB 32.
3. Result significant if no mitigation is applied. See Section 4.7.6 for mitigation discussion.

Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. (See Appendix EIR-6).

C. Consistency with Post 2020 Emissions Reduction Targets

1. SB 375 (Year 2035 Analysis)

In determining whether or not the project would "conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases," the County of Riverside qualitatively demonstrates how the proposed General Plan, as updated pursuant to GPA No. 960, would comply with the policies, programs and reduction measures set forth in AB 32 and SB 375. To that end, an analysis was performed to evaluate whether the proposed amended General Plan would appropriately incorporate and support the reduction measures found in the AB 32 Scoping Plan; shown as "R1" measures in the CAP and quantitatively evaluated by the 2020 analysis in the prior section. In addition, GHG analysis to 2035 was also required to demonstrate consistency with SB 375.

In accordance with SB 375, CARB and SCAG have collaboratively established a reduction target for passenger car emissions. This target consists of two parts: a reduction of 8% per capita by the year 2020 and a conditional target of 13% by the year 2035. SCAG is currently in the process of updating its Regional Transportation Plan (RTP) which will include the SCS. Table 4.7-~~1~~*H* (SB 375 Target Comparisons), below, summarizes the per-capita emissions from automobiles and light-duty trucks for the existing conditions, forecasted emissions for 2020 and 2035 based on General Plan Build out (2020, 2035 BAU) and the reduced emissions for 2020 and 2035 to be achieved through implementation of the proposed General Plan policies, mitigation measures and the CAP. As per the targets stated above, CARB (2010a) calculated that the SCAG region, including Riverside County, would need to achieve 3.07 $MTCO_2e$ per person per year for 2020 (8% reduction) and 2.90 $MTCO_2e$ per person per year for 2035 (13% reduction). As shown by the data in Table 4.7-~~1~~*H*, without the incorporation of this project's mitigation measures unincorporated Riverside County's per-capita emissions from passenger vehicles would be 3.86 $MTCO_2e$ per person in 2020 and 4.47 $MTCO_2e$ per person in 2035.

Table 4.7-~~1~~*H*: SB 375 Target Comparisons

Source Category	Per-Capita Passenger Vehicle Emissions (Metric Tons CO_2e)				
	2008	BAU 2020	Reduced 2020	BAU 2035	Reduced 2035
Autos and Light Duty Truck Emissions (MT CO_2e)*	2,512,800	6,150,727~~4,929,100~~	2,163,540 ~~2,702,400~~	9,100,000	2,800,400
Population (persons)*	553,500	880,600	880,600	969,100	969,100
Per Capita Emissions	***4.54***	***6.98 ~~5.60~~***	***2.45 ~~3.07~~***	***9.39***	***2.89***
SCAG SB 375 Target	---	3.07	3.07	2.90	2.90
Significant?	***---***	***Yes***	***No***	***Yes***	***No***

* Values in this category rounded to nearest 100. See study in Appendix EIR-6 for exact numbers.
Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. See Appendix EIR-6.

With the incorporation of the mitigation measures herein, per-capita emissions would be reduced to 2.46 $MTCO_2e$ per person in 2020, which achieves and is, in fact, below the SB 375 target. For 2035, it would be 2.85 $MTCO_2e$ per person, which is also below the 2035 target. Most of the mitigation measures enforced at the state level (e.g., Pavley fuel efficiency standards, etc.) have implementation plans only through 2020. Future fuel efficiency legislation at the state or federal level will likely contribute to further reductions in GHG emissions from passenger vehicles by 2035. The 2035 reduced scenario assumes the implementation of these state policies will continue at a similar rate after 2020.

2. Executive Order S-3-05 (Year 2060 analysis)

In June 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05 establishing the following GHG emission reduction targets:

- *By 2010, California shall reduce GHG emissions to 2000 levels.*
- *By 2020, California shall reduce GHG emissions to 1990 levels.*
- *By 2050, California shall reduce GHG emissions to 80% below 1990 levels.*

The State has provided clear guidance to local governments on a 2020 year reduction target and through implementation of AB-32 provided rules and regulations focused on GHG reductions at a statewide level to meet the 2020 reduction target shown above. In the AB-32 Scoping Plan, the State also recognized the need for local governments such as the County of Riverside to provide reduction measures within their jurisdiction to assist the state in meeting the 2020 reduction target. To that end, the County of Riverside Draft Climate Action Plan has focused the reduction measures to achieve the 2020 reduction target within the unincorporated areas of the County.

However, Executive Order S-3-05 also contains a 2050 GHG emissions reduction target of 80 percent below 1990 levels of emissions by 2050. The following discussion reviews potential GHG emissions at ultimate buildout which the County currently estimates will occur in approximately forty-five years (2060) and compares that with potential reductions to achieve the ultimate 2050 reduction target provided in Executive Order S-3-05.

2060 BAU Scenario Emissions

Table 4.7-~~H~~*I* (2060 Operational GHG Emissions – Scenario Comparisons) summarizes the County of Riverside existing 2008, BAU 2060 and reduced 2060 GHG emissions inventories. The BAU 2060 inventory represents Riverside County's forecasted emissions for the year 2060, the General Plan build out year under GPA 960, without the addition of any of the emissions-reducing strategies or mitigation measures described herein. The Reduced 2060 inventory includes the IMs used to reduce the 2020 emissions to below the AB 32 target. Given the level of growth and the current limitations on technology to further reduce emissions, GHG emissions for the full build out scenario in 2060 would not meet the 1990 reduction threshold, even with the included mitigation. Future planning efforts, including the forthcoming CAP, further advances in technology and additional (future project-specific) environmental analyses would be necessary to address this additional growth and its implications.

Table 4.7-~~H~~: 2060 Operational GHG Emissions – Scenario Comparisons

Source Category	Net Total Emissions (Metric tons of CO_2e)[1]		
	2008	BAU 2060	Reduced 2060
Transportation	2,850,520	10,338,870	10,338,870
Energy	1,577,670	6,084,370	6,084,370
Area Sources	269,180	721,400	721,400
Water and Wastewater	152,470	382,870	382,870
Solid Waste	132,670	703,890	703,890
Agriculture	2,030,430	1,522,820	1,522,820
Totals	**7,012,940**	**19,754,220**	**10,819,060**
AB 32 Target[2]	**5,960,998**	**5,960,998**	**5,960,998**
2050 Target[3]	**1,192,200**	**1,192,200**	**1,192,200**

Footnotes:
1. All values rounded to nearest 10. Thus, totals may not sum precisely. See study (Appendix EIR-~~6~~10) for full results.
2. Target value based on ~~necessary reductions from BAU~~ 1990 levels of emissions per AB 32.
3. Target value based on 80% below 1990 levels of emissions per Executive Order S-3-05.

Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. (See Appendix EIR-~~6~~10).

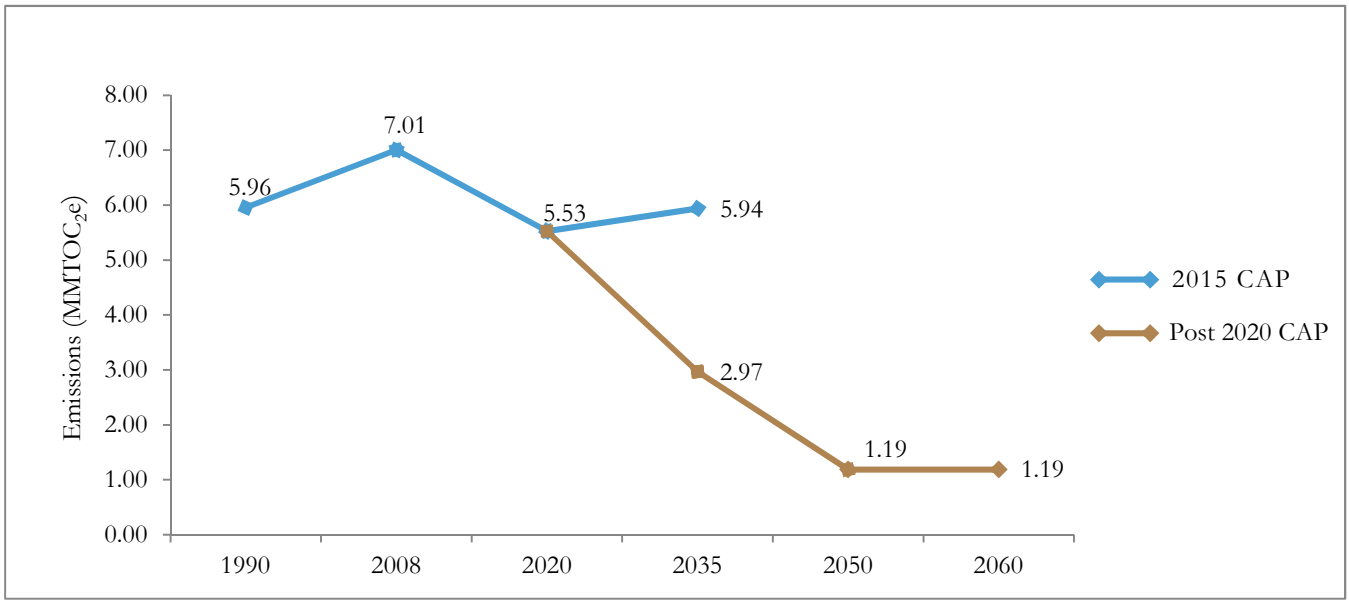
To ensure that GHG emissions continue on a downward trajectory after 2020, The County of Riverside will commence planning for the post-2020 period starting at the approximate midway point between plan implementation and the reduction target and after development of key ordinances and implementation of cost-effective measures. At that point, Riverside County will have implemented the first two phases of this CAP and will have a better understanding of the effectiveness and efficiency of different reduction strategies and approaches. Further, the state's regulations under AB 32 would have been fully in force since 2012; federal programs and policies for the near term are likely to be well underway; market mechanisms like a cap and trade system are likely to be in force and will be influencing energy and fuel prices; and continuing technological change in the fields of energy efficiency, alternative energy generation, vehicles, fuels, methane capture and other areas will have occurred. Riverside County will then be able to take the local, regional, state and federal context into account. Further, starting at the approximate midway point between plan implementation and the reduction target will allow for development of the post-2020 plan so that it can be ready for full implementation, including potential new policies, revisions to the General Plan (as necessary), programs, ordinances, and financing by 2020. The new plan will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader State and federal reduction targets and with the scientific understanding of the needed reductions by 2050. The County of Riverside will adopt the new plan by January 1, 2020.

The new CAP adopted on or before January 1, 2020, will keep on track through 2035 to meet the 2050 goal by implementing the following:

- *Increase energy efficiency and green building efforts (for County municipal facilities as well as new private buildings within the unincorporated areas) so that the savings achieved in the 2020 to 2035 timeframe are approximately 69% those accomplished in 2020.*
- *Continue to implement land use and transportation measures to lower VMT and shift travel modes (assumed improvement of 8% compared to the unmitigated condition, which is within SCAG's assumed range of 8% to 12% of GHG reductions for 2035).*
- *Capture more methane from landfills receiving regional waste, move beyond 75% local waste diversion goal for 2020, and utilize landfill gas further as an energy source.*
- *Continue to improve local water efficiency and conservation.*
- *Continue to support and leverage incentive and rebate and other financing programs for residential and commercial energy efficiency and renewable energy installations to shorten payback period and costs and to develop programs that encourage increased use of small-scale renewable power as it becomes more economically feasible.*

The conceptual effects of these strategies are presented in Table 7-2 in the Climate Action Plan and would represent an approximate doubling of effort from that planned at the state and County level for 2020. In total, the measures described above would produce reductions to bring the region's GHG emissions to an estimated 3 MMTCO2e by 2035. While the potential mix of future GHG reduction measures presented in this section is preliminary, it serves to demonstrate that the current measures in the CARB Scoping Plan and the County's CAP can not only move the region to its 2020 goal, but can also provide an expandable framework for much greater long-term greenhouse gas emissions reductions toward the ultimate 2050 goal. Figure 4.7-4 below shows the trajectory of emissions within this Draft 2015 CAP that achieves an AB 32 compliant reduction target of 5.96 million metric tons (MMT) CO_2e and the conceptual 2035 and 2050 reductions in a post 2020 CAP needed to reduce emissions down to 80% below 1990 levels by 2050 outlined in Executive Order S-3-05. Riverside County will develop the post-2020 CAP so that it can be ready for full implementation, including potential new policies, revisions to the General Plan (as necessary), programs, ordinances, and financing by 2020. The Post 2020 CAP will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The County of Riverside will adopt the new Post 2020 CAP by January 1, 2020.

Figure 4.7-4 Riverside County GHG Emissions with Reductions in Draft CAP and Post 2020 CAP



Source: Atkins, Greenhouse Gas Study for General Plan Update, 2011. (See Appendix EIR-6).

4.7.6 Greenhouse Gases - Impacts and Mitigation

A. Would the project generate greenhouse gas emissions, either directly or indirectly, that in conjunction with other global greenhouse gas emissions may have a substantial adverse physical effect on the environment?

Impact 4.7.A – Generation of Greenhouse Gas Emissions: Implementation of the Riverside County General Plan, as updated pursuant to the proposed project, (GPA 960), and associated Climate Action Plan (CAP) would result in future construction and operational activities that generate GHGs. Either individually or collectively, these activities have the potential to result in substantial emissions of GHGs; for example, exceeding the 3,000-10,000 MTY thresholds proposed by the SCAQMD in Tier 3 of its 2008 Interim CEQA Greenhouse Gas Significance Thresholds. However, implementation of the proposed General Plan policies and particularly, the Implementation Measures of the CAP, as well as existing EIR No. 441 and proposed mitigation measures would ensure that GHG emissions within Riverside County would be less than significant.

1. Analysis of Impact 4.7.A

GHGs are generally tracked in two ways, as arising from either construction or operational activities. Because of their differences each of these areas of impact are analyzed separately, as follows.

a. Construction Emissions

Construction activities occurring as individual public and private projects are implemented would emit GHGs over the course of the planning horizon of the updated General Plan. The exact amount of emissions would be dependent on the particular construction equipment used, the length of the construction period for each individual project undertaken and the number of projects occurring at any given time. Because this information is unknowable at the General Plan level, it is impossible to calculate the exact emissions of GHGs from future construction activities in Riverside County. Table 4.7-D in Section 4.7.5 provides estimates of annual construction emissions for three project examples. Following SCAQMD methodology, the construction emissions are amortized over a 30-year lifetime of the project. The combined annual emissions from the three project examples described in Section 4.7.5 totals 55 MT CO_2e/per year or the combined average of residential and commercial projects construction of 1.38 MT CO_2e per acre of construction per year. This represents a fraction of one percent of Riverside County's total annual GHG emissions for 2020 and, thus, would not represent a substantial source of GHG emissions within Riverside County as a whole.

Climate change is cumulative in nature and is analyzed as tons of GHGs emitted per year in conjunction with operational emissions. Because construction activities result in limited, temporary emissions over a relatively short period of time, in respect to the average lifetime of the development impacts from construction activities are minor when compared to operational emissions. With current policies regarding construction waste diversion, ~~anticipated continued advancement in equipment technology~~, the implementation of the CAP and the mitigation measures included for Impact 4.6.2 in Air Quality, construction emissions would be less than significant with respect to GHG emissions. *Additionally, as advancements in equipment technology continue, GHG emissions from construction activities are anticipated to be further reduced.*

b. Operational Emissions

Riverside County's operational emissions are presented previously in Section 4.7.5 for three different horizon years: 2020, 2035 and 2060. The County of Riverside uses the GHG emissions reduction target of AB 32 in determining whether or not the proposed General Plan Update would "generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment." To that end, generated GHG emissions need to be at or below the 1990 emission levels for Riverside County, which is 6,036,971 metric tons of CO_2e, by the year 2020 in order to meet the AB 32 GHG reduction target. This quantitative threshold is Riverside County specific using the existing GHG inventory to estimate 1990 levels of emissions for Riverside County.

As shown in Section 4.7.5, Riverside County's annual GHG emissions with the proposed project would be 10,268,937 metric tons of CO_2e. This total exceeds the target for GHG reductions following AB 32 and would be potentially significant if not appropriately mitigated with General Plan policies, mitigation measures and the Riverside County CAP to reduce GHG emissions. The following discussion details the GHG reductions from various regulatory programs, General Plan Policies, mitigation measures and the CAP.

2. Regulatory Compliance for Impact 4.7.A

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan policies and CAP would lessen significant impacts on GHG emissions within Riverside County.

a. Compliance with Federal, State, Regional and County Regulations

The following federal, state, regional and Riverside County regulations contribute to ensuring development impacts on greenhouse gas emissions are less than significant. See Section 4.7.3 for full text of each of these regulations.

Federal Regulations: The Climate Change Technology Program works to advance the development of renewable energy, energy efficiency and other technologies related to reducing GHG emissions. U.S. EPA regulations work to reduce GHG emissions from the largest emitters nationwide.

State Regulations: The California Ambient Air Quality Standards are intended to reduce emissions of criteria pollutants, however, sources of criteria pollutants often overlap with sources of GHGs. Therefore, by controlling criteria pollutants, the State of California is also indirectly reducing GHG emissions. Executive Order S-3-05 and Assembly Bill 32 set targets for California to reduce its emissions statewide. These targets motivate state policy action to reduce emissions particularly through vehicle fuel efficiency standards and energy efficiency requirements for buildings, such as CCR Title 24, Part 6. Senate Bill 97 updates the CEQA guidelines to require projects to address GHGs in their environmental analyses. Senate Bill 375 supports AB 32 and sets regional targets for the reduction of GHGs from passenger vehicles through coordinated land use and transportation planning. Executive Order S-13-08 led to the development of the Climate Adaption Strategy for the State of California to help the state prepare for impacts such as sea level rise and heat waves.

Regional Regulations: SCAQMD climate change policy works to establish project thresholds and guide the region in addressing climate change.

Riverside County Regulations: County Ordinance Nos. 706, 726, 748, 782 and 824 all work to relieve traffic and congestion on Riverside County roadways thereby reducing GHG emissions associated with transportation. Ordinance Nos. 659, 810 and 875 help to preserve open space and reduce urban sprawl. Ordinance No. 655 helps to conserve electricity from public lighting and indirectly reduces GHGs. The water-efficient landscaping

standards established by Ordinance No. 859 and Board of Supervisors Policy H-25 help to reduce GHGs associated with the electricity used to pump and treat water. Ordinance No. 559 preserves trees thereby preserving the natural carbon storage as trees grow. Ordinance No. 695 helps to reduce GHG emissions associated with wildfires. Board of Supervisors Policies A-64, H-4 and H-29 help reduce GHG emissions through environmental purchasing, energy conservation and sustainable building practices.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would contribute to ensuring development impacts to greenhouse gas emissions are less than significant. See Section 4.7.3.E for full text of each policy.

Land Use Policies: Policies LU 2.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4 all work to help guide development in addressing regional transportation, concentrating growth near existing urban and suburban areas, designing energy- and water-efficient projects, providing opportunities for residents to live and work in the same area, preserving open space and increasing use of alternative transportation modes. Each of these works to directly and indirectly reduce GHG emissions in Riverside County.

Circulation Policies: Policies C 1.2, 1.7, 4.1, 4.8, 5.2, 11.2, 11.4, 11.5, 11.6, 12.1, 13.1-13.3, 17.3, 17.4, and 21.7 per CAP Table 4-1 work to reduce GHG emissions from transportation sources by supporting development of alternative transportation modes, providing for pedestrian facilities, developing transit centers, improving rail service, encouraging bicycle commuting and reducing congestion through the use of HOV and bus-only lanes.

Multipurpose Open Space Policies: Policies OS 2.2 and 2.5 help reduce GHG emissions associated with water use. Policies OS 10.1, 11.1-11.3 and 12.1 encourage the development of renewable energy. Policies OS 16.3-16.8 help reduce GHG emissions by conserving energy in buildings, utilizing alternative fuel vehicles and promoting the use of alternative transportation.

Air Quality Policies: Policies AQ 1.1-1.4 and 1.7 help to reduce GHG emissions by encouraging regional co-ordination on air quality management. Policies AQ 3.2, 3.4 and 10.1-10.4 promote the use of employer-based policies for encouraging carpooling and transit use. Policies AQ 5.2 and 5.4 encourage increased building efficiency in buildings. Policies AQ 5.1 and 8.4-8.9 encourage land use patterns that reduce single-occupancy vehicle trips. Policy AQ 13.1 encourages the expansion of Riverside County's alternative fuel fleet.

c. Compliance with Proposed New or Revised General Plan Policies

The following new or revised policies of the Riverside County General Plan, proposed as part of GPA No. 960, would contribute to ensuring development impacts to greenhouse gas emissions are less than significant. See Section 4.7.3.E for full text of each of these policies.

Policies LU 1.5 and 4.1: These policies help to guide development to address regional transportation issues, concentrate growth near existing urban and suburban areas, include energy and water-efficient design standards, provide opportunities for residents to live and work in the same area, preserve open space and increase the use of alternative modes of transportation. Each of these works to directly and indirectly reduce GHG emissions in Riverside County.

Circulation Policies: Policies C 9.2, 12.2, 17.3, 17.4, and 21.1 work to reduce GHG emissions from transportation sources by supporting development of alternative transportation modes, providing for pedestrian

facilities, developing transit centers, improving rail service, encouraging bicycle commuting and reducing congestion through the use of HOV and bus-only lanes.

Policies AQ 4.1, 4.2, 4.4, 5.2 and 5.4: These policies encourage increased energy efficiency for buildings.

Other AQ Policies: A number of policies were introduced as part of GPA No. 960 specifically to address greenhouse gas emissions, these include: AQ 21.1-21.4, 22.1, 23.1, 23.2, 24.1, 24.2, 25.1-25.3, 26.1, 26.2, 27.1, 27.2, 28.1, 28.2 and 29.1-29.4. These policies help reduce vehicle miles traveled, improve energy efficiency, reduce energy consumption and increase renewable energy generation.

d. Compliance with Existing Mitigation from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measure 4.5.1C was imposed to reduce construction vehicle and exhaust emissions. Although potential impacts would be reduced to less than significant through regulatory compliance, as per above, EIR No. 441 was programmatic and thus this measure remains applicable to future development accommodated by this project as well.

Existing Mitigation Measure 4.5.1C: Mitigation measures for construction equipment and vehicles exhaust emissions:

a. The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency.

b. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.

c. The construction contractor shall utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.

d. The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.

e. The construction contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.

f. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.

g. *[Item g, dust control measures omitted, since not applicable to GHGs].*

e. Additional Project-Specific Mitigation for Impact 4.7.A

Despite all of the above measures that lessen impacts on climate change and reduce GHG emissions, as indicated, additional project-specific mitigation measures are necessary to further avoid, reduce or minimize impacts. Mitigation Measure 4.7.A-N1 would lessen the impact by requiring new development projects to reduce their

individual project emissions. Mitigation Measure 4.7.A-N2 would lessen the impact by allowing projects to demonstrate compliance with the Implementation Measures of the CAP by utilizing the Screening Tables. *Mitigation Measure 4.7-N3 requires the County of Riverside to adopt an updated CAP on or before January 1, 2020 that will include 2035 and 2050 Reduction Targets and updated reduction measures designed to achieve the 2035 and 2050 Reduction Targets.* Implementation of these mitigation measures would ensure that project impacts on GHG emissions are mitigated to less than significant.

NEW Mitigation Measure 4.7.A-N1: To ensure GHG emissions resulting from new development are reduced to levels necessary to meet state targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measures backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 adjusted BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011).

NEW Mitigation Measure 4.7.A-N2: In lieu of a project-specific analysis per Mitigation Measure 4.7.A-N1, a future discretionary project proposed pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions.

NEW Mitigation Measure 4.7.A-N3: *The County of Riverside will monitor implementation of the reduction measures and revise or amend the Climate Action Plan as needed based upon the results of monitoring to ensure achievement of the 2020 Reduction Target. In addition, the County of Riverside will start update process of the Climate Action Plan in 2017 to provide a post-2020 plan. The post-2020 Climate Action Plan update will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The post-2020 Climate Action Plan update will include a set of updated reduction measures to achieve the 2035 and 2050 Reduction Targets and updated monitoring system to ensure that the updated targets are achieved. The County of Riverside will adopt the new post-2020 Climate Action Plan update by January 1, 2020.*

3. Finding on Significance for Impact 4.7.A

Before mitigation, Riverside County's GHG emissions for 2020 would be an estimated 10.27 MMT CO_2e; with implementation of the mitigation measures described above, Riverside County's emissions would be reduced to 6.03 MMT CO_2e. The AB 32 target for GHG emissions reductions is a return to 1990 levels by the year 2020. As calculated herein, that target "1990" level would be 6.03 MMT CO_2e per year, a reduction of 15% from the 2008 baseline, as per CARB's AB 32 Scoping Plan. As demonstrated by the results presented in Section 4.7.5, implementation of and compliance with the above listed existing regulatory programs, as well as the new project-specific mitigation measures described above, would ensure that development authorized pursuant to the proposed updated General Plan would be 6.03 MMT CO_2e; a 25% reduction from 2020 BAU. ~~As such, Riverside County GHG emissions as mitigated herein would be a less than significant impact on global climate change~~.

In addition, to ensure that GHG emissions continue on a downward trajectory, *The County of Riverside will commence planning for the post-2020 period starting at the approximate midway point between plan implementation and the reduction target and after development of key ordinances and implementation of cost-effective measures. The new plan will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets and with the scientific understanding of the needed reductions by 2050. The County of Riverside will adopt the new plan by January 1, 2020.*

In Section 4.7C2 above, Figure 4.7-4 shows the trajectory of emissions within this Draft 2015 CAP that achieves an AB 32 compliant reduction target of 5.96 million metric tons (MMT) CO_2e and the conceptual 2035 and 2050 reductions in a post 2020 CAP needed to reduce emissions down to 80% below 1990 levels by 2050 outlined in Executive Order S-3-05. Riverside County will develop the post-2020 CAP so that it can be ready for full implementation, including potential new policies, revisions to the General Plan (as necessary), programs, ordinances, and financing by 2020. The Post 2020 CAP will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The County of Riverside will adopt the new Post 2020 CAP by January 1, 2020.

Achievement of the 2050 reduction target (80% below 1990 levels of emissions by 2050) in Executive Order S-3-05 will require the State and the County to reduce emission by approximately 95 % below the 2008 baseline levels of GHG emissions by 2050 while also accommodating considerable population and economic growth within the unincorporated areas. Providing the post 2020 path forward for the County as shown in Table 7-2 of the Draft CAP and in Figure 4.7-3 above will require near carbon neutral energy and transportation by 2050. Carbon neutral (no emissions) of energy will require significant changes to the electric generating system in the United States where renewable energy and energy storage supply nearly all the electricity in the system and transportation eliminates fossil fueled trucks and passenger vehicles (electric vehicles or hydrogen fuel cell technology). This future system of carbon neutral energy and transportation sectors is technologically infeasible at this time. For this reason Executive Order S-3-05 provided a "stair-step" tiered approach (2010, 2020, and 2050 targets) to reducing GHG emissions. The "stair-step" approach allows the time needed to develop the technologies required to meet the 2050 goal in Executive Order S-3-05.

The State is currently working on post 2020 reductions to update the AB32 Scoping Plan and should have the proposed rules and regulations needed to achieve the post 2020 reductions within approximately two years. Because it is technologically infeasible to achieve the 2050 target at this time, the County provides Mitigation Measure 4.7.A-N3 that allows the County to work in sync with the State in providing post 2020 reductions and reduction targets. Measure 4.7.A-N3 requires the County to update the CAP by January 1, 2020 and including in that updated CAP reduction targets for 2035 and 2050, and post 2020 reduction measures designed to achieve the reduction targets and keep the County on the emissions reduction path shown in Figure 4.7-3.

Because achievement of the 2050 reduction target in Executive Order S-3-05 is technologically infeasible to achieve at this time, impacts on GHG emissions are considered significant and unavoidable.

B. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Impact 4.7.B – Conflict with GHG Reduction Plans, Policies or Regulations: Implementation of the Riverside County General Plan, as updated pursuant to the proposed project (GPA No. 960), would result in future construction and operational activities that generate GHGs. This generation of GHGs would potentially conflict with the implementation of AB 32 and SB 375, California policies for reducing GHG emissions. However, implementation of the proposed General Plan policies and particularly the Implementation Measures of the Riverside County CAP, plus proposed new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, would ensure that build out of the General Plan, as amended by GPA No. 960, would be consistent with both AB 32 and SB 375 and have a less than significant impact on their implementation.

1. Analysis of Impact 4.7.B

Consistency With AB 32: Data presented in Section 4.7.5 (Table 4.7-E) indicates that without the GHG reduction policies proposed for the updated General Plan, Riverside County levels of GHG emissions in 2020 would be 10.27 MMT CO_2e. This is the 2020 BAU scenario level. With the mitigation proposed in this project, in

particular implementation of CAP IMs (as discussed under Impact 4.7.1), analysis indicates that Riverside County's 2020 GHG emissions would be at 6.03 MMT CO_2e. This value represents a reduction of 41.2% over the BAU scenario. Further, it represents a reduction of 15% compared to the baseline 2008 levels presented in Section 4.7.2. AB 32 sets forth the target of reducing statewide emissions to 80% below 1990 levels by 2050. Further, the State of California's AB 32 Scoping Plan established that to achieve such a goal, 2020 levels must generally be reduced to levels that are 15% below present values and at least 28% below 2020 BAU values. Thus, the data presented herein demonstrate that the CAP's proposed IMs and Screening Tables and other revisions to the General Plan included as part of the project would be sufficient to ensure that new development is consistent with AB 32. For these reasons, the project's consistency with AB 32 would be rendered less than significant with mitigation as outlined below.

Consistency With SB 375: Data presented in Section 4.7.5 (Table 4.7-I) indicates that without the GHG reduction policies proposed for the updated General Plan, per-capita GHG emissions from passenger vehicles would be 5.60 MT CO_2e in 2020 and 9.39 MT CO_2e in 2035. These emissions follow the 2020 and 2035 BAU scenarios. With the mitigation proposed in this project, in particular implementation of the CAP IMs and Screening Tables, analysis indicates that Riverside County's per-capita GHG emissions from passenger vehicles would be 3.06 MT CO_2e in 2020 and 2.89 MT CO_2e in 2035. Following SB 375, CARB set targets for the SCAG region to reduce emissions from passenger vehicles by 8% per capita by the year 2020 and 13% per capita by the year 2035. These percentages were calculated to be equivalent to 3.07 MT CO_2e per capita in 2020 and 2.90 MT CO_2e per capita in 2035. Thus, the data presented herein demonstrate that the proposed CAP Implementation Measures and other revisions to the General Plan included as part of the project would be sufficient to ensure that new development is consistent with SB 375. For these reasons, the project's consistency with SB 375 would be rendered less than significant with the mitigation outlined below.

Consistency With Executive Order S-3-05: *Executive Order S-3-05 provides state level reduction targets of achieving 1990 levels of emissions by 2020 and eighty percent below 1990 levels of emissions by 2050. Emission levels presented in Section 4.7.5 (Table 4.7-G) indicates that the Draft CAP will achieve the 2020 reduction target shown in Executive Order S-3-05. However, Table 4.7-H also indicates that without a post 2020 CAP to continue reducing emission after year 2020, emission levels associated with continued growth in the unincorporated areas of the County will begin rising after 2020 and not meet the 2050 reduction target within Executive Order S-3-05. Mitigation Measure 4.7.A-N3, requires the County to develop and adopt a post 2020 CAP by January 1, 2020, to continue reducing emissions post 2020. The Draft CAP (Table 7-2) shows the estimated reduction strategies needed to continue reducing after year 2020 and Figure 4.7-3 above provides the trend needed to achieve and maintain the ultimate 2050 reduction target in Executive Order S-3-05.*

Achievement of the 2050 reduction target (80% below 1990 levels of emissions by 2050) in Executive Order S-3-05 will require the State and the County to reduce emission by approximately 95 % below the 2008 baseline levels of GHG emissions by 2050 while also accommodating considerable population and economic growth within the unincorporated areas. Providing the post 2020 path forward for the County as shown in Table 7-2 of the Draft CAP and in Figure 4.7-3 above will require near carbon neutral energy and transportation by 2050. Carbon neutral (no emissions) of energy will require significant changes to the electric generating system in the United States where renewable energy and energy storage supply nearly all the electricity in the system and transportation eliminates fossil fueled trucks and passenger vehicles (electric vehicles or hydrogen fuel cell technology). This future system of carbon neutral energy and transportation sectors is technologically infeasible at this time. For this reason Executive Order S-3-05 provided a "stair-step" tiered approach (2010, 2020, and 2050 targets) to reducing GHG emissions. The "stair-step" approach allows the time needed to develop the technologies required to meet the 2050 goal in Executive Order S-3-05.

The State is currently working on post 2020 reductions to update the AB32 Scoping Plan and should have the proposed rules and regulations needed to achieve the post 2020 reductions within approximately two years. Because it is technologically infeasible to achieve the 2050 target at this time, the County provides Mitigation Measure 4.7.A-N3 that allows the County to work in sync with the State in providing post 2020 reductions and reduction targets. Measure 4.7.A-N3 requires the County to update the CAP by

January 1, 2020, and including in that updated CAP reduction targets for 2035 and 2050, and post 2020 reduction measures designed to achieve the reduction targets and keep the County on the emissions reduction path shown in Figure 4.7-3.

2. Regulatory Compliance for Impact 4.7.B

a. Compliance with Federal, State and Riverside County Regulations

The same federal, state, regional and Riverside County regulations described above for Impact 4.7.A also contribute to ensuring development impacts to greenhouse gas emissions are less than significant with respect to consistency with AB 32 and SB 375. See Section 4.7.2 for discussion of these regulations; their contribution to GHG emission reduction in Riverside County is discussed under Impact 4.7.A, above.

b. Compliance with Existing General Plan Policies

The same existing General Plan policies described above for Impact 4.7.A also contribute to ensuring development impacts to greenhouse gas emissions are less than significant with respect to consistency with AB 32 and SB 375. See the prior impact for a discussion of these policies and how they contribute to reducing GHG emissions in Riverside County.

c. Compliance with Proposed New or Revised General Plan Policies

The same proposed or revised General Plan policies described above for Impact 4.7.A also contribute to ensuring development impacts to greenhouse gas emissions are less than significant with respect to consistency with AB 32 and SB 375. See the prior impact for a discussion of these policies and how they contribute to reducing GHG emissions in Riverside County.

d. Additional Project-Specific Mitigation for Impact 4.7.B

Despite all of the above measures that lessen impacts on climate change and reduce GHG emissions, as indicated, additional project-specific mitigation measures are necessary to further avoid, reduce or minimize impacts. New Mitigation Measure 4.7.A-N1 would lessen the impact by requiring new development projects to reduce the individual project emissions. Mitigation Measure 4.7.A-N2 would lessen the impact by allowing projects to demonstrate compliance with the Implementation Measures of the CAP by utilizing the Screening Table. See Impact 4.7.A for the text of these measures. In total, implementation of these mitigation measures would ensure that project impacts on GHG emissions are mitigated to less than significant.

3. Finding on Significance for Impact 4.7.B

Implementation of, and compliance with, the existing regulatory programs, General Plan policies and Riverside County CAP, as well as new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, as described above, would ensure that development authorized pursuant to the General Plan, as amended by the proposed project, GPA No. 960, would ~~have less than significant impacts on~~ *reduce* GHG emissions *achieving the AB32 and SB 375 reduction targets. However, implementation of, and compliance with, the existing regulatory programs General Plan policies and Riverside County CAP, as well as new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, will not achieve the 2050 goal in Executive Order S-3-05 and achievement of that goal is technologically infeasible at this time. Mitigation Measure 4.7.A-N3 commits the County to develop a post 2020 CAP that demonstrates achievement of 2035 and 2050 reduction targets and that the post 2020 CAP is adopted by January 1,*

2020. This allows time for the development of new technology needed to achieve the 2050 goal and the County time to provide a post 2020 CAP in sync with the State goals and reductions.

Because achievement of the 2050 reduction target in Executive Order S-3-05 is technologically infeasible to achieve at this time, impacts on GHG emissions are considered significant and unavoidable.

4.7.7 Significance After Mitigation for Greenhouse Gases

Implementation of, and compliance with, the above regulations, policies and mitigation measures would ensure that impacts due to greenhouse gas emissions from future development within Riverside County are minimized to *the greatest extent feasible at this time.* ~~a level that is less than significant.~~ GHG emissions from construction and operational activities were determined to be reduced to a level consistent with the AB 32 target with the incorporation of mitigation. Following the 2020 emissions analysis, it was determined that future development authorized pursuant to the General Plan, as amended by the proposed project, would not conflict with the implementation of AB 32. Through an analysis of passenger vehicle emissions for 2020 and 2035, the amended General Plan was also determined to be consistent with the targets for the SCAG region under SB 375 with mitigation.

However, compliance with existing and proposed General Plan policies and, in particular, the Riverside County Climate Action Plan's Implementing Measures and Screening Tables, plus the mitigation measures herein, ~~would~~ *does not* ensure that any future development activities approved within Riverside County *will* reduce greenhouse gas emissions, fully mitigate or avoid any GHG impacts *consistent with the 2050 GHG emissions reduction target in Executive Order S-3-05. Achievement of the 2050 reduction target in Executive Order S-3-05 will require nearly carbon neutral (zero emissions) energy and transportation sectors making the 2050 reduction target technologically infeasible at this time. Mitigation Measure 4.7.A-N3 commits the County to develop a post 2020 CAP that demonstrates achievement of 2035 and 2050 reduction targets and that the post 2020 CAP is adopted by January 1, 2020. This allows the time needed to develop the technology required to achieve the 2050 reduction target.*

Because of this, implementation of the Riverside County General Plan, as updated pursuant to the proposed project (GPA No. 960), does not achieve all of the reduction targets within Executive Order S-3-05. This is considered a significant and unavoidable impact.

The County is committed toward the reduction of GHG emission. However, achievement of the 2050 reduction target in Executive Order S-3-05 is technologically infeasible to achieve at this time. Mitigation Measure 4.7.A-.N3 requires the County to provide by January 1, 2020, a post 2020 CAP that includes 2035 and 2050 reduction targets and reduction measures needed to achieve those targets. This allows technology, the State and the County the time needed to develop reduction measures able to achieve the 2050 reduction target. For these reasons the County is providing Overriding Consideration of this currently significant and unavoidable impact. ~~and are consistent with the State of California and Riverside County's greenhouse gas reduction polices and the Climate Action Plan~~.

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Section 4.8

Biological Resources

Section 4.8 Biological Resources

4.8.1 Introduction

In Riverside County, variation in topography, elevation, soil and climate create conditions for a wide variety of natural communities, each with its own assemblage of native plant and animal species. This section focuses on the natural communities and species of greatest concern to regional, state and federal agencies, and on the impacts that could arise from implementation of GPA No. 960.

In EIR No. 441, certified for the original RCIP General Plan in December 2003, the biological resources chapter analyzed the "potential biological impacts that would occur in the absence of the western Riverside County and Coachella Valley MSHCPs." Since then, both Multi-Species Habitat Conservation Plans (MSHCPs) have been approved and are in full implementation. The impacts of GPA No. 960 within the respective coverage areas for the two MSHCPs are discussed below. Analysis is also provided for biological impacts and species that are not covered by the MSHCPs.

In 2000, a description of the existing biological setting of Riverside County was prepared as part of the RCIP process. The resultant portion of the 2000 Existing Setting Report, Chapter 4.2, is used as the baseline for descriptions of the biological resources within Riverside County, with the acres of natural community types updated per new data sources as cited. Information from the RCIP effort (which led to the adoption of the 2003 RCIP General Plan) and new vegetation coverage data derived from the Western Riverside County MSHCP (WRC-MSHCP), Coachella Valley Multiple Species Habitat Conservation Plan (CV-MSHCP), are used in the assessment of impacts. Although no new field studies were conducted for this biological resources analysis, species tables were updated using information from the WRC-MSHCP, CV-MSHCP, California Natural Diversity Data Base (NDDB), California Native Plant Society (CNPS) data base and the U.S. Fish and Wildlife Service's Critical Habitat Portal. The following is a summary of the existing biological resources within Riverside County. Additional details are available in Chapter 4.2 of the 2000 Existing Setting Report.

4.8.2 Existing Environmental Setting – Biological Resources

Biological impacts for western Riverside County, roughly defined by the area west of the San Jacinto Mountains ridgeline, are addressed by the WRC-MSHCP. For the purposes of this section, western Riverside County is defined as synonymous with the WRC-MSHCP coverage area, as shown in Figure 4.8.1 (MSHCP Coverage Areas & Non-MSHCP Areas within Riverside County). Biological issues for the Coachella Valley, roughly defined as the central portion of Riverside County east of the San Jacinto Mountains ridgeline and west of Joshua Tree National Monument and the Little San Bernardino Mountains, are addressed by the CV-MSHCP. Similarly, the Coachella Valley is defined as synonymous with the CV-MSHCP coverage area, also as shown in Figure 4.8.1, for the

purposes of this section. The portions of Riverside County not covered by the WRC-MSHCP or CV-MSHCP are also shown in Figure 4.8.1. Collectively, these three types of areas are defined as the biological study area for the purposes of this EIR. In the following environmental setting discussion, the natural communities, species and existing conservation areas are addressed separately by region. More specifically, the regions are referred to as western Riverside County, Coachella Valley and the non-MSHCP areas.

A. Natural Communities

Riverside County is made up of a mosaic of diverse natural communities. The natural communities contained within each biological study area are more fully described below. Sensitive habitats that are subsets of these communities are described in greater detail separately in Section 4.8.2.B.

1. Western Riverside County

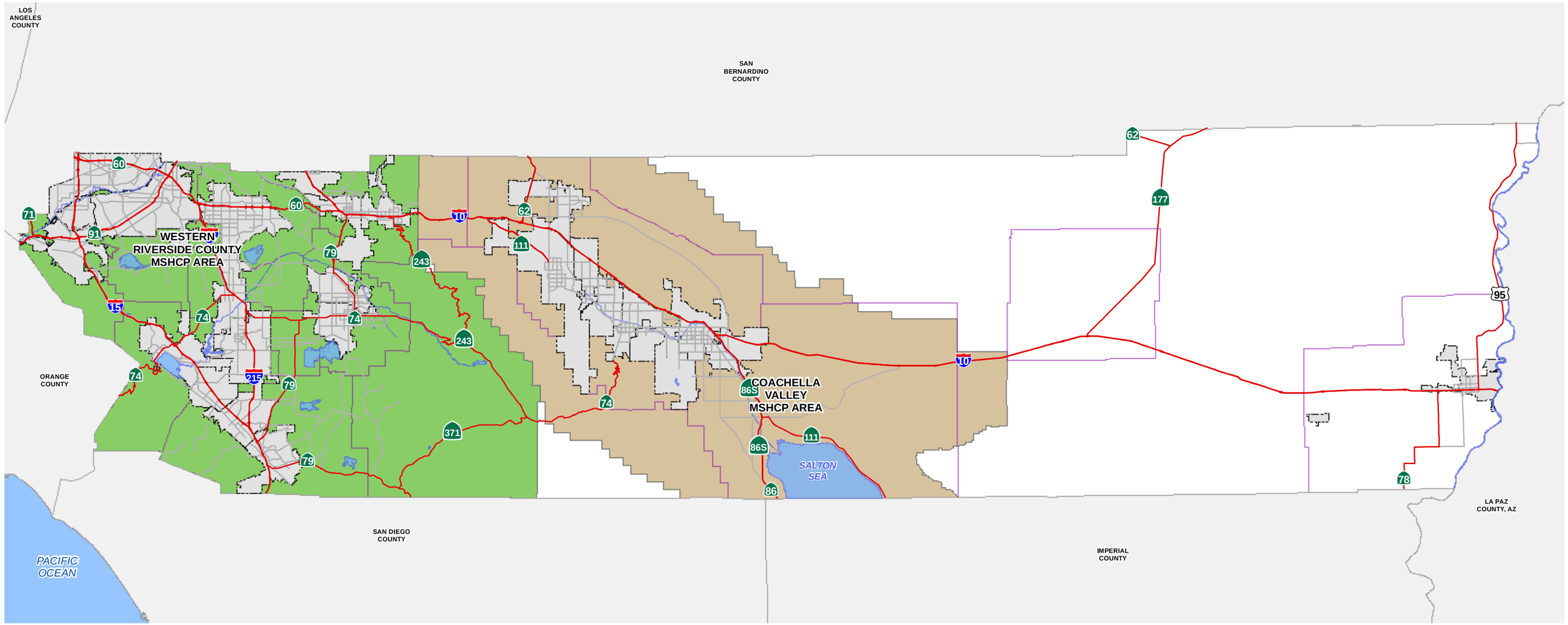
As discussed previously and for the purposes of this section, western Riverside County is defined as the region covered by the WRC-MSHCP. This portion of Riverside County encompasses approximately 1.26 million acres and contains most of Riverside County's non-desert areas and most of its urbanized areas. Although it comprises just under one-third of the county area, it accounts for approximately two-thirds of the developed area and approximately 80% of the countywide population. Approximately 920,730 acres are under Riverside County's jurisdiction. The rest are under the jurisdiction of cities, the state or the federal government (i.e., National Forest, BLM lands), Indian Tribes and other such entities.

Prior to modern urban development, most of western Riverside County was covered by chaparral and coastal sage scrub, with coniferous and oak woodlands at higher elevations. Elevations within western Riverside County range from about 755 feet above mean sea level along the Santa Ana River in the northwestern corner of Riverside County to about 10,800 feet at Mount San Jacinto, the highest point in Riverside County. This variation in topography, soil and climate creates habitats for a wide variety of animals and plants, including many that are rare or endemic to Southern California.

Figure 4.8.2 (Western Riverside County Natural Communities) presents the natural communities, also referred to as vegetation communities, found in western Riverside County. The natural communities shown represent the collapsed, or combined, classifications used in the WRC-MSHCP which are based on Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986). The total amount of each community found in western Riverside County is also provided. The collapsed and uncollapsed classifications are listed in Table 4.8-A (Western Riverside County Natural Communities). A brief description of each natural vegetation community (as delineated in the WRC-MSHCP) in western Riverside County is provided below.

Agriculture: Agricultural lands include areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves/orchards. The largest areas of dairy and livestock feed yards are located north of San Jacinto and north of Juniper Flats.

Chaparral Communities: Chaparral communities are the most abundant and widespread vegetation type in the western Riverside County unincorporated area. Large contiguous stands of chaparral occur along the Santa Ana Mountains in the western portion of western Riverside County and along the San Bernardino, San Jacinto and Agua Tibia Mountains in the eastern and southern portions of western Riverside County. Although chaparral is less common than other vegetation types in the central lowlands of Riverside County, three large chaparral-dominated areas occur on steeper lands near the Gavilan Hills/Gavilan Plateau/Meadowbrook region, the Lakeview Mountains/Double Butte area and the Sedco Hills/Hogbacks area.



Data Source: Riverside County (2011)

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- Non-MSHCP Areas
- Coachella Valley MSHCP Area
- Western Riverside MSHCP Area
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.8.1

December 16, 2013

0 10 20 Miles

MSHCP COVERAGE AREAS AND NON-MSHCP AREAS WITHIN RIVERSIDE COUNTY

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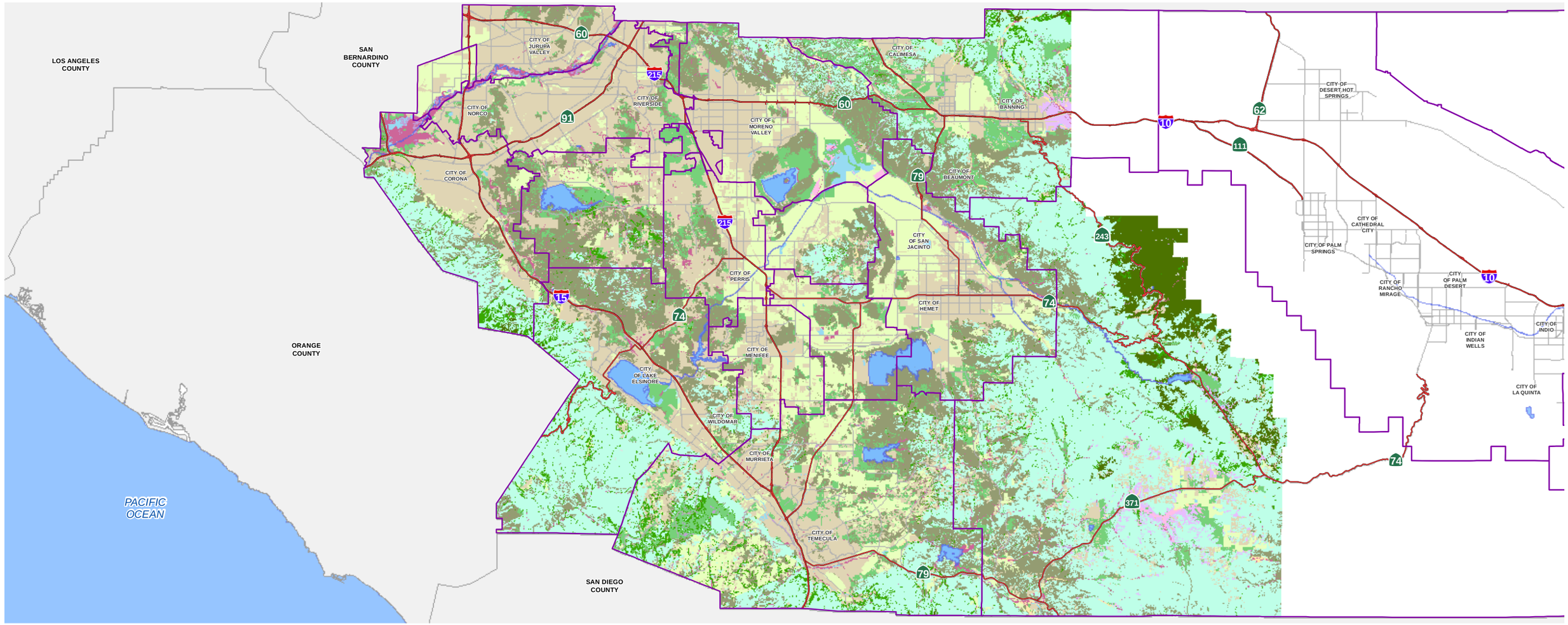

Data Source: California Native Plant Species Survey (2005)

- Agricultural Land
- Barren
- Chaparral
- Cismontane Alkali Marsh
- Coastal Sage Scrub
- Desert Scrub
- Developed/Disturbed Land
- Grassland
- Meadows, Marshes, Playas, and Vernal Pools
- Montane Coniferous Forest
- Riparian Scrub, Woodland, Forest
- Riversidean Alluvial Fan Sage Scrub
- Water
- Woodland and Forests
- Highways
- Area Plan Boundary
- Waterbodies

Figure 4.8.2

December 16, 2013

Miles
0 5 10

RIVERSIDE COUNTY PLANNING DEPARTMENT

WESTERN RIVERSIDE COUNTY NATURAL COMMUNITIES

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Table 4.8-A: Western Riverside County Natural Communities

Collapsed Community Classifications	Total Acreage[1]	% Total Habitat	Uncollapsed Classification[2]	Acreage
Agricultural Land	90,650	10%	Cropland, Orchard-Vineyard	*90,650*
Chaparral	350,100	38%	Chamise-Red Shank Chaparral Mixed Chaparral Montane Chaparral	*101,800* *248,200* *280*
Coastal Sage Scrub	177,280	19%	Coastal Scrub *Mixed Chaparral (Penstemon Alliances)*	*176,480* *800*
Desert Scrub	8,200	1%	Desert Wash Sagebrush	*1,080* *7,120*
Developed/Disturbed Land	126,670	14%	Barren Urban	*630* *126,040*
Grassland	65,460	7%	Annual Grassland *(Natives Dominant)* *(includes Valley and Foothill Grassland[3] and Valley Needlegrass Grassland[3])* *Annual Grassland (Mustards Dominant)* Perennial Grassland ~~Valley and Foothill Grassland[3]~~ ~~Valley Needlegrass Grassland[3]~~	*65,290* *--* *--* *170* *1*
Meadows, Marshes, Playas and Vernal Pools[4]	*3,830* ~~1,910~~	*0.4%* ~~0.2%~~	Alkali Playa[3] *(Alkali Sacaton Alliance)* *Cismontane Alkali Marsh (Alkaline Ephemeral Wetland)* Fresh Emergent Wetland Southern Interior Basalt Vernal Pool[3,4] Vernal Pool[3] Wet Meadow	*4* *1,920* *1,610* *0* *240* *50*
~~Cismontane Alkali Marsh~~	~~1,920~~	~~0.2%~~	~~Wet Meadow (Alkaline Ephemeral Wetland)~~	
Montane Coniferous Forest	31,580	3%	Closed-cone Pine-Cypress Jeffery Pine Lodgepole Pine Montane Hardwood-Conifer Montane Hardwood, Montane Hardwood-Conifer Ponderosa Pine Sierran Mixed Conifer Sierran Mixed Conifer, Montane Hardwood-Conifer Subalpine Conifer White Fir White Fir, Sierran Mixed Conifer	*10* *3,270* *70* *18,030* *740* *160* *4,940* *940* *210* *40* *3,170*
Riparian Scrub, Woodland and Forest	16,540	2%	~~Canyon Live Oak Ravine Forest[3]~~ ~~Desert Fan Palm Oasis Woodland[3]~~ Desert Riparian, Desert Wash[7] *(includes Desert Fan Palm Oasis Woodland[3])* Eucalyptus *Riparian (Mulefat) Scrub[3,7]* Riparian Scrub *(All Others)*[3,7,8] Southern Willow Scrub[3,7,8] ~~Montane Riparian~~ Southern Riparian Forest and Mixed Riparian Forest *(includes Canyon Live Oak Ravine Forest[3] and Southern Coast Live Oak Riparian Forest[3])* ~~Southern Coast Live Oak Riparian Forest[3]~~ ~~Sonoran Cottonwood Willow Riparian Forest[3]~~ Southern Cottonwood Willow Riparian *Forest*[3] Southern Sycamore Alder Riparian Woodland[3,9] Valley Foothill Riparian *(All Others)*[8]	*270* *--* *1,110* *1,240* *1,070* *7,830* *2,650* *--* *--* *1,530* *430* *430*

Collapsed Community Classifications	Total Acreage[1]	% Total Habitat	Uncollapsed Classification[2]	Acreage
Riversidean Alluvial Fan Sage Scrub	3,610	0.4%	Alkali Desert Scrub *(Mixed Saltbush Alliance)* Riversidean Alluvial Fan Sage Scrub[3] *(Scalebroom Associations)*	*170* *3,440*
Water	15,810	2%	Lacustrine *(includes Southern California Arroyo Chub/Santa Ana Sucker Stream[3])* Riverine, Lacustrine ~~So. Cal. Arroyo Chub/Santa Ana Sucker Stream[3]~~	*15,030* *--* *--* *780*
Woodland and Forest	30,990	3%	~~Black Oak~~ ~~Broadleaved Upland Forest~~ Coastal Live Oak Woodland[3] ~~Coastal Oak Woodland, Montane Hardwood~~ Engelmann Oak Woodland[3] Juniper *Mixed Chaparral (Palmer's Oak Associations)* Montane Hardwood *Montane Hardwood-Conifer* Montane Riparian, Valley Foothill Riparian ~~Oak Woodland~~ ~~Peninsular Juniper Woodland and Scrub~~ Pinyon-Juniper Southern Interior Cypress Forest[3,4]	 *17,710* *4,890* *1,740* *114* *3,260* *2,410* *20* *1,030* *0*
Total Acreage	**920,730**			

Footnotes:
1. Total aggregate countywide acreage. All values rounded to nearest 10 acres.
2. Habitat types tracked under WRC-MSHCP.
3. Included on CNPS lists: S or G, 1, 2, or 3 and/or included on CNDB tracking lists.
4. ~~Includes 241 acres of vernal pools.~~ *No habitat of this type recorded in Western Riverside County.*
5. *Included in "Riparian Scrub" sensitive habitat category. (See Table 4.8-I.)*
6. *These habitat categories fall within the greater Valley Foothill Riparian superclass.*
7. *Encompasses White Alder Alliance (Montane Riparian), 380 acres, and White Alder Sycamore Association (Valley Foothill Riparian), 49 acres.*

Source: California Native Plant Species Survey, 2005. CDFG Natural Diversity Data Base, 2011.

Chaparral is a shrub-dominated community composed largely of evergreen species that range from 8 to 15 feet in height. The most common and widespread species within chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), wild-lilac (*Ceanothus* spp.), oak (*Quercus* spp.), redberry (*Rhamnus* spp.), laurel sumac (*Malosma laurina*), mountain-mahogany (*Cercocarpus betuloides*), toyon (*Heteromeles arbutifolia*) and mission manzanita (*Xylococcus bicolor*). Soft-leaved sub-shrubs are less common in chaparral than in coastal sage scrub (see below) but occur within canopy gaps of mature stands. Common species include California buckwheat (*Eriogonum fasciculatum*), sages (*Salvia* spp.), California sagebrush (*Artemisia californica*) and monkeyflower (*Mimulus* spp.). In addition, herbaceous species, including deerweed (*Lotus scoparius*), nightshade (*Solanum* spp.), Spanish bayonet (*Yucca whipplei*), rock-rose (*Helianthemum scoparium*), onion (*Allium* spp.), soap plant (*Chlorogalum* spp.), bunch grasses (*Nassella* and *Melica* spp.), wild cucumber (*Marah* spp.), bedstraw (*Galium* spp.) and lupine (*Lupinus* spp.) are also present.

Coastal Sage Scrub Communities: Coastal sage scrub is distributed throughout western Riverside County. It occurs from the eastern slopes of the Santa Ana Mountains to elevations in the San Jacinto Mountains below 5,000 feet. Sage scrub often is distributed in patches throughout its range; over a scale of several miles, it can be found in diverse community mosaics with other plant communities, particularly grassland and chaparral, as well as oak/riparian woodland in wetter areas. In western Riverside County, coastal sage scrub is found both in large contiguous blocks scattered throughout the region as well as integrated (intermixed) with chaparral and grasslands. Coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs and sub shrub species. Composition varies substantially depending on physical circumstances and the

successional status (age) of the community. However, characteristic species include California sagebrush, California buckwheat, laurel sumac (*Malosma laurina*), California encelia (*Encelia californica*) and several species of sage (e.g., *Salvia mellifera*, *S. apiana*). Other common species include brittlebush (*E. farinosa*), lemonadeberry (*Rhus integrifolia*), sugarbush (*R. ovata*), yellow bush penstemon (*Keckiella antirrhinoides*), Mexican elderberry (*Sambucus mexicana*), sweetbush (*Bebbia juncea*), box-thorn (*Lycium* spp.), shore cactus (*O. littoralis*), coastal cholla (*Opuntia prolifera*), tall prickly-pear (*O. oricola*) and species of *Dudleya.*

Desert Scrub Communities: Desert scrub, including big sagebrush scrub and Sonoran desert scrub, occurs mostly in the southeastern portion of western Riverside County. Large stretches occur north and south of SR-371 within Tule Valley, Culp Valley, Wilson Creek, Cahuilla, the Ramona Indian Reservation, the community of Anza and east of Aguanga and Lake Riverside.

Desert scrub is typically composed of shrubs such as big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), rubber rabbit-bush (*Chrysothamus nauseosus*), yellow rabbitbrush (*C. viscidiflorus*), black bush (*Coleogyne ramosissima*), Mormon-tea (*Ephedra viridis*), horsebrush (*Tetradymia canescens*), plateau gooseberry (*Ribes velutinum*), hopsage (*Grayia spinosa*), burro weed (*Ambrosia dumosa*), brittlebush (*E. farinosa*), crucifixion-thorn (*Canotia holacantha*), ocotillo (*Fouquieria splendens*) and creosote scrub (*Larrea tridentata*). The herbaceous cover generally is dominated by a mixture of perennial bunch grasses, such as ricegrass (*Achnatherum hymenoides*), needle-and-thread (*Stipa comata*), letterman's needlegrass (*S. lettermanii*), needlegrass (*S. occidentalis and S. thurberiana*), desert needlegrass (*S. speciosa*), one-sided bluegrass (*Poa secunda*), bluebunch wheatgrass (*Agropyron spicata*) and Great Basin wild rye (*Leymus cinereus*). Annual grasses and forbs may also occur within big sagebrush scrub. Cheatgrass (*Bromus tectorum*), an introduced annual grass, has become the dominant herbaceous species in many areas.

Developed or Disturbed Land: Developed or disturbed lands consist of areas that have been disked, cleared or otherwise altered. Developed lands may include roadways, existing buildings and structures as well as landscaped or groomed areas, such as parks and detention basins. The largest areas of developed land are in the cities (and surrounding unincorporated communities) of Temecula, Murrieta, Lake Elsinore, (Meadowbrook, Alberhill, El Cariso and Lakeland Village), Hemet (East Hemet and Valle Vista), Moreno Valley and along the SR-91 corridor from Riverside through Corona and Norco. More medium-sized tracts of developed land are located in the communities of Canyon Lake, (Quail Valley, Sun City, Homeland), in Perris along I-215, (Mead Valley, Gavilan Hills, Woodcrest), Beaumont, Banning (Cherry Valley) and Calimesa. Small pockets of scattered development occur in the southeast portion of Riverside County along SR-371 in the unincorporated communities of Terwilliger Valley, Sage, Aguanga and Anza and also within the Sedco Hills. Disturbed lands may include ornamental plantings for landscaping, escaped exotics or ruderal (weedy) vegetation dominated by non-native, weedy species such as mustard (*Brassica* sp.), fennel (*Foeniculum vulgare*), tocalote (*Centaurea melitensis*) and Russian thistle (*Salsola tragus*).

Grassland Communities: Grasslands occur throughout most of western Riverside County. Two general types of grasslands occur in Southern California. The first and most prevalent type by far is non-native dominated, primarily annual grassland ('nonnative grassland'). The second type is native-dominated, perennial grassland ('valley and foothill grassland'). The only valley and foothill grasslands mapped within western Riverside County are found on the Santa Rosa Plateau. Non-native grasslands occur throughout the majority of the region, usually within close proximity to urbanized or agricultural land uses. Large patches of non-native grasslands occur in the Riverside lowlands near March Air Reserve Base, Lake Mathews, Lake Perris, Lake Elsinore, Banning, Cahuilla and in the Terwilliger Valley south of Anza.

Valley and foothill grasslands typically contain the perennial bunch grasses *Nassella pulchra* and *N. lepida.* Lesser amounts of other native grasses, such as *Melica* spp., *Leymus* spp., *Muhlenbergia* spp. and beard grass (*Bothriochloa barbinodis*), may also be present. In addition, non-native grasses or forbs may be present to varying degrees.

Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck (*Amsinckia menziesii*), common calyptridium (*Calyptridium monardum*), suncup (*Camissonia* spp.), Chinese houses (*Collinsia heterophylla*), California poppy (*Eschcholzia californica*), tarweed (*Hemizonia* spp.), coast goldfields (*Lasthenia californica*), common tidy-tips (*Layia platyglossa*), *Lupinus* spp., *Plagiobothrys* spp., blue dicks (*Dichelostemma capitata*), *Muilla* spp., blue-eyed grass (*Sisyrinchium bellum*) and *Dudleya* spp.

Non-native grasslands are typically dominated by several species of grasses that have evolved to persist in concert with human agricultural practices: slender oat (*Avena barbata*), wild oat (*A. fatua*), fox tail chess (*Bromus madritensis*), soft chess (*B. hordeaceus*), ripgut grass (*B. diandrus*), barley (*Hordeum* spp.), rye grass (*Lolium multiflorum*), English ryegrass *(L. perrene*), rat-tail fescue (*Vulpia myuros*) and Mediterranean schismus (*Schismus barbatus*).

Meadow and Marsh Communities: Meadow and marsh communities, including coastal and valley freshwater marsh, undifferentiated marsh and wet montane meadow, occur within the unincorporated area of western Riverside County. Occurrences of freshwater marshes have been mapped in the Prado Basin in the Santa Ana River Valley, on the Santa Ana River near Pedley, north of Lake Elsinore in Walker Canyon, near San Jacinto, along the shores of Lake Skinner and Vail Lake, and adjacent to the cismontane alkali marsh on Cahuilla Creek. Undifferentiated marsh was mapped in three locations, including the shore of Lake Mathews, near Mystic Lake and upstream from Vail Lake along Temecula Creek in the Aguanga Valley. Wet montane meadow was mapped in the San Jacinto Mountains in the San Bernardino National Forest, primarily within the vicinity of Hemet Lake.

Meadow and marsh communities occur in both flowing and still water and are associated with cattails (*Typha* spp.), bulrush (*Scirpus* spp.), sedges (*Carex* spp.), spike rushes (*Eleocharis* spp.), flatsedges (*Cyperus* spp.), smartweed (*Polygonum* spp.), watercress (*Rorippa* spp.), yerba mansa (*Anemopsis californica*), saltgrass (*Distichlis spicata*), alkali-heath (*Frankenia salina*), common pickleweed (*Salicornia virginica*), rushes (*Juncus* spp.) and marsh flea-bane (*Pluchea odorata*), as well as perennial and biennial herbs (e.g., *Oenothera* spp., *Polygonum* spp., *Lupinus* spp., *Potentilla* spp. and *Sidalcea* spp.) and grasses (e.g., *Agrostis* spp., *Deschampsia* spp. and *Muhlenbergia* spp.). Rooted aquatic plant species with floating stems and leaves also may be present, such as pennywort (*Hydrocotyle* spp.), water smartweed (*Polygonum amphibium*), pondweeds (*Potamogeton* spp.) and water-parsley (*Oenanthe sarmentosa*). Wet montane meadows that dry out by mid-summer have a higher percentage of perennial grasses than meadows that remain moist during the entire growing season.

Cismontane Alkali Marsh Community: Cismontane alkali marsh occurs within the unincorporated area of western Riverside County. The community is dominated by perennial, emergent, herbaceous monocots to 6 feet tall; cover is often complete and dense. Dominant species include cattail (*Typha latifolia, T. domingensis*), alkali bulrush (*Scirpus americanus*) and saw-grass (*Cladium californicum*). Iodine bush (*Allenrolfea occidentalis*) is also associated with these marshes. This marsh habitat occurs where standing water or saturated soil is present throughout most or all of the year. High evaporation and low input of freshwater render the marsh alkaline. This natural community occurs primarily within Cahuilla Indian lands east of Anza and within existing conservation lands east of Lake Perris in the Mystic Lake area. It is important habitat for the Yuma clapper rail and California black rail.

Montane Coniferous Forest Communities: These types of forest communities are generally distinguished from other woodlands and other forest types by their higher altitude and drier climate. Montane coniferous (cone-bearing) forest, including Jeffrey pine, lodgepole pine forest, lower montane coniferous forest, mixed evergreen forest, Southern California white fir forest and subalpine coniferous forest, occur within the San Jacinto Mountains, Agua Tibia, Cleveland National Forest and Santa Rosa Mountains. Montane coniferous forest is dominated by Jeffrey pine (*Pinus jeffreyi*), ponderosa pine (*P. ponderosa*), Coulter pine (*P. coulteri*), lodgepole pine (*P. contorta* subspecies [ssp.] *murrayanna*), limber pine (*P. flexilis*), bigcone Douglas-fir (*Pseudotsuga macrocarpa*), Pacific madrone (*Arbutus menziesii*), bigleaf maple (*Acer macrophyllum*), Rocky Mountain white fir (*Abies concolor* variety [var.]

concolor) and sugar pine (*P. lambertiana*). Common understory shrubs include manzanita (*Arctostaphylos* spp.), California lilac (*Ceanothus* spp.), chinquapin (*Chrysolepis* ssp.), currant (*Ribes* ssp.) and dwarf mistletoe (*Arceuthobium campylopodum*). The herbaceous layer is composed of morning-glory (*Calystegia occidentalis* ssp. *fulcrata*), sedge (*Carex multicaulis*), clarkia (*Clarkia rhomboidea*) and mountain-heather (*Phyllodoce breweri*).

Playa and Vernal Pool Communities: Within western Riverside County, playa and vernal pool communities are generally found in the San Jacinto Valley/Perris Basin and on the Santa Rosa Plateau. Vernal pools are ephemeral wetlands that form in shallow depressions underlain by a substrate near the surface that restricts the downward percolation of water. Depressions in the landscape with no outlets fill with rainwater and runoff enters from adjacent areas during the winter. The depressions may remain inundated until spring or early summer, sometimes drying more than once during the wet season. Smaller pools can fill and dry. Larger pools can hold water longer and may, in the deeper portions, support species more representative of freshwater marshes.

The term 'playa' is also loosely associated with vernal pool communities because of a similar morphology. Playas are usually dry and nearly level lake plains that occupy the lowest parts of closed depressions, such as those occurring on montane or intermontane basis floors. In them, temporary ponding occurs due to precipitation runoff events, leading to a succession of plant growth similar to that of vernal pools.

Vernal pools are well-known for their high level of endemism (occurring only in small areas) and abundance of rare, threatened or endangered species. Many vernal pools are characterized by concentric rings of plants that flower sequentially as the pools dry. Vernal pools are dominated by native annual plants with low to moderate levels of perennial herbaceous cover. Common vernal pool plant species in western Riverside County include woolly marbles (*Psilocarphus brevissimus*), toad rush (*Juncus bufonius*) and spike rush (*Eleocharis* spp.). In addition, the following sensitive or listed plant species are found in one or more of these pools: California Orcutt grass (*Orcuttia californica*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), little mousetail (*Myosurus minimus* ssp. *apus*), spreading navarretia (*Navarretia fossalis*), low navarretia (*N. prostrata*), Orcutt's brodiaea (*Brodiaea orcuttii*), thread-leaved brodiaea (*B. filifolia*), Parish brittlescale (*Atriplex parishii*), Parish meadowfoam (*Limnanthes gracilis* ssp. *parishii*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) and smooth tarplant (*Hemizonia pungens* ssp. *laevis*). The Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*) occurs only in western Riverside County. The vernal pools of the Santa Rosa Plateau also feature the southernmost record for the vernal pool fairy shrimp (*Branchinecta lynchi*).

Riparian Forest/Woodland/Scrub Communities: Riparian habitat is, by definition, associated with the presence of water as these communities generally occur near streams, rivers and similar sources of wet soils. Riparian vegetation, including forest, woodland and scrub subtypes, is distributed in waterways and drainages throughout much of western Riverside County. Southern cottonwood/willow forest makes up the largest proportion of the riparian vegetation in western Riverside County, comprising nearly one-half of the acreage. Most of this community occurs along the Santa Ana River drainage from Lake Evans to beyond the Prado Basin, along the San Gorgonio River north of Banning and along Temecula Creek east of Vail Lake. Additional types of riparian vegetation can also be found along these and other area drainages, including the San Gorgonio River north of Banning (montane riparian forest), Temescal Canyon Wash and its tributaries (riparian scrub and mulefat scrub), stream channels within the San Mateo Canyon watershed (riparian forest, southern sycamore/alder riparian woodland and riparian scrub) and Vail Lake (tamarisk scrub).

Riparian communities typically consist of one or more deciduous tree species with an assorted understory of shrubs and herbs. Depending on community type, a riparian community may be dominated by any of several trees or shrubs, including box elder (*Acer negundo*), big-leaf maple (*A. macrophyllum*), coast live oak (*Quercus agrifolia*), white alder (*Alnus rhombifolia*), sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*), California

walnut (*Juglans californica*), Mexican elderberry (*Sambucus mexicana*), wild grape (*Vitis girdiana*), giant reed (*Arundo donax*), mulefat (*Baccharis salicifolia*), tamarisk (*Tamarix* spp.) or any of several species of willow (*Salix* spp.). In addition, various understory herbs may be present, such as salt grass (*Distichlis spicata*), wild cucumber (*Marah macrocarpus*), mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*) and poison oak (*Toxicodendron diversilobum*).

Riversidean Alluvial Fan Sage Scrub Communities: Riversidean alluvial fan sage scrub also occurs in the region. Large areas of it occur on the Santa Ana River near Lake Evans in the City of Riverside; along the San Gorgonio River and its tributaries near Banning; on the San Jacinto River from the San Bernardino National Forest to the Soboba Indian Reservation; near Temecula along Temecula Creek; on drainage and washes throughout the Aguanga area; along Bautista Creek south of Hemet; and along the washes coming out of the mountain canyons in the Temescal Valley.

Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, though it can also include significant cover of larger perennial species typically found in chaparral. Due to its ability to survive the scouring that occurs in alluvial washes, scalebroom (*Lepidospartum squamatum*) generally is regarded a prime indicator of Riversidian alluvial scrub. In addition to scalebroom, alluvial scrub typically features white sage (*Salvia apiana*), redberry (*Rhamnus crocea*), flat-top buckwheat (*Eriogonum fasciculatum*), our lord's candle (*Yucca whipplei*), California croton (*Croton californicus*), cholla (*Opuntia* spp.), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), mulefat (*Baccharis salicifolia*) and mountain-mahogany (*Cercocarpus betuloides*). Annual species composition has not been studied but is probably similar to that found in understories of neighboring shrubland vegetation. Two sensitive annual species are endemic to alluvial scrub vegetation in western Riverside County: slender-horned spineflower (*Dodecahema leptocerus*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Water: A portion of western Riverside County consists of open water. Open water was mapped at Vail Lake, Lake Skinner, Diamond Valley Lake, Lake Perris, Mystic Lake, Canyon Lake, Lake Elsinore, Lee Lake, Lake Mathews, Hemet Lake, portions of the San Jacinto River and portions of the Santa Ana River, as well as various small ponds, private reservoirs and portions of stream channels.

Open water typically is unvegetated due to a lack of light penetration. However, it may contain suspended organisms such as filamentous green algae, phytoplankton (including diatoms) and desmids. Floating plants such as duckweed (*Lemna* spp.), water buttercup (*Ranunculus aquatilis*) and mosquito fern (*Azolla filiculoides*) also may be present. Open water includes inland depressions, ponds, lakes, reservoirs and stream channels with standing water and often occurs in conjunction with riparian and upland communities. Water depth may vary from hundreds of feet to a few inches.

Woodland and Forest Communities: Within the lowlands, hills and lower elevations of mountains, western Riverside County supports woodlands and forests featuring black oak forest, broad-leaved upland forest, oak woodlands and peninsular juniper woodland communities. Woodland and forest communities are dominated by Englemann oak (*Quercus englemannii*), coast live oak (*Q. agrifolia*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizenii*) and black oak (*Q. kelloggii*). The canopy of these communities may be continuous to intermittent or savannah-like. Four-needle pinyon (*Pinus quadrifolia*), single-leaf pinyon pine (*P. monophylla*) and California juniper (*Juniperus californica*) are the canopy species most commonly associated with peninsular juniper woodland; they form a scattered canopy from 10 to 50 feet tall and generally occur on ridges and slopes slightly above the lowlands.

Many understory plants in these woodlands are shade tolerant and include wild blackberry (*Rubus ursinus*), snowberry (*Symphoricarpos mollis),* California walnut (*Juglans californica*), California-lilac (*Ceanothus* spp.), *Rhus* spp.,

currant (*Ribes* spp.), toyon (*Heteromeles arbutifolia*), California bay (*Umbellularia californica*), manzanita (*Arctostaphylos* spp.), laurel sumac (*Malosma laurina*), poison-oak (*Toxicodendron diversilobum*) and herbaceous plants including bracken fern (*Pteridium aquilinum*), polypody fern (*Polypodium californicum*), fiesta flower (*Pholistorma auritum*) and miner's lettuce (*Claytonia perfoliata*). A variety of grasses and soft shrubs also are commonly found in these communities. This natural community can occur in any part of Riverside County with proper conditions, such as stream sides, canyon bottoms and flat to very steep topography.

2. Coachella Valley

As discussed previously, for the purposes of this section, Coachella Valley is defined as the region covered by the CV-MSHCP. This area encompasses approximately 1.2 million acres and includes the Coachella Valley and the surrounding mountains up to the ridgelines. A little more than 1 million acres falls within the jurisdiction of Riverside County in the region. The Coachella Valley is located in the central portion of Riverside County and extends from Cabazon in the northwest to the ridgeline of the Little San Bernardino Mountains and San Bernardino County boundary to the northeast. At the southern end of the valley, the ridgeline of the San Jacinto and Santa Rosa Mountains and the boundary line with San Diego and Imperial Counties define its extent in Riverside County.

Coachella Valley proper is a broad, low elevation, northwest-southeast trending valley located along the westernmost edge of the Sonoran desert. As envisioned by the CV-MSHCP, the region was chosen to maximize the amount of Coachella Valley watershed encompassed. Portions of the watershed outside Riverside County or outside the jurisdictional boundaries of the Coachella Valley Association of Governments (CVAG) were omitted to avoid institutional and administrative complexity. For most of its length, the western boundary of the CV-MSHCP is coterminous with the eastern boundary of the WRC-MSHCP. However, there is a gap of approximately 60,300 acres between the two MSHCPs located near the San Diego border, south of SR-74 and west of the Santa Rosa Mountains. See "Non-MSHCP Areas" for additional information.

The desert floor of the Coachella Valley ranges in elevation from more than 150 feet below sea level at the southeast end to nearly 2,000 feet at the northwest end of the valley on the alluvial fans. The mountains surrounding the Coachella Valley range in elevation up to 10,800 feet at Mount San Jacinto, with elevations on the southern side of the valley substantially higher than those on the north. This range of elevations and accompanying differences in temperature, precipitation and other environmental variables are significant factors contributing to the area's high biological diversity.

Many canyons in the mountains support riparian areas not typical of a desert environment. Streams and seeps also support many desert fan palm oases, especially in the Santa Rosa Mountains. Desert dry wash woodlands occur where the water drains into the sands. The alluvial fans associated with the canyon mouths provide still another major land form and distinctive biological community. Also contributing to the region's biological diversity are the strong winds that funnel through the San Gorgonio Pass from the west that pass through areas of sand deposition from the San Gorgonio and Whitewater Rivers, creating an aeolian dune system. Historically, this dune system occupied much of the center of the valley.

The San Andreas Fault zone has created a unique corridor of desert fan palm oases stretching along the southern side of the Indio Hills where water is forced to or near the surface by the damming action of the fault. Mesquite hummocks and mesquite bosques are also associated with the fault in some areas. The Salton Sea also contributes to biological diversity through the creation of marsh, mudflat and other wetland habitats. The low elevation of the Salton Sea trough creates a hot arid environment which combines with the salinity of the soils to produce an uncommon desert sink scrub community.

Figure 4.8.3 (Coachella Valley Natural Communities) presents the natural communities, also referred to as vegetation communities, found in Coachella Valley. The communities shown represent the collapsed, or combined, classifications used in the CV-MSHCP as based on Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) along with five additional natural community types developed to distinguish better among the blowsand communities in the region. Table 4.8-B (Coachella Valley Natural Communities), below, also lists the uncollapsed classifications that are associated with each collapsed category. A brief description of each collapsed natural vegetation community found in Coachella Valley, as defined in the Recirculated Final CV-MSHCP, is provided below.

Chaparral Communities: Coachella Valley supports chaparral communities, including chamise chaparral, interior live oak chaparral, mixed montane chaparral, northern mixed chaparral, red shank chaparral, scrub oak chaparral, semi-desert chaparral, upper Sonoran manzanita chaparral and upper Sonoran mixed chaparral. These communities occur on the lower slopes of the San Jacinto, Santa Rosa and Little San Bernardino Mountains.

Table 4.8-B: Coachella Valley Natural Communities

Collapsed Community Classifications	Acreage[1]	% of Habitat	Uncollapsed Classification[2]	Acreage
Chaparral	86,330	9%	Chamise Chaparral[3]	*4,440*
			Interior live oak chaparral[3]	*24,650*
			Mixed montane chaparral	*180*
			Northern mixed chaparral	*8,520*
			Red shank chaparral[3]	*16,560*
			Scrub oak chaparral	*2,530*
			Semi-desert chaparral[3]	*23,910*
			Upper Sonoran manzanita chaparral	*3*
			Upper Sonoran mixed chaparral	*2,540*
Desert Alkali Scrub	18,830	2%	Desert saltbush scrub[3]	*7,210*
			Desert sink scrub[3]	*11,630*
Desert Scrub	607,110	60%	Blackbush scrub	*8,490*
			Mojave mixed steppe	*420*
			Mojave mixed woody scrub[3]	*103,510*
			Riversidean desert scrub	*8,110*
			Sonoran creosote bush scrub[3]	*380,250*
			Sonoran mixed woody and succulent scrub[3]	*106,330*
Developed, Urban and Disturbed	147,070	15%	Agriculture	*71,470*
			Lake	*44,140*
			Landfill	*410*
			Quarry	*760*
			Reservoir	*90*
			Rural	*12,290*
			Urban	*14,630*
			Wind Energy	*3,280*
Dry Wash Woodland and Mesquite	38,690	4%	Desert dry wash woodland[3]	*37,430*
			Mesquite bosque[3]	*480*
			Mesquite hummocks[3]	*790*
Marsh	400	0%	Cismontane alkali marsh[3]	*320*
			Coastal and valley freshwater marsh[3]	*80*
Riparian	8,050	1%	Arrowweed scrub[3]	*280*
			Desert fan palm oasis woodland[3]	*1,590*
			Sonoran cottonwood-willow riparian forest	*690*
			Southern arroyo willow riparian forest[3]	*150*
			Southern sycamore-alder riparian woodland	*960*
			Tamarisk scrub	*4,390*

Collapsed Community Classifications	Acreage[1]	% of Habitat	Uncollapsed Classification[2]	Acreage
Sand Dunes and Sand Fields	8,990	1%	Active desert dunes[3]	*440*
			Active sand fields[3]	*4,710*
			Ephemeral sand fields[3]	*730*
			Stabilized desert dunes[3]	*250*
			Stabilized desert sand fields[3]	*840*
			Stabilized shielded sand fields[3]	*2,030*
Woodland and Forest	92,710	9%	Bigcone spruce-canyon oak forest	*2,660*
			Black oak forest	*3,390*
			Canyon live oak forest	*190*
			Coulter pine forest	*4,530*
			Jeffrey pine forest	*4,500*
			Jeffrey pine-fir forest	*3,200*
			Mojavean pinyon and juniper woodland[3]	*30,670*
			Peninsular juniper woodland and scrub[3]	*29,950*
			Sierran mixed coniferous forest	*3,320*
			Southern California subalpine forest	*1,820*
			Westside ponderosa pine forest	*8,490*
Total Acreage	**1,008,180**			

Footnotes:
1. Total aggregate acreage.
2. Habitat types tracked under CV-MSHCP.
3. Included on CNPS lists S or G, 1, 2, or 3 and/or included on CNDB tracking lists.

Source: Riverside County GIS Department, analysis of habitat data from CV-MSHCP, 2012.

These communities may contain chamise (*Adenostoma fasciculatum*), redshank (*Adenostoma sparsifolium*), interior live oak (*Quercus wislizenii*), scrub oak (*Q. berberidifolia*), sclerophylls, chaparral whitethorn (*Ceanothus leucodermis*), birch-leaf mountain mahogany (*Cercocarpus betuloides*), coffeeberry (*Rhamnus californica*), hollyleaf redberry (*R. ilicifolia*), California juniper (*Juniperus californica*), California buckwheat, *Opuntia* cactus species, manzanita (*Arctostaphylos* spp.) and sugar bush (*Rhus ovata*).

Desert and Alkali Scrub Communities: Coachella Valley supports desert and alkali scrub communities composed of desert saltbush scrub and desert sink scrub. These communities occur in the Willow Hole area, the Thousand Palms Preserve and in the higher-salinity soils in the area around the northern end of the Salton Sea and in the Dos Palmas/Salt Creek area east of the Sea.

One or more species of saltbush (*Atriplex* spp.) are found in these communities, including alkali salt-bush (*Atriplex polycarpa*) and four-winged saltbush (*A. canescens* var. *linearis*). Screwbean mesquite (*Prosopis glandulosa* var. *torreyana*) is a common associate. Alkali goldenbush (*Isocoma acradenia*) is common in areas where *P. glandulosa* is dominant. Pickleweed (*Salicornia virginica*), iodine bush, is also common.

Desert Scrub Communities: Coachella Valley supports various Mojavean and Sonoran desert scrub communities. Mojavean desert scrub is composed of blackbrush scrub, Mojave mixed steppe and Mojave mixed woody scrub communities. Sonoran desert scrub encompasses Sonoran creosote bush scrub, Sonoran mixed woody and succulent scrub communities. These communities are found in the alluvial plains that extend out toward the valley floor from the mouth of canyons emerging from the surrounding mountains. These alluvial habitats are formed by a variety of mountain drainages from large and small canyons including: Chino Canyon and Palm Canyon draining the San Jacinto Mountains; Big Morongo Canyon, Thousand Palms Canyon, Long Canyon, East Wide Canyon, West Wide Canyon and East Deception Canyon, which all drain to the Little San Bernardino Mountains; Mission Creek, Whitewater River and the San Gorgonio River draining the San Bernardino Mountains; and Dead Indian Canyon, Deep Canyon, Bear Creek and Martinez Canyon draining the Santa Rosas Mountains.

Desert scrub communities may include plant species such as creosote bush, burrobush (*Ambrosia dumosa*), Joshua tree (*Yucca brevifolia herbertii*), California buckwheat and bladderpod (*Isomeris arborea*), plus a variety of woody and herbaceous plants, including indigo bush, catclaw acacia, desert lavender, rock daisy and palo verde. Several species of cacti are also present, including fishhook cactus, hedgehog cactus, silver cholla (*Opuntia echinocarpa*), buckhorn cholla (*O. acanthocarpa*), pencil cholla (*O. ramosissima*), prickly pear (*O. engelmannii*), beavertail cactus (*O. basilaris*), barrel cactus (*Ferocactus acanthodes*) and ocotillo (*Fouquieria splendens*). Species of note known from this community include California ditaxis and glandular ditaxis.

Dry Wash Woodland and Mesquite Communities: This community includes desert washes which form a distinct habitat connection that links the mountains to the valley floor. Washes emerge from canyon mouths as high-banked watercourses that cut through to the alluvial plain. Vegetation consists of a low-growing, loosely formed woodland with a number of distinctive plants including Little San Bernardino Mountains linanthus (*Linanthus maculates*), Mecca aster (*Xylorhiza cognate*) and Orocopia sage (*Salvia greatae*), as well as common shrubs such as desert lavender (*Hyptis emoryi*), sandpaper plant (*Petalonyx thurberi*) and bladderpod (*Lesquerella* spp.*)*. These drainages can also support vegetation specialized to capitalize on a level of underground water that is closer to the surface.

As these washes descend down onto the plains, they broaden and the watercourses branch out. Farther from the canyons, washes become broader, shallower and less defined so that the physical differences between the washes and the alluvial plain are diminished. These washes are often used by wildlife as corridors through both the wash and the alluvial plain habitats. The washes are favored habitats of the desert tortoise (*Gopherus agassizii*), Peninsular bighorn sheep (*Ovis canadensis nelsoni*), Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*), Le Conte's thrasher (*Toxostoma lecontei*) and a variety of migratory riparian birds. The largest and most notable desert washes in the Coachella Valley include those associated with the San Gorgonio and Whitewater Rivers, Palm Canyon, Mission Creek, Big Morongo Creek, Deep Canyon, Thousand Palms and Bear Creek Wash, among others.

Marsh Communities: Coachella Valley supports a small amount of cismontane alkali marsh and coastal and valley freshwater marshes. These communities occur at the mouth of the Coachella Valley Stormwater Channel along the Salton Sea and at Los Dos Palmas, on the edge of some of the palm oases (e.g., Andreas Oasis) and along the margins of recently restored man-made ponds. Dominant species include cattail (*Typha latifolia* and *T. domingensis*), alkali bulrush (*Scirpus americanus*), tules (*Scirpus* spp.), rushes (*Juncus* spp.) and saw-grass (*Cladium californicum*). Iodine bush (*Allenrolfea occidentalis*) is also associated with these communities.

Sand Dunes and Sand Fields Communities: These communities are characterized by relatively flat and low-lying terrain with regions of shifting and blowing sands generally supporting only sparse vegetation. Within the Coachella Valley, blow sand communities can be divided into three sub-communities: active sand dunes, active sand fields, and stabilized and partially-stabilized desert sand fields. These blowsand habitats are characterized by low perennial plant diversity, very high annual ephemeral plant diversity and a very diverse array of invertebrates.

Active sand dunes are located in exposed areas on the valley floor where high winds convey sand and persistently shift the sand dunes, allowing for little or no vegetation to be supported on them. The term 'active' refers to the fact that windbreaks have not impaired the aeolian (wind-borne) processes that contribute to sand transport, accumulation and depletion in the sand fields. Because the dunes are continually shifting and accumulating sand, perennial plant cover is very low with much of the surface exposed or barren for most of the year. However, dunes do become covered with native annual plants (most visibly sand verbena and dune primrose) in years of high rainfall.

The second sand community subtype, active desert sand fields, is located within the Coachella Valley Preserve next to the dunes. While not in dune formation, sand within these fields is actively being deposited and depleted to form sheets of desert sand. Similar to the dunes, active desert sand fields are generally unable to support extensive vegetation due to the active aeolian processes. Sand may also pile up against creosote bush, mesquite and other perennials to create hummocks or mounds that can support other plants and wildlife.

The last community subtype, stabilized dunes and sand fields, is generally found on the valley floor where it is cut off from fresh sources of sand due to windbreaks, upwind development and construction of roads. The result is stabilized or partially-stabilized sand fields not undergoing active sand deposition or movement occurring just north of the Whitewater River and north of Interstate 10.

Woodland and Forest Communities: Coachella Valley supports oak woodlands and forests composed of black oak forest and canyon live oak forest communities. These communities are dominated by canyon live oak, interior live oak and black oak in the canopy, which may be continuous to intermittent or savannah-like. Four-needle pinyon, single-leaf pinyon pine and California juniper are the canopy species of peninsular juniper woodland which most commonly occur in Southern California, forming a scattered canopy from 10 to 50 feet tall.

Many understory plants in oak woodlands are shade tolerant and include wild blackberry, snowberry, California walnut, California-lilac, *Rhus* spp., currant, toyon, California bay, manzanita, laurel sumac, poisonoak and herbaceous plants including bracken fern, polypody fern, fiesta flower and miner's lettuce. A variety of grasses and soft shrubs also are commonly found in these communities. This natural community can occur in a variety of areas, including sides of streams, canyon bottoms and flat to very steep topography throughout the region.

Coachella Valley also supports coniferous woodland and forest communities, including bigcone spruce-canyon oak forest, Coulter pine forest, Jeffrey pine forest, Jeffrey pine-fir forest, Mojavean pinyon and juniper woodland, Peninsular juniper woodland and scrub, Sierran mixed coniferous forest, Southern California subalpine forest and Westside ponderosa pine forest communities. These communities occur in the San Bernardino, San Jacinto and Santa Rosa Mountain ranges.

These communities contain pinyon pine, California juniper, big sagebrush, desert scrub oak (*Quercus turbinella*), Mojave yucca (*Yucca schidigera*), birchleaf mountain mahogany (*Cercocarpus betuloides*), beargrass (*Nolina parryi*) and four-leaf pinyon pine. These communities include perennial plant species typical of a creosote bush scrub matrix, with perennial shrub species including creosote bush (*Larrea tridentata*), four-wing saltbush (*Atriplex canescens*), California croton (*Croton californicus*), sandpaper plant, indigo bush, desert willow (*Chilopsis linearis*) and honey mesquite (*Prosopis glandulosa*) shrubs.

Riparian Communities: Coachella Valley supports riparian communities that include arroweed scrub, desert fan palm oasis woodland, southern arroyo willow riparian forest and tamarisk scrub. These communities occur in canyon mouths and alluvial fans in the northwest portion of the region, south of Fingal, near Snow Canyon, southeast of Snow Canyon, in Wood Stubbe, Cottonwood, Whitewater, Mission, Big Morongo and Chino Canyons. The community also includes portions of Dry Morongo Creek, scattered locations in the Whitewater River channel east of Monroe Avenue, the Thousand Palms Preserve, Millard Canyon, Lion Canyon, Blaisdell Canyon and the Dos Palmas Preserve and washes along the San Andreas Fault.

These riparian communities consist of streamside vegetation, such as arroyo willow (*S. lasiolepis*), Fremont cottonwood, willow, sycamore, white alder, arrowweed, cattails, tule, rushes, saltgrass, fan palm (*Washingtonia filifera*), screwbean mesquite, saltbush, palo verde, ironwood, smoketree (*Psorothamnus spinosus*), desert lavender (*Hyptis emoryi*), cheesebush (*Hymenoclea salsola*), catclaw acacia (*Acacia greggii*) and desert willow.

Developed, Urban and Disturbed: This category includes areas where natural vegetation has been largely destroyed or substantially modified by human activity. Developed lands may include roadways, existing buildings and structures as well as landscaped or groomed areas, such as parks, golf courses, common areas and detention basins. For purposes of the CV-MSHCP, this category includes lakes, landfills, quarries, reservoirs, rural disturbed lands, urban land uses and lands devoted to wind energy. The largest areas of developed, urban and disturbed land occur on the valley floor itself.

While not categorized separately, Coachella Valley also supports areas of open water. Open water was mapped at the Salton Sea and portions of the Whitewater River as well as various small ponds, private reservoirs and portions of stream channels. Open water typically is unvegetated due to a lack of light penetration. However, open water may contain suspended organisms such as filamentous green algae, phytoplankton (including diatoms) and desmids. Floating plants such as duckweed, water buttercup and mosquito fern (*Azolla filiculoides*) also may be present. Open water includes inland depressions, ponds, lakes, reservoirs and stream channels containing standing water and often occur in conjunction with riparian and upland communities. Depths may vary from hundreds of feet to a few inches.

3. Non-MSHCP Areas

The portions of Riverside County encompassed by areas not covered by either the WRC-MSHCP or the CV-MSHCP collectively, the non-MSHCP areas, include the eastern-most third of the county east of the CV-MSHCP area, which stretches to the Arizona border. It also includes an area in the south-central portion of the county between the two MSHCP coverage areas bordered by San Diego County, roughly near the Anza-Borego area. The entire eastern portion of the non-MSHCP area is part of the Sonoran desert and is covered by desert scrub and woodlands/forests at higher elevations in the desert mountains. Other desert communities occur on the flatland. Elevation in the eastern Riverside County portion ranges from about 230 feet below mean sea level at the Salton Sea to about 8,320 feet in the mountains. The south-central portion of non-MSHCP area is characterized by mainly scrub and chaparral vegetation communities. In total, the non-MSHCP area encompasses nearly 2.2 million acres; approximately 60,330 acres for the smaller south-central area with the remainder in the far east portion.

Figure 4.8.4 (Non-MSHCP Areas Natural Communities) presents the natural communities found in the non-MSHCP areas. The natural communities shown in Figure 4.8.4 represent the collapsed, (combined) classifications used in the CV-MSHCP. Table 4.8-C (Non-MSHCP Areas Natural Communities), below, lists both the collapsed and the uncollapsed classifications, as well as the acreage totals. A brief description of each natural vegetation community found in the non-MSHCP area is provided below.

Agriculture: Agricultural lands currently exist within the non-MSHCP areas. This includes field croplands, orchards, groves, vineyards and dairy and livestock feed yards.

Chaparral Communities: Non-MSHCP areas support chaparral communities composed of red shank chaparral and semi-desert chaparral. These communities occur on the slopes of the desert mountains and in the south-central portion of Riverside County. These communities may contain chamise, redshank , interior live oak, scrub oak, sclerophylls, chaparral whitethorn, birchleaf mountain mahogany, coffeeberry, hollyleaf redberry, California juniper, California buckwheat, *Opuntia* cactus species, manzanita, sugar bush, hoaryleaf ceanothus and big pod mountain lilac (*C. megacarpus*).

Coniferous Woodland/Forest Communities: Non-MSHCP areas support coniferous woodland and forest communities including bigcone spruce-canyon oak forest, coulter pine forest, Jeffrey pine-fir forest, Mojavean pinyon and juniper woodland, Peninsular pinyon and juniper woodland and westside ponderosa pine forest.

These communities occur in the higher elevations of the desert mountains in south-central Riverside County in the non-MSHCP areas. These communities typically feature pinyon pine, California juniper, big sagebrush, desert scrub oak, Mojave yucca, birchleaf mountain mahogany, beargrass and four-leaf pinyon pine.

Table 4.8-C: Non-MSHCP Areas Natural Communities

Collapsed Classification	Acreage[1]	% of Habitat	Uncollapsed Classification[2]	Acreage
Agricultural Land[1]	96,110	4%	Agricultural fields, crops, groves & orchards	*96,110*
Chaparral	16,280	1%	Red shank chaparral[3]	*15,840*
			Semi-desert chaparral[3]	*450*
Woodland and Forest	15,490	1%	Coulter pine forest	*620*
			Jeffrey pine-fir forest	*1,060*
			Mojavean pinyon and juniper woodland[3]	*12,980*
			Peninsular pinyon and juniper woodland[3]	*790*
			Westside ponderosa pine forest	*40*
Desert Dune Communities	98,840	5%	Desert dune[3]	*62,150*
			Sandy area other than beach	*0*
Mojavean and Sonoran Desert Scrub	1,645,960	75%	Blackbush scrub	*36,690*
			Mojavean creosote bush scrub	*78,040*
			Mojave mixed steppe	*17,950*
			Mojave mixed woody scrub[3]	*157,290*
			Sonoran creosote bush scrub[3]	*1,230,680*
			Sonoran desert mixed scrub	*162,010*
Alkali Playa	13,110	1%	Alkali playa	*13,110*
Riparian and Bottomland	304,660	14%	Desert dry wash woodland[3]	*304,660*
Urban and Disturbed	350	0%	Urban/disturbed	*350*
Total Acreage	**2,190,790**			

Footnotes:
1. Total aggregate acreage.
2. Habitat types tracked under WRC-MSHCP and CV-MSHCP but occur in the Non-MSHCP areas of Riverside County.
3. Included on CNPS lists S or G, 1, 2 or 3 and/or included on CNDB tracking list.

Source: Riverside County GIS Department, analysis of habitat data for Non-MSHCP county areas, 2012.

Desert Dune Communities: Non-MSHCP areas support desert dune communities. These communities are found on valley floor areas in open and gently sloping land. These habitats are characterized by low perennial plant diversity, very high annual or ephemeral plant diversity and a very diverse array of invertebrates. The communities include perennial plant species typical of a creosote bush scrub matrix, with perennial shrub species including creosote bush, four-wing saltbush, California croton, sandpaper plant, indigo bush, desert willow and honey mesquite shrubs.

Mojavean and Sonoran Desert Scrub Communities: Non-MSHCP areas support both Mojavean and Sonoran desert scrub communities. Mojavean desert scrub communities include blackbush scrub, Mojave creosote bush scrub, Mojave-mixed steppe and Mojave-mixed woody scrub. Sonoran desert scrub communities include Sonoran creosote bush scrub and Sonoran desert mixed scrub communities. These communities are found in the alluvial plains that extend out toward the valley floors from the mouth of canyons emerging from the surrounding desert mountains, particularly in the eastern portion of the county.

These communities may include creosote bush, burrobush, Joshua tree, California buckwheat and bladderpod, plus a variety of woody and herbaceous plants, including indigo bush, catclaw acacia, desert lavender, rock daisy and palo verde. Several species of cacti are also present, including fishhook cactus, hedgehog cactus, silver cholla, buckhorn cholla, pencil cholla, prickly pear, beavertail cactus, barrel cactus and ocotillo. Species of note known to occur in this community include California ditaxis and glandular ditaxis.

Alkali Playa Communities: Non-MSHCP areas support playa natural communities composed of alkali playa habitat. The playas are found in the south-central area. As noted previously, playas consist of dry, level lake plains or depressions on montane or intermontane basin floors. Because of their closed hydrology, water flows into the playas as precipitation runoff, then ponds and dries mainly by evaporation, resulting in alkali conditions.

Riparian and Bottomland Communities: Non-MSHCP areas support riparian and bottomland communities, such as desert dry wash woodland. These communities occur in canyon mouths and alluvial fans throughout the far eastern desert regions of Riverside County.

These riparian communities feature streamside canopy vegetation such as arroyo willows, Fremont cottonwood, sycamore, white alder. Desert riparian habitats can also include arrowweed, cattail, tule, rushes, saltgrass, fan palm, screwbean mesquite, saltbush, palo verde, ironwood, smoketree, desert lavender, cheesebush, catclaw acacia and desert willow.

Urban and Disturbed: This category includes areas where natural vegetation has been largely destroyed or substantially modified by human activity. Developed lands may include roadways, existing buildings and structures, as well as landscaped or groomed areas, such as parks, golf courses and detention basins. For this section, this category also includes lakes, landfills, quarries, reservoirs, rural disturbed lands, urban land uses and wind energy lands. The largest areas of developed, urban and disturbed land occur within the Palo Verde Valley.

B. Sensitive Natural Communities

The California Department of Fish and Wildlife (CDFW; formerly the Department of Fish and Game), through NDDB, tracks the occurrence of natural communities which it considers to be the most sensitive in the State of California. These habitats are subsets occurring within the major natural communities just described in the prior section.

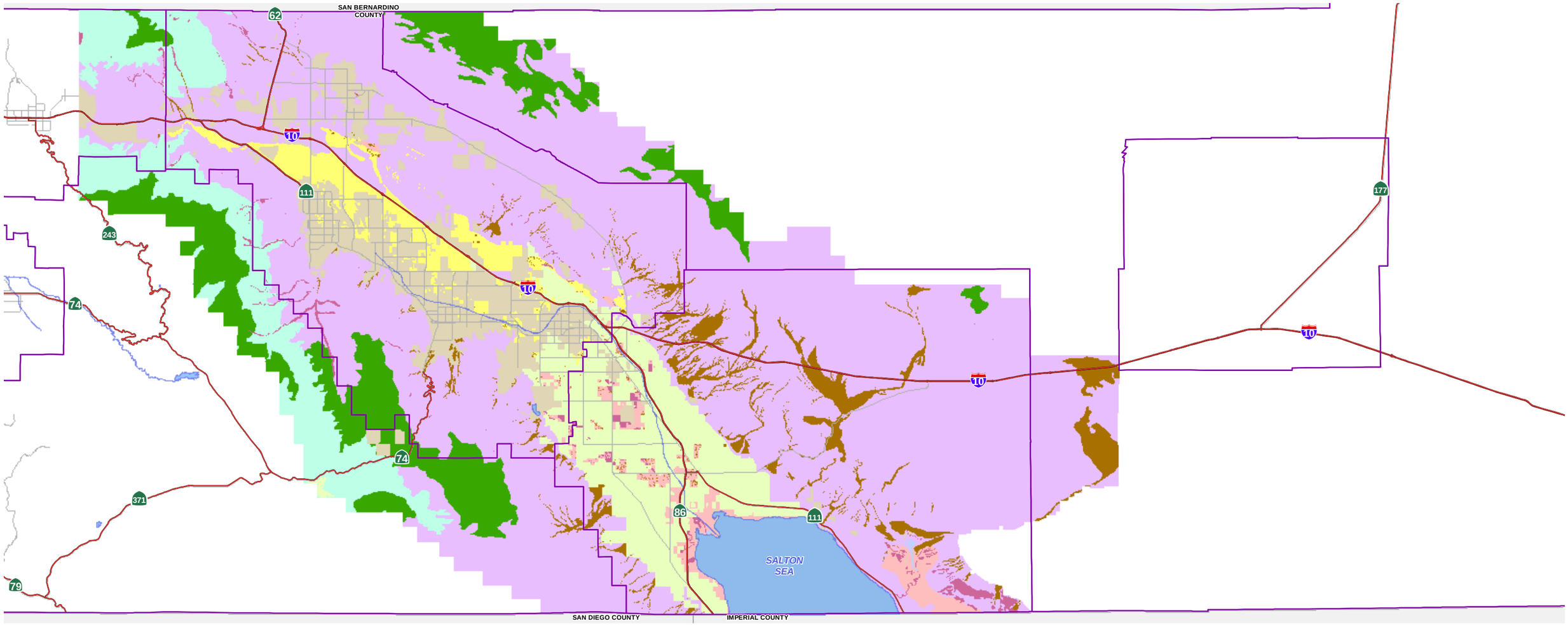
1. Western Riverside County

There are 60 uncollapsed (i.e., subset) natural community classifications within western Riverside County. According to NDDB, 18 are considered sensitive and are described below.

Alkali Playa: Alkali playas are vernal pool-like depressions that form in alkaline soils. Alkali playas are generally larger and contain a more diverse species composition than hardpan pools. Species common to this habitat type include fairy shrimp, spreading navarretia, the threatened thread-leaved brodiaea and the endangered San Jacinto Valley crownscale. For additional information, see vernal pool description below.

Canyon Live Oak Ravine Forest: This community consists of forests with continuous canopies dominated by canyon live oak (*Quercus chrysolepis*), but also potentially including pines, bigcone Douglas fir (*Pseudotsuga macrocarpa*), incense-cedar (*Calocedrus decurrens*), bigleaf maple (*Acer macrophyllum*), California black oak (*Quercus kelloggii*), California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*), or white fir. Shrubs and herbs are infrequent due to the continuous tree canopy. This community occurs in canyons and near mountain streams in non-desert regions of California.

Desert Fan Palm Oasis Woodland: This community consists of woodlands dominated by California fan palm, but also potentially including willows, western sycamore canyon live oak, Fremont cottonwood or velvet ash (*Fraxinus velutina*). This community occurs on intermittently flooded or saturated soils in the Sonoran Desert portion of eastern Riverside County.



Data Source: California Native Plant Species Survey (2005)

- Agriculture
- Chaparral Communities
- Desert Alkali Scrub Communities
- Desert Scrub Communities
- Developed Areas
- Dry Wash Woodland and Mesquite Communities
- Marsh Communities
- Sand Dunes and Sand Fields
- Woodland and Forest Communities
- Riparian Communities
- Highways
- Area Plan Boundary
- Waterbodies

Figure 4.8.3

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COACHELLA VALLEY NATURAL COMMUNITIES

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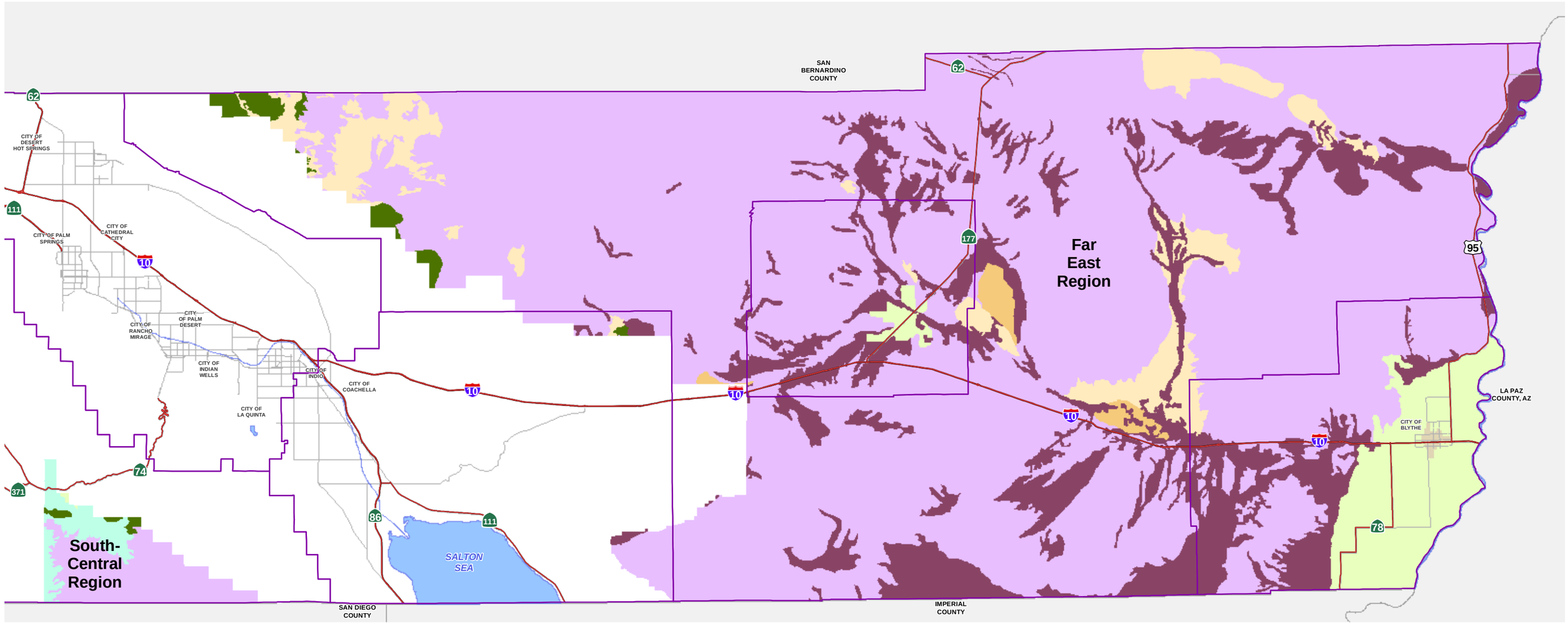

Data Source: LSA Associates (2011)

Agricultural Land
Chaparral
Mojavean and Sonoran Desert Scrub
Alkali Playa
Desert Dune Communities
Coniferous Woodland/Forest
Urban/Disturbed
Riparian and Bottomland
Meadow and Marsh
Highways
Area Plan Boundary
Waterbodies

Figure 4.8.4

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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

NON-MSHCP AREA NATURAL COMMUNITIES

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Engelmann Oak Woodland: Stands of *Quercus engelmannii,* Engelmann oaks, form an open to intermittent tree layer at 16-50 feet tall, an open to continuous shrub layer at 2-16 feet tall and an open to continuous herbaceous layer of up to 3-4 feet tall. The oaks dominate the tree layer or may occur with coast live oak and both species are sometimes regenerating in the shrub layer. Cottonwood and red willow occur infrequently as subdominant trees. Engelmann oak woodland is typically found in elevations between 1,200 and 2,100 feet on gentle to steep slopes within a variety of soils that range from moderately coarse sandy loam to fine clay. In western Riverside County, *Q. engelmannii* habitat can be found in or near the Santa Rosa Plateau, Tenaja and Temecula canyons.

Riversidean Alluvial Fan Sage Scrub: This community consists of shrublands with continuous or intermittent canopies less than five feet high, sometimes with grassy understories and scattered trees may also be present. This community occurs on rarely-flooded alluvial deposits along streams of Southern California. See description in prior section for additional details.

Sonoran Cottonwood Willow Riparian Forest: This community consists of winter-deciduous, broad-leafed streamside forests to about 60 feet tall, dominated by Fremont cottonwood with dense understories of several willow species, in deep, well-watered, loamy alluvial soils along the near-channel floodplains of perennial desert rivers and streams.

Southern California Arroyo Chub/Santa Ana Sucker Stream: This community consists of warm or cool water streams of the Los Angeles Basin that support communities of any of several sensitive fish species such as arroyo chub, Santa Ana sucker or speckled dace. This habitat occurs along the Santa Ana River and its tributaries in Riverside, San Bernardino and Orange Counties.

Southern Coast Live Oak Riparian Forest: This community consists of open to dense evergreen riparian woodlands dominated by coast live oak. This community appears to be richer in herbs and poorer in understory shrubs than other riparian communities. It occurs in bottomlands and outer floodplains along larger stream on fine-grained, rich alluvium in canyons and valleys of coastal Southern California, including western Riverside County.

Southern Cottonwood Willow Riparian: This community consists of tall, open, broad-leafed winter-deciduous riparian forests dominated by Fremont cottonwood, black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) and several tree willows. Understories usually are shrubby willows. The dominant species require moist, bare mineral soil for germination and establishment. This is provided in floodplains after flood waters recede, leading to uniform-aged stands. This community occurs along sub-irrigated and frequently overflowed lands along perennially wet rivers and streams of the Transverse and Peninsular ranges, which include areas in western and central Riverside County.

Southern Interior Basalt Flow Vernal Pool: This community consists of seasonally flooded or saturated depressions on the Santa Rosa Plateau dominated by annual hairgrass (*Deschampsia danthonioides*), downingias (*Downingia* spp.), spreading navarretia (*Navarretia fossalis*), low navarretia (*Navarretia prostrata*), spikerush *(Eleocharis* spp.), California Orcutt grass (*Orcuttia californica*), quillwort (*Isoetes* spp.) or other amphibious herbs or grasses.

Southern Interior Cypress Forest: This community consists of fairly dense, fire-maintained, low forests dominated by either Piute cypress (*Cupressus arizonica* ssp. *nevadensis*), Tecate cypress (*C. forbesii*) or Cuyamaca cypress (*C. arizonica* ssp. *arizonica*). This forest often occurs as isolated groves within a matrix of chaparral or pinyon-juniper woodland. Many stands are even-aged due to past fire effects. This community is most often found on northern exposures in the Southern Sierra Nevada and Peninsular Ranges of California running south into Baja California.

Southern Riparian Forest and Mixed Riparian Forest: Southern riparian forest and mixed riparian forest are generic categories used by the NDDB for riparian forests of undocumented species composition, but most likely dominated by cottonwoods, willows, western sycamore or coast live oak. Southern riparian forests occur throughout non-desert Southern California along streams, floodplains and in bottomlands.

Riparian Scrub: This community consists of riparian scrub dominated by mulefat or shrub willows along rivers and streams in non-desert regions of Southern California. Southern riparian scrub requires frequent flooding to prevent succession to cottonwood or sycamore dominated woodlands.

Southern Sycamore Alder Riparian Woodland: This community consists of tall, open, broad-leafed, winter-deciduous streamside woodlands dominated by western sycamore and sometimes white alder. These stands seldom form closed canopy forests and even may appear as trees scattered in a thicket of evergreen and deciduous shrubs. This community occurs in very rocky streambeds subject to seasonal high-intensity flooding in the Transverse and Peninsular ranges from Point Conception south into Baja California Norte, including western and central Riverside County.

Southern Willow Scrub: This community consists of dense, broad-leafed, winter-deciduous riparian thickets dominated by several willow species with scattered emergent Fremont cottonwood and western sycamore. Most stands are too dense to allow much understory development. This community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows and requires repeated flooding to prevent succession. Southern willow scrub was formerly extensive along the major rivers of coastal Southern California, but now is much reduced by urban expansion, flood control and channelization projects.

Valley and Foothill Grassland: Valley and foothill grasslands typically contain the perennial bunch grasses *Nassella pulchra* and *N. lepida.* Lesser amounts of other native grasses, such as *Melica* spp., *Leymus* spp., *Muhlenbergia* spp. and beard grass (*Bothriochloa barbinodis*), may also be present. In addition, non-native grasses or forbs may be present to varying degrees. Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck (*Amsinckia menziesii*), common calyptridium (*Calyptridium monardum*), suncup (*Camissonia* spp.), Chinese houses (*Collinsia heterophylla*), California poppy, tarweed (*Hemizonia* spp.), coast goldfields (*Lasthenia californica*), common tidy-tips (*Layia platyglossa*), *Lupinus* spp., *Plagiobothrys* spp., blue dicks, *Muilla* spp., blue-eyed grass (*Sisyrinchium bellum*) and *Dudleya* spp.

Valley Needlegrass Grassland: This community consists of midheight (to 2 feet) grasslands dominated by perennial, tussock-forming purple needlegrass (*Nassella pulchra*). Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. It usually occurs on fine-textured (often clay) soils, moist or even waterlogged during winter, but very dry in summer, and often interdigitates with oak woodlands on moister, better-drained sites. This community was formerly extensive around the Sacramento, San Joaquin and Salinas Valleys, as well as the Los Angeles Basin, but is now much reduced.

Vernal Pool: Vernal pools are ephemeral wetlands that form in shallow depressions underlain by a substrate near the surface that restricts the downward percolation of water. Depressions in the landscape fill with rainwater and runoff from adjacent areas during the winter and may remain inundated until spring or early summer, sometimes drying more than once during the wet season. Smaller pools can fill and dry, and larger pools can hold water longer and may in the deeper portions support species that are more representative of freshwater marshes. Vernal pools are well known for their high level of endemism and abundance of rare, threatened, or endangered species. Many vernal pools are characterized by concentric rings of plants that flower sequentially as the pools dry. See the description provided in the previous section for more information.

2. Coachella Valley

There are 53 uncollapsed (i.e., subset) natural community classifications within the Coachella Valley. According to NDDB, 25 are considered sensitive. These are described in more detail below.

Active Desert Dunes: These dunes are essentially barren expanses of actively moving sand; their size and shape are determined by abiotic site factors rather than by stabilizing vegetation. The dunes may intergrade with stabilized and partially stabilized desert dunes. This community occurs within a creosote bush scrub matrix. However, the dunes are the defining feature for this natural community. Perennial shrub species are sparse but may include creosote bush (*Larrea tridentata*), four-wing saltbush, California croton, sandpaper plant and indigo bush. Perennial shrubs are not common on these active dunes in part because their slow-growing stems do not keep pace with the rate of burial by loose sand. In high rainfall years, annual wildflowers, including desert sand verbena and dune evening primrose, may carpet the dunes. In Coachella Valley, the active desert dunes are remnants of a once extensive dune system.

Active Sand Fields: These sand fields are areas of active sand movement with little or no vegetation where accumulated sand is not of sufficient depth to form the classic formations of dune systems. The distinction between this community and active desert sand dunes is sand fields, lack of prominent dune landforms. Sand fields may intergrade with active dunes and stabilized or partially stabilized dunes. They may also be characterized by hummocks of sand forming behind individual shrubs or clumps of vegetation. Vegetation varies from scant cover of widely scattered shrubs and annual wildflowers to denser shrub cover. This community typically occurs within a creosote bush scrub matrix.

Arrowweed Scrub: This community is composed of moderate to dense streamside thickets dominated by arrowweed. Cattails, tules, rushes and saltgrass may occur as scattered individuals, especially around the margins. Saltgrass is a common ground cover. Arrowweed scrub replaces willow and cottonwood riparian forests in areas where soils are more saline or alkaline. This natural community occurs around the Salton Sea and along the lower Colorado River.

Chamise Chaparral: Chamise chaparral is one of nine chaparral types in California. Chamise chaparral ranges in height from 3 to 10 feet and is overwhelmingly dominated by chamise (*Adenostoma fasciculatum*). It is adapted to repeated fires by stump sprouting. Mature stands are densely interwoven with very little herbaceous understory or litter and a nearly continuous canopy. This is a common community on the western slopes of the San Jacinto and Santa Rosa Mountains. It also occurs on the lower slopes of the San Bernardino Mountains west of Whitewater Canyon, near the western edge of Coachella Valley and in a band from the Whitewater River to Stubbe Creek.

Cismontane Alkali Marsh: This community is dominated by perennial, emergent, herbaceous monocots to 6 feet tall; cover is often complete and dense. Dominant species include cattail, alkali bulrush (*Scirpus americanus*) and saw-grass (*Cladium californicum*). Iodine bush is also associated with these marshes. This marsh habitat occurs where standing water or saturated soil is present throughout most or all of the year. High evaporation and low input of freshwater render the marsh alkaline. This natural community occurs in the Dos Palmas area, where about a third of it is on public or private conservation lands. It is important habitat for two sensitive marsh birds, the Yuma clapper rail and the California black rail.

Coastal and Valley Freshwater Marsh: This community is dominated by perennial, emergent monocots (reed-like plants), including cattails, bulrush, tules and rushes, often forming completely closed canopies. Sites lack significant currents and are permanently flooded with freshwater rather than brackish water. About 61 acres occurs in one location at the mouth of the Coachella Valley Stormwater Channel to the Salton Sea. Small stands

of freshwater marsh also occur at Dos Palmas, on the edge of some of the palm oases (e.g., Andreas Oasis) and along the margins of the recently restored man-made ponds. Because these stands are small, they are not visible on the natural communities maps in this section. This community type is also subject to invasion from tamarisk.

Desert Dry Wash Woodland: The desert dry wash woodland community is open to dense, drought-deciduous, small-leaved thorn scrub woodland to 30 to 60 feet tall, dominated by any of several members of the bean family including palo verde (*Cercidium floridum*), ironwood (*Olneya tesota*) and smoketree (*Psorothamnus spinosus*). Associated species include desert lavender (*Hyptis emoryi*), cheesebush, catclaw acacia (*Acacia greggii*) and desert willow. It occurs in washes subject to intermittent flooding, but without perennial water. These washes are associated with canyon mouths and alluvial fans in the Santa Rosa, San Bernardino, Little San Bernardino, Cottonwood, Eagle and Orocopia Mountains. The Mecca Hills Arroyo margins in the Colorado Desert also support a relatively dense growth of trees.

Desert Fan Palm Oasis Woodland: This community is composed of open to dense groves dominated by fan palm (*Washingtonia filifera*) of up to 75 to 100 feet tall. The understory is sparse, especially in alkaline areas or in dense groves, where the ground is mulched by fallen palm fronds. *Washingtonia* is a relict species and this community is restricted to areas with available water in and around the Salton Basin and south into Baja California. Washes along the San Andreas Fault are the site of emergence of underground water and, therefore, the location of many oases. Other oases are present in washes and on hillsides, where exposed strata or other geological structures produce permanent water.

Desert Saltbush Scrub: The desert saltbush scrub community can include various species of saltbush in a nearly uniform stand of shrubs forming a more complete cover than in creosote bush scrub. This community occurs in areas with fine-textured, poorly-drained soils with high salinity and/or alkalinity or habitats that are generally moist with a sandy loam soil and a total salinity in the range of 0.2-0.7%. The community is often composed of a nearly uniform stand of shrubs about three feet tall forming a more complete cover than in creosote bush scrub. One or more species of atriplex are dominant in this community, including alkali saltbush (*Atriplex polycarpa*) and four-winged saltbush (*A. canescens* var. *linearis*). Screwbean mesquite (*Prosopis glandulosa* var. *torreyana*) is a common associate. Four-wing saltbush shows greater dominance in dryer, coarser soils and occurs throughout the desert saltbush scrub community. Screwbean mesquite reaches greater development in lower-elevation areas with a shallow water table or capillary fringe. Alkali goldenbush (*Isocoma acradenia*) is common in areas where *P. glandulosa* is dominant. Once common in the Coachella Valley, this community now occurs only in small patches in the Willow Hole area, the Thousand Palms Preserve and in the higher salinity soils in the area around the northern portion of the Salton Sea.

Desert Sink Scrub: This community is similar to desert saltbush scrub, but plants are often more widely spaced and most species are succulent chenopods. Saltbush (*Atriplex* spp.) is a minor component. Pickleweed, iodine bush and bush seepweed (*Suaeda moquinii*) are characteristic of this community. It occurs at lower elevations on poorly-drained moist to wet soils with high alkalinity and/or salinity. Desert sink scrub appears to displace desert saltbush scrub in areas of a high water table with a salt crust at the surface. Some of the species, in particular iodine bush, can endure more alkaline or salty soils than most other desert plants. In some areas, such as at Dos Palmas, the plant cover is extremely low and this natural community grades into alkaline flats devoid of vegetation. Desert sink scrub is found in the vicinity of the Salton Sea, partially on Torres Martinez Reservation land and private land, and in the Dos Palmas/Salt Creek area east of the Salton Sea.

Ephemeral Sand Fields: These are desert sand accumulations lacking dune formations and characterized by irregular deposition of sand materials that are regularly blown away. Lost sand may not be replaced a major flood event or other movement process brings new sand. This community occurs primarily at the western end of the Coachella Valley where wind speeds are consistently at or above 15 mph and sands are routinely blown away.

This exposure to consistent winds tends to reduce vegetation cover. Where vegetation is present, it tends to be of a Sonoran creosote bush scrub matrix. Perennial shrubs are generally widely scattered and include creosote bush, indigo bush, desert willow and California croton.

Interior Live Oak Chaparral: The interior live oak chaparral community occurs as a dense, tall (to 20 feet) chaparral dominated by interior live oak and scrub oak with several other sparsely-leaved, woody species also in the canopy. Other associated species include chaparral whitethorn, birchleaf mountain mahogany, coffeeberry and hollyleaf redberry. This chaparral is fairly mesic (dry) and occurs in valley and foothills. In Southern California, stands are believed to be the result of frequent sprouting after fire as this community recovers rapidly after fire. There is typically very little understory due to the persistent leaf litter and dense canopy of these stands.

Mesquite Bosque: This community is an open to fairly dense, drought-deciduous streamside thorn forest dominated by screwbean mesquite with open, park-like interiors maintained by frequent flooding or fire. It occurs in dry washes. The understory is sparse but may include various species of saltbush, iodine bush and saltgrass. This community is found only in the Dos Palmas area.

Mesquite Hummocks: This community is composed of large clumps of low-growing honey mesquite (*Prosopis glandulosa*) shrubs. The mesquite shrubs form hummocks over sand dunes, such as at Willow Hole and the Thousand Palms Preserve. Hummocks also occur on level terrain, at the margins of palm oases or in the area south and east of Indio to the north end of the Salton Sea. Mesquite hummocks are typically associated with high soil moisture near fault areas or springs. This community occurs in the Coachella Valley at one location south of Cabazon, in the vicinity of Willow Hole, on the Thousand Palms Preserve and along the southern base of the Indio Hills in areas associated with the San Andreas Fault. They also occur around the northern end of the Salton Sea and at Dos Palmas. Mesquite hummocks were formerly widespread from the dune areas of Indian Wells, La Quinta and Indio south to the Salton Sea, but are now restricted to undeveloped lots amid urban or agricultural lands. Changes in soil moisture and water table declines may have reduced the occurrence of these hummocks. Unfortunately, remaining mesquite hummocks are highly fragmented and often senescent (dead or dying), perhaps due to lack of groundwater.

Mojavean Pinyon-Juniper Woodland: Mojavean pinyon-juniper woodland is an open woodland habitat dominated by pinyon pine and California juniper, with an open shrubby understory of species commonly found in adjacent non-forested stands. Understories are more diverse in shrubs than most pinyon-juniper habitat types and may actually exceed tree cover. Dominant shrubs include big sagebrush (*Artemisia tridentata*), desert scrub oak (*Quercus turbinella*), Mojave yucca (*Yucca schidigera*) and birchleaf mountain mahogany. This community typically occurs between 4,000 and 8,000 feet elevation in the desert mountain ranges and often intergrades with Mojavean juniper woodland and scrub.

Mojave Mixed Woody Scrub: Mojave mixed woody scrub is a complex scrub community, open enough to be passable and usually characterized by Joshua tree (*Yucca brevifolia herbertii*), California buckwheat and bladderpod (*Isomeris arborea*). Most of the constituent species also occur in other nearby communities. Sites where this community occurs typically have very shallow, overly-drained, often rolling to steep soils, usually derived from granitic parent materials. These sites have extremely low water-holding capacity, mild alkalinity and are not very saline. The typical elevation range is 2,000-5,000 feet.

Peninsular Juniper Woodland and Scrub: This is a somewhat dense woodland dominated by California juniper and pinyon pine. Litter layers are restricted to directly beneath trees. Other species include desert scrub oak, Mojave yucca, beargrass (*Nolina parryi*), four-leaf pinyon pine and big sagebrush. In the Coachella Valley, this community occurs on the desert slopes of the San Jacinto and Santa Rosa Mountains at elevations between 3,500

and 5,500 feet. Fire is not a typical element in this community as fuel loads are usually insufficient to carry a fire. Juniper and pinyon do not tolerate fire well, thus fires may result in a type conversion to semi-desert chaparral.

Redshank Chaparral: Redshank chaparral is similar to chamise chaparral, but it is typically taller (6-15 feet) and somewhat more open, often forming nearly pure stands of redshank (*Adenostoma sparsifolium*). Redshank itself is an open shrub or small tree with multiple branches from the base covered with rust-red, shaggy bark. Redshank chaparral is often adjacent to and may intergrade with chamise chaparral. Redshank chaparral is found in only four locations in Southern California and Baja California. Its center of distribution is in the San Jacinto and Santa Rosa Mountains and the interior valleys of Riverside and San Diego Counties. It ranges in elevation from 2,000 to 6,000 feet with both coastal and desert exposures on granitic soils. Considered by some to be at risk, this ranking is perhaps because this natural community is not widely distributed in California and occurs in areas of increasing pressure from urbanization.

Semi-Desert Chaparral: The semi-desert chaparral community consists mainly of woody evergreen shrubs 5-10 feet in height and is somewhat more open than most chaparrals. Some of the dominant plant species include California juniper, California buckwheat and *Opuntia* cactus species. Other associated species include manzanita, Ceanothus species, sugar bush and scrub oak. This community tends to occur on rockier soils or recently burned sites. Semi-desert chaparral is less fire-prone than other chaparrals because of the lower fuel loads. This community is distributed from on the interior slopes of the Transverse and Peninsular Ranges including mountains in central and eastern Riverside County. It is most common between 2,000 to 5,000 feet elevation.

Sonoran Creosote Bush Scrub: Sonoran creosote bush scrub is the most widespread vegetation type in the Colorado Desert. It is dominated by creosote bush (*Larrea tridentata*). It characterizes the vast intermountain bajadas, reaching greatest development on coarse, well-drained soil with a total salinity of less than 0.02%. Sonoran creosote bush scrub occurs in areas surrounding the Salton basin between the higher rocky hillsides and the lower-lying desert saltbush community. The transition to desert saltbush occurs as the soil becomes heavier and the salt content increases to approximately 0.2%. The physiognomy of the Sonoran creosote bush scrub community is simple because of low species diversity and the broad spacing of the shrubs, 1-10 feet tall, usually with bare ground between. The codominant species in the community is burrobush (*Ambrosia dumosa*), a much shorter shrub. Many species of ephemeral herbs may flower in late winter/early spring if winter rains are sufficient. It is widespread on the valley floor and in the northeastern portion of the Coachella Valley.

Sonoran Mixed Woody and Succulent Scrub: This is the only Sonoran desert community in the Coachella Valley with substantial dominance of cacti and other stem succulents. It is similar to creosote bush scrub, but more varied and usually with a higher plant density. In addition to creosote bush and other associated perennial shrubs, typical species include silver cholla (*Opuntia echinocarpa*), buckhorn cholla, pencil cholla, prickly pear, beavertail cactus, barrel cactus and ocotillo (*Fouquieria splendens*). This community occurs on alluvial fans and slopes of the Santa Rosa Mountains, in the Little San Bernardino Mountains and on the valley floor north of Interstate 10 to just east of the Thousand Palms Preserve.

Southern Arroyo Willow Riparian Forest: This community consists of streamside vegetation dominated by arroyo willow (*Salix lasiolepis*) often forming dense thickets. It has a continuous canopy up 10 to 35 feet with typically sparse to non-existent shrub and herb layers. These riparian forests are seasonally flooded, but water is present year-round. In the Coachella Valley, this community occurs in the northwest, south of Fingal, near Snow Canyon southeast of Snow Canyon and in Wood Canyon.

Stabilized Desert Dunes: Large portions of the Coachella Valley ~~on the valley~~ floor were originally ~~comprised of~~ *covered with* active sand dunes and sand fields. However, a variety of changing circumstances have cut off many of these areas from fresh sources of sand, including the construction of the Union Pacific Railroad lines, Inter-

state 10 and associated windbreaks, upwind development and roads. The result is stabilized or partially stabilized sand fields, which occur from just north of the Whitewater River to areas north of Interstate 10.

These sand dune accumulations are stabilized or partially stabilized by evergreen and/or deciduous shrubs, scattered low annuals and perennial grasses. They are characterized by prominent dune features with consistent cover of vegetation. This community may intergrade with active desert dunes in windier sites and with stabilized and partially stabilized desert sand fields or sandier phases of creosote bush scrub. This community includes perennial plant species typical of a creosote bush scrub matrix, with perennial shrub species including creosote bush, four-wing saltbush, California croton and indigo bush. However, the dune characteristics are the defining feature. The total cover of vegetation increases as the dunes are progressively stabilized. Stabilization varies based on input of sand, rainfall (which influences vegetative cover) and other factors.

Stabilized Desert Sand Fields: This community consists of desert sand accumulations stabilized by vegetation and lacking dune formations. A small patch occurs west of Fingal's Finger. The most extensive occurrence is north of Highway 111 from Windy Point to approximately Indian Avenue. Scattered patches occur in the Willow Hole and Edom Hill areas. This is also the primary sand community at the east end of the Indio Hills. This community occurs within a creosote bush scrub matrix. Perennial plants occurring on these sand fields are the same as those listed for stabilized and partially stabilized desert dunes.

Stabilized Shielded Sand Fields: This community is essentially similar to the stabilized and partially stabilized desert sand fields community, except that sand source and sand transport systems, which would supply sand to the sand fields, have been interrupted or shielded. This natural community occurs west of the existing Whitewater Floodplain Preserve, adjacent to the recharge ponds, which shield this dune area. It also includes most of the remaining sand fields that make up the Big Dune south of Interstate 10 and portions of the sand fields south of the Indio Hills and east of the Thousand Palms Preserve. The long-term persistence of stabilized shielded desert sand fields is compromised by the interruption of the sand source and sand transport system.

3. Non-MSHCP Areas

The non-MSHCP areas contain eight sensitive natural communities that provide habitat for covered species. Sonoran creosote bush scrub, as previously described under Coachella Valley, is by far the dominant community occurring within the non-MSHCP areas. It is widespread across the eastern desert floor. Other habitats that occur within the non-MSHCP areas include Mojave mixed woody scrub, redshank chaparral, semi-desert chaparral, desert dry wash woodland, Mojavean pinyon and juniper woodland and Peninsular pinyon-juniper woodland. See the previous section for descriptions of these. The following sensitive community also occurs in the non-MSHCP area.

Desert Dunes: These dunes are barren expanses of actively moving sand; their size and shape are determined by abiotic site factors rather than by stabilizing vegetation. The dunes may intergrade with stabilized and partially stabilized desert dunes. This community occurs within a creosote bush scrub matrix. However, the dunes are the defining feature for this natural community. Perennial shrub species are sparse but may include creosote bush, four-wing saltbush, California croton, sandpaper plant (*Petalonyx thurberi*) and indigo bush (*Psorothamnus arborescens*). These perennial shrubs are not common on these active dunes in part because their slow-growing stems do not keep pace with the rate of burial by loose sand. In high rainfall years, annual wildflowers, including desert sand verbena and dune evening primrose (*Oenothera deltoides*), may carpet the dunes. In the non-MSHCP areas, the active desert dunes are remnants of a once extensive dune system.

C. Candidate, Sensitive and Special Status Species

Approximately 349 species in Riverside County are considered candidate, sensitive or special status under the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), or the California Native Plant Protection Act or by CDFW. These include species that are listed as endangered or threatened under FESA, proposed or candidates for such listing and species that are listed as endangered, threatened or rare under CESA or that have been petitioned (i.e., are candidates) for listing. Of these species, 146 are covered by the WRC-MSHCP and 27 are covered by the CV-MSHCP. Table 4.8-D (Sensitive Species of Riverside County Within the WRC-MSHCP or CV-MSHCP) lists species covered by an MSHCP along with their state and federal status, their CNPS status and the habitat type(s) in which they are most commonly found or are expected to occur. It should be noted that Table 4.8-D is provided as a quick reference summarization only. Details on the habitat and distributions of these species may be found in the June 2003 WRC-MSHCP or the September 2007 CV-MSHCP, respectively. ~~The WRC-MSHCP and the CV-MSHCP are herein incorporated by reference.~~

In addition to the above, Table 4.8-E (Additional Candidate, Sensitive and Special Status Species Potentially in Riverside County) encompasses the sensitive and protected species that are not explicitly covered by an MSHCP in Riverside County. Table 4.8-D and Table 4.8-E are composite lists derived from the NDDB and CNPS databases as well as the WRC-MSHCP and CV-MSHCP.

Table 4.8-D: Sensitive Species of Riverside County in the WRC-MSHCP or CV-MSHCP

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
PLANTS						
Allium marvinii	Yucaipa onion			1B.1	Wa	Chaparral
Allium munzii[4,5]	Munz's onion	E	T	1B.1	We	Chaparral; Coastal Sage Scrub; Grasslands; Playas and Vernal Pools; Woodland/Forest
Ambrosia pumila[4,5]	San Diego ambrosia	E	-	1B.1	We	Grasslands; Playas and Vernal Pools; Alkali Playa
Arabis johnstonii[4]	Johnson's rock cress	-	-	1B	We	Chaparral; Cismontane Alkali Marsh; Montane Coniferous Forest; Woodland/Forest
Arctostaphylos rainbowensis[4]	Rainbow manzanita	-	-	1B.1	We	Chaparral
Astragalus lentiginosus var. *coachellae*[4]	Coachella Valley milkvetch	E	-	1B.2	CV	Sand Dune/Sand Field; Desert Scrub; Riparian; Mojavean and Sonoran Desert Scrub; Desert Dune
Astragalus pachypus var. *jaegeri*[4]	Jaeger's milk-vetch	-	-	1B.1	Wa	Chaparral; Coastal Sage Scrub; Grassland; Woodland/Forest
Astragalus tricarinatus[4]	Tripple-ribbed milkvetch	E	-	1B.2	CV	Desert Scrub; Riparian; Mojavean and Sonoran Desert Scrub
Atriplex coronata var. *notatior*[4]	San Jacinto Valley crownscale	E	-	1B.1	We	Grassland; Alkali Playa; Playa and Vernal Pools
Atriplex parishii[4]	Parish's brittlescale	-	-	1B.1	We	Grassland; Playa and Vernal Pools
Atriplex serenana var. *davidsonii*[4]	Davidson's saltscale	-	-	1B.2	We	Grassland; Playa and Vernal Pools
Berberis nevinii[4,5]	Nevin's barberry	E	T	1B.1	We	Chaparral; Coastal Sage Scrub; Riversidean Alluvial Fan Sage Scrub
Brodiaea filifolia[4,5]	Thread-leaved brodiaea	T	E	1B.1	We	Grasslands; Playa and Vernal Pools; Alkali Playa
Brodiaea orcutti[4]	Orcutt's brodiaea	fss	-	1B.1	Wa	Playas and Vernal Pools; Meadow and Marshes
Calochortus palmeri var. *munzii*[4]	Munz's mariposa lily	-	-	1B.2	We	Chaparral; Meadow and Marshes; Cismontane Alkali Marsh; Montane Coniferous Forest

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
Calochortus plummerae[4]	Plummer's mariposa lily	-	-	1B.2	We	Chaparral; Coastal Sage Scrub; Cismontane Alkali Marsh; Montane Coniferous Forest; Woodland/ Forest
Calochortus weedii var. *intermedus*[4]	Intermediate mariposa lily	-	-	1B.2	Wa	Chaparral; Coastal Sage Scrub
Caulanthus simulans[4]	Payson's jewel-flower	-	-	4.2	Wa	Chaparral; Coastal Sage Scrub; Woodland/Forest
Ceanothus ophiochilus[4,5]	Vail Lake ceanothus	E	T	1B.1	We	Chaparral
Centromadia pungens ssp. *laevis*[4]	Smooth tarplant	-	-	1B.1	We	Grassland; Playa and Vernal Pools
Chorizanthe leptotheca[4]	Peninsular spineflower	-	-	4.2	We	Chaparral; Coastal Sage Scrub; Montane Coniferous Forest
Chorizanthe parryi var. *parryi*[4]	Parry's spineflower	-	-	1B.1	We	Chaparral; Riversidean Alluvial Fan Sage Scrub
Chorizanthe polygonaoides var. *longispina*[4]	Long-spined spineflower	-	-	1B.2	Wa	Chaparral; Coastal Sage Scrub; Grassland
Chorizanthe procumbens[4]	Prostrate spineflower	-	-	4	Wa	Chaparral; Coastal Sage Scrub; Grassland
Convolvulus simulans[4]	Small-flowered morning glory	-	-	4.2	Wa	Coastal Sage Scrub; Grassland
Deinandra mohavensis[4]	Mojave tarplant	-	E	1B.3	We	Chaparral; Riparian Scrub, Woodland and Forest
Dodecahema leptoceras[4]	Slender-horned spineflower	E	E	1B.1	We	Chaparral; Coastal Sage Scrub; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub
Dudleya multicaulis[4]	Many-stemmed dudleya	-	-	1B.2	We	Chaparral; Coastal Sage Scrub; Grassland
Dudleya viscida[4]	Sticky-leaved dudleya	-	-	1B.2	Wf	Chaparral; Coastal Sage Scrub
Eriastrum densifolium ssp. *sanctorum*[4]	Santa Ana River woollystar	E	E	1B.1	Wa	Coastal Sage Scrub; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Scrub
Erodium macrophyllum[4]	Large-leaf filaree	-	-	2	We	Grassland; Woodland/Forest
Eryngium aristulatum var. *parishii*[4]	San Diego button-celery	E	E	1B.1	Wa	Playa and Vernal Pools
Galium angustifolium ssp. *jacinticum*[4]	San Jacinto Mnts. bedstraw	-	-	1B.3	We	Montane Coniferous Forest; Cismontane Alkali Marsh
Galium californicum ssp. *primum*[4]	California bedstraw	-	-	1B.2	Wf	Chaparral; Montane Coniferous Forest
Harpagonella palmeri var. *palmeri*[4]	Palmer's grapplinghook	-	-	4.2	Wa	Coastal Sage Scrub; Grassland; Chaparral
Heuchera hirsutissima[4]	Shaggy-haired alumroot	-	-	1B.3	Wf	Montane Coniferous Forest
Holocarpha virgata ssp. *elongata*[4]	Graceful tarplant	-	-	4.2	We	Chaparral; Coastal Sage Scrub; Grassland; Meadow and Marshes; Playas and Vernal Pools; Woodland/Forest
Hordeum intercedens[4]	Vernal barley	-	-	3.2	Wa	Grassland; Playas and Vernal Pools
Hulsea vestita ssp. *callicarpha*[4]	Beautiful hulsea	-	-	4.2	We	Chaparral; Montane Coniferous Forest
Juglans californica var. *californica*[4]	Southern Calif. black walnut	-	-	4.2	Wa	Woodland/Forest; Riparian Scrub, Woodland and Forest
Lasthenia glabrata ssp. *coulteri*[4]	Coulter's goldfields	-	-	1B.1	We	Grassland; Playas and Vernal Pools
Lepechinia cardiophylla[4]	Heart-leaved pitcher sage	-	-	1B.2	We	Chaparral, Woodland/Forest
Lilium humboldtii ssp. *ocellatum*[4]	Ocellated Humboldt lily	-	-	4.2	Wf	Cismontane Alkali Marsh; Montane Coniferous Forest; Woodland/Forest
Lilium parryi[4]	Lemon lily	-	-	1B.2	Wf	Cismontane Alkali Marsh; Riparian Scrub, Woodland and Forest; Woodland/Forest

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
Limnanthes gracilis var. *parishii*[4]	Parish's meadowfoam	-	E	1B.2	Wa	Meadow and Marshes; Playas and Vernal Pools; Alkali Playa
Linanthus maculates[4]	Little San Bernardino Mtns. linanthus	-	-	1B.2	CV	Dry Wash Woodland and Mesquite
Microseris douglasii var. *platycharpha*[4]	Small-flowered micro-seris	-	-	4.2	We	Grassland; Playas and Vernal Pools
Mimulus clevelandii[4]	Cleveland's bush monkeyflower	-	-	4.2	Wf	Chaparral; Montane Coniferous Forest; Woodland/Forest
Mimulus diffusus[4]	Palomar monkeyflower	-	-	4.3	Wa	Chaparral; Montane Coniferous Forest
Monardella macrantha ssp. *hallii*[4]	Hall's monardella	-	-	1B.3	Wa	Chaparral; Grassland; Montane Coniferous Forest; Woodland/Forest
Muhlenbergia californica[4]	California muhly	-	-	4.3	We	Chaparral; Coastal Sage Scrub; Meadow and Marshes; Cismontane Alkali Marsh; Montane Coniferous Forest
Myosurus minimus[4]	Little mousetail	-	-	3.1	We	Grassland; Playas and Vernal Pools
Nama stenocarpum[4]	Mud nama	-	-	2.2	We	Meadow and Marshes; Playas and Vernal Pools
Navarretia fossalis[4,5]	Spreading navarretia	T	-	1B.1	We	Grassland; Playas and Vernal Pools; Alkali Playa
Navarretia prostrate[4]	Prostrate navarretia	-	-	1B.1	We	Coastal Sage Scrub; Grassland; Playas and Vernal Pools
Orcuttia californica[4]	California Orcutt grass	E	E	1B.1	Wa	Playas and Vernal Pools; Alkali Playa
Oxytheca caryophylloides[4]	Chickweed oxytheca	-	-	4	We	Montane Coniferous Forest
Penstemon californicus[4]	California beardtongue	-	-	1B.2	Wa	Chaparral; Montane Coniferous Forest
Phacelia stellaris[4]	Brand's phacelia	-	-	-	We	Coastal Sage Scrub
Polygala cornuta var. *fishiae*[4]	Fish's milkwort	-	-	4.3	We	Chaparral; Cismontane Alkali Marsh; Riparian Woodland and Forest; Woodland/Forest
Potentilla rimicola[4]	Cliff cinquefoil	-	-	2.3	We	Montane Coniferous Forest
Quercus engelmannii[4]	Engelmann oak	-	-	4.2	Wa	Riparian Scrub, Woodland and Forest; Woodland/Forest
Romneya coulteri[4]	Coulter's matilija poppy	-	-	4.2	We	Chaparral
Salvia greatae[4]	Orocopia sage	-	-	1B.3	CV	Marsh; Dry Wash Woodland and Mesquite
Satureja chandleri[4]	San Miguel savory	fss	-	1B.2	We	Chaparral; Coastal Sage Scrub; Grassland; Riparian Scrub, Woodland and Forest; Woodland/Forest
Sibaropsis hammittii[4]	Hammitt's clay-cress	-	-	1B.2	We	Chaparral; Coastal Sage Scrub; Grassland; Woodland/Forest
Trichocoronis wrightii var. *wrightii*[4]	Wright's trichocoronis	-	-	2.1	We	Grassland; Playas and Vernal Pools
Xylorhiza cognate[4]	Mecca aster	-	-	1B.2	CV	Dry Wash Woodland and Mesquite; Riparian and Bottomland
INVERTEBRATES						
Branchinecta lynchi[4]	Vernal pool fairy shrimp	T	E	-	We	Playas and Vernal Pools; Alkali Playa
Euphydryas editha quino[4,5]	Quino checkerspot butterfly	E	-	-	Wa	Grassland; Coastal Sage Scrub; Chaparral
Linderiella santarosae[4]	Santa Rosa Plateau fairy shrimp	-	-	-	We	Playas and Vernal Pools
Macrobaenetes valgum[4]	Coachella Vlly giant sand-treader cricket	-	-	-	CV	Sand Dune/Sand Fields
Rhaphiomidas terminatus abdominalis[4]	Delhi sands flower-loving fly	E	-	-	Wa	Chaparral; Coastal Sage Scrub
Stenopelmatus cahuilaensis[4]	Coachella Vlly Jerusalem Cricket	-	-	-	CV	Dry Wash Woodland and Mesquite
Streptocephalus woottoni[4]	Riverside fairy shrimp	E	-	-	We	Playas and Vernal Pools; Alkali Playa

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
FISH						
Catastomus santaanae[4,5]	Santa Ana sucker	T, fss	ssc	-	Wa	Water
Cyprinodon macularius[4]	Desert pupfish	E	E	-	CV	Water
Gila orcuttii[4]	Arroyo chub		ssc	-	Wa	Water
AMPHIBIANS						
Bufo microscaphus californicus[4,5]	(Southwestern) arroyo toad	E	ssc	-	We, CV	Riparian Scrub; Woodland and Forest; Water
Rana aurora draytonii[4]	California red-legged frog	T	ssc	-	We	Meadow and Marshes; Water
Rana muscosa[4,5]	Mountain yellow-legged frog	E	ssc	-	We	Water
Scaphiopus hammondii[4]	Western spadefoot toad	-	ssc	-	Wa	Playas and Vernal Pools; Riversidean Alluvial Fan Sage Scrub; Water; Alkali Playa
Taricha tarosa tarosa[4]	Coast range newt	-	ssc	-	Wa	Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Water
REPTILES						
Charina bottae umbratica[4]	Southern rubber boa	-	T	-	Wf	Chaparral; Grassland; Cismontane Alkali Marsh; Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest; Coniferous Woodland/ Forest; Meadow and Marshes
Clemmys marmorata pallida[4]	Southwestern pond turtle	-	ssc	-	Wa	Water; Meadow and Marshes; Riparian Scrub, Woodland and Forest
Cnemidophorus hyperythrus beldingi[4]	Belding's orange-throated whiptail	-	ssc	-	Wa	Chaparral
Cnemidophorus tigris multiscutatus[4]	Coastal western whiptail	-	ssc	-	Wa	Coastal Sage Scrub; Playas and Vernal Pools; Woodland/Forest; Grassland; Montane Coniferous Forest; Riversidean Alluvial Fan Sage Scrub; Water
Coleonyx variegates abbottii[4]	San Diego banded gecko	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub
Crotalus rubber rubber[4]	Northern red diamond rattlesnake	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub
Gopherus agassizii[4,5]	Desert tortoise	T	T	-	CV	Sand Dune/Sand Fields; Desert Scrub; Riparian; Mojavean and Sonoran Desert Scrub
Lampropeltis zonata parvirubra[4]	San Bernardino Mnt. kingsnake	fss	ssc	-	Wf	Cismontane Alkali Marsh; Montane Coniferous Forest; Coniferous Woodland/Forest; Riparian Scrub, Woodland and Forest
Lampropeltis zonata pulchra[4]	San Diego Mnt. kingsnake	fss	ssc	-	Wf	Cismontane Alkali Marsh; Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Coniferous Woodland/Forest
Phrynosoma coronatum blainvillei[4]	San Diego horned lizard	-	ssc	-	Wa	Chaparral; Desert Scrub; Mojavean and Sonoran Desert Scrub; Grassland
Phrynosoma mcallii[4]	Flat-tailed horned lizard	-	ssc	-	CV	Sand Dune/Sand Fields; Desert Dune
Sceloporus graciosus vandenburgianus[4]	Southern sagebrush lizard	-	ssc	-	Wf	Chaparral; Desert Scrub; Woodland/Forest; Montane Coniferous Forest
Sceloporus orcuttii[4]	Granite spiny lizard	-	-	-	Wa	Chaparral; Woodland/Forest; Montane Coniferous Forest
Uma inornata[4,5]	Coachella Valley fringe-toed lizard	T	E	-	CV	Sand Dune/Sand Fields; Sand Dune
Xantusia henshawi henshawi[4]	Granite night lizard	-	ssc	-	Wa	Chaparral; Woodland/Forest; Coastal Sage Scrub; Montane Coniferous Forest

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
BIRDS						
Accipiter cooperii[4]	Cooper's hawk	-	ssc	-	Wa	Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest; Coniferous Woodland/Forest
Accipiter gentilis[4]	Northern goshawk	fss, smc	ssc	-	Wa	Montane Coniferous Forest; Riparian Scrub; Woodland and Forest
Accipiter striatus[4]	Sharp-shinned hawk	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub; Desert Scrub; Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Agelaius tricolor[4]	Tricolored blackbird (colony)	-	ssc	-	Wa	Agriculture; Grasslands; Meadow and Marshes; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest
Aimophila ruficeps canescens[4]	Southern California rufous-crowned sparrow	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub; Grasslands
Ammodramus savannarum[4]	Grasshopper sparrow	smc	ssc	-	We	Grassland
Amphispiza bellii bellii[4]	Bell's sage sparrow	smc	ssc	-	Wa	Chaparral; Coastal Sage Scrub
Aquila chryseatos[4]	Golden eagle	FP	Ssc, FP	-	Wa	Agriculture; Coastal Sage Scrub; Desert Scrub; Grassland; Montane Coniferous Forest; Playas and Vernal Pools; Riversidean Alluvial Fan Sage Scrub; Woodland/ Forest; Coniferous Forest; Mojavean and Sonoran Desert Scrub
Ardea herodia[4]	Great blue heron	-	-	-	Wa	Playas and Vernal Pools; Water
Athene cunicularia hypugea[4]	Burrowing owl	smc	ssc	-	We, CV	Agriculture; Developed/Disturbed; Grassland; Desert Scrub; Mojavean and Sonoran Desert Scrub; Urban/Disturbed; Developed Areas
Botaurus lentiginosus[4]	American bittern	smc	-	-	Wa	Meadow and Marshes; Water
Buteo regalis[4]	Ferruginous hawk	smc	ssc	-	Wa	Coastal Sage Scrub; Desert Scrub; Grasslands; Meadow and Marshes; Montane Coniferous Forest; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodlands/Forest; Mojavean and Sonoran Desert Scrub; Coniferous Woodland/ Forest
Buteo swainsoni[4]	Swainson's hawk	-	T	-	Wa	Agriculture; Desert Scrub; Grassland; Cismontane Alkali Marsh; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riverside Alluvial Fan Sage Scrub; Woodland/Forest; Desert Dune; Coastal Sage Scrub; Mojave and Sonora Des. Scrub; Riparian and Bottomland
Campylorhynchus brunneicapillus[4]	Cactus wren	-	ssc	-	Wa	Coastal Sage Scrub; Desert Scrub; Riversidean Alluvial Fan Sage Scrub; Mojavean and Sonoran Desert Scrub
Cathartes aura[4]	Turkey vulture (breeding)	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Desert Scrub; Grassland; Montane Conif. Forest; Playas and Vernal Pools; Riversidean Alluvial Fan Sage Scrub; Woodland/ Forest
Charadrius montanus[4]	Mountain plover	PT	ssc	-	Wa	Agriculture; Developed/Disturbed; Playas and Vernal Pools; Grassland; Developed Areas; Urban and Disturbed
Circus cyaneus[4]	Northern harrier (breeding)	-	ssc	-	Wa	Grassland; Meadow and Marshes; Cismontane Alkali Marsh; Playas and Vernal Pools

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
Coccyzus americanus occidentalis[4]	Western yellow-billed cuckoo	-	E	-	We	Riparian Scrub, Woodland and Forest; Riparian
Cypseloides niger[4]	Black swift (breeding)	smc	ssc	-	Wa	Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest; Coniferous Woodland/Forest
Dendroica petechia brewsteri[4]	Yellow warbler	-	ssc	-	Wa, CV	Riparian Scrub, Woodland and Forest; Woodland/ Forest; Coniferous Woodland/Forest
Elanus leucurus[4]	White-tailed kite	smc	FP	-	Wa	Agriculture; Chaparral; Coastal Sage Scrub; Grassland; Cismontane Alkali Marsh; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Empidonax traillii extimus[4,5]	Southwestern willow flycatcher	E	E	-	We, CV	Riparian Scrub, Woodland and Forest; Riparian
Eremophila alpestris actia[4]	California horned lark	-	ssc	-	Wa	Agriculture; Coastal Sage Scrub; Water; Grassland; Meadow and Marshes; Playas and Vernal Pools; Riversidean Alluvial Fan Sage Scrub
Falco columbarius[4]	Merlin	-	ssc	-	Wa	Agriculture; Coastal Sage Scrub; Desert Scrub; Grassland; Meadow and Marshes; Cismontane Alkali Marsh; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodlands/Forest; Mojavean and Sonoran Desert Scrub
Falco mexicanus[4]	Prairie falcon (breeding)	-	ssc	-	Wa	Coastal Sage Scrub; Desert Scrub; Grassland; Playas and Vernal Pools; Riversidean Alluvial Fan Sage Scrub; Mojavean and Sonoran Desert Scrub
Falco peregrinus[4]	Peregrine falcon	smc	E, FP	-	Wa	Riparian Scrub, Woodland and Forest; Water; Meadow and Marshes; Marsh; Riparian
Haliaeetus leucocephalus[4]	Bald eagle	T	E	-	Wa	Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Water; Woodland and Forest; Coniferous Woodland/Forest
Icteria virens[4]	Yellow-breasted chat	-	ssc	-	Wa, CV	Riparian Scrub, Woodland and Forest; Riparian and Bottomland
Lanius ludovicianus[4]	Loggerhead shrike	smc	ssc	-	Wa	Agriculture; Chaparral; Desert Scrub; Grassland; Riparian Scrub, Woodland and Forest; Woodland/ Forest
Laterallus jamaicensis[4]	California black rail	-	T	-	CV	Cismontane Alkali Marsh; Water; Marsh
Melospiza lincolnii[4]	Lincoln's sparrow (breeding)	-	-	-	We	Meadow and Marshes; Riparian Scrub, Woodland and Forest
Nycticorax nycticorax[4]	Black-crowned night heron	-	-	-	Wa	Playas and Vernal Pools; Water
Oporornis tolmiei[4]	Macgillvray's warbler	-	-	-	Wa	Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest; Desert Scrub
Oreortyx pictus[4]	Mountain quail	-	-	-	Wa	Chaparral; Montane Coniferous Forest; Riparian Scrub, Woodland and Forest
Pandion haliaetus[4]	Osprey	-	ssc	-	Wa	Water
Phalacrocorax auritus[4]	Double-crested cormorant	-	ssc	-	Wa	Water
Picoides pubescens[4]	Downey woodpecker	-	-	-	Wa	Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest
Piranga rubra[4]	Summer tanager	-	ssc	-	CV	Riparian

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
Plegadis chihi[4]	White-faced ibis	smc	ssc	-	Wa	Agriculture; Grassland; Meadow and Marsh; Cismontane Alkali Marsh; Riparian Scrub, Woodland and Forest
Polioptila californica californica[4,5]	Coastal California gnatcatcher	T	ssc	-	Wa	Chaparral; Coastal Sage Scrub; Grassland
Progne subis[4]	Purple martin	-	ssc	-	Wa	Riparian Scrub, Woodland and Forest; Wood-land/Forest; Montane Coniferous Forest
Rallus longirostris ymanensis[4]	Yuma clapper rail	E	T, FP	-	CV	Cismontane Alkali Marsh; Marsh; Riparian; Water
Sphyrapicus thyroideus[4]	Williamson's sapsucker	-	-	-	Wa	Montane Coniferous Forest; Woodland/Forest
Strix occidentalis occidentalis[4]	California spotted owl	fss, smc	ssc	-	Wf	Montane Conif. Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest; Conif. Woodland/ Forest
Tachycineta bicolor[4]	Tree swallow	-	-	-	Wa	Riparian Scrub, Woodland and Forest; Water; Woodland/Forest
Toxostoma crissal[4]	Crissal thrasher	-	ssc	-	CV	Riparian
Toxostoma lecontei	Le Conte's thrasher	-	ssc	-	CV	Mojavean and Sonoran Desert Scrub;
Vermivora ruficapilla[4]	Nashville warbler	-	-	-	Wa	Chaparral; Montane Coniferous Forest; Riparian Scrub, Woodland and Forest; Woodland/Forest
Vireo bellii pusillus[4,5]	Least Bell's vireo	E, smc	E	-	We, CV	Water; Woodland/Forest; Riparian Scrub, Woodland and Forest
Vireo vicinior[4]	Gray vireo	-	ssc	-	CV	Chaparral; Woodland and Forest; Desert Scrub; Coniferous Woodland/Forest; Mojave and Sonora Desert Scrub
Wilsonia pusilla[4]	Wilson's warbler	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Des. Scrub; Meadow and Marsh; Riparian Scrub, Woodland and Forest; Riverside Alluvial Fan Sage Scrub; Woodland/Forest; Grassland
MAMMALS						
Canis latrans[4]	Coyote	-	-	-	Wa	Agriculture; Chaparral; Coastal Sage Scrub; Desert Scrub; Developed/Disturbed; Grassland; Meadow and Marshes; Cismontane Alkali Marsh; Montane Coniferous Forest; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Chaetodipus fallax fallax[4]	Northwestern San Diego pocket mouse	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub; Desert Scrub; Grassland; Mojavean and Sonoran Desert Scrub
Dipodomys merriami collinus[4]	Aguanga kangaroo rat	-	-	-	We	Chaparral; Coastal Sage Scrub; Desert Scrub; Grassland; Riversidean Alluvial Fan Sage Scrub
Dipodomys merriami parvus[4,5]	San Bernardino kangaroo rat	E	ssc	-	We	Chaparral; Coastal Sage Scrub; Grassland; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub
Dipodomys simulans[4]	Dulzura kangaroo rat	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Desert Scrub; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Dipodomys stephensi[4]	Stephens' kangaroo rat	E	T	-	Wa	Coastal Sage Scrub; Grassland
Glaucomys sabrinus californicus[4]	San Bernardino flying squirrel	fss	ssc	-	We	Montane Coniferous Forest; Coniferous Woodland/Forest
Lasiurus ega (or xanthinus)[4]	Southern yellow bat	-	ssc	-	CV	Marsh; Water

Species Scientific Name	Common Name	Protection Status				Natural Community Association
		Federal[1]	State[2]	CNPS[3]	MSHCP[4]	
Lepus californicus bennettii[4]	San Diego black-tailed jackrabbit	-	ssc	-	Wa	Coastal Sage Scrub; Desert Scrub; Grassland; Playas, Vernal Pools; Riversidean Alluvial Fan Sage Scrub; Woodland/ Forest; Mojavean and Sonoran Desert Scrub; Alkali Playa
Lynx rufus[4]	Bobcat	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Des. Scrub; Grassland; Meadow and Marshes; Montane Conif. Forest; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riverside Alluvial Fan Sage Scrub; Woodland/Forest
Mustela frenata[4]	Long-tailed weasel	-	-	-	Wa	Agriculture; Chaparral; Coastal Sage Scrub; Grassland; Meadow and Marshes; Cismontane Alkali Marsh; Montane Coniferous Forest; Playas and Vernal Pools; Riparian Scrub, Woodland and Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Neotoma lepida intermedia[4]	San Diego desert woodrat	-	ssc	-	Wa	Chaparral; Coastal Sage Scrub; Desert Scrub; Riversidean Alluvial Fan Sage Scrub; Woodland/ Forest; Mojavean and Sonoran Desert Scrub
Ovis canadensis nelsoni[4,5]	Peninsular bighorn sheep	E	T	-	CV	Riparian; Urban and Disturbed; Desert Scrub; Developed Areas; Mojavean and Sonoran Desert Scrub
Perognathus longimembris bangsi[4]	Palm Springs pocket mouse	-	ssc	-	CV	Sand Dunes/Sand Fields; Desert Scrub; Desert Dune; Mojavean and Sonoran Desert Scrub
Perognathus longimembris brevinasus[4]	Los Angeles pocket mouse	fss	ssc	-	We	Chaparral; Coastal Sage Scrub; Desert Scrub; Grassland; Playas and Vernal Pools; Alkali Playa; Riversidean Alluvial Fan Sage Scrub; Mojave and Sonoran Des. Scrub
Puma concolor[4]	Mountain lion	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Des. Scrub; Montane Coniferous Forest; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest
Spermophilus tereticaudus chlorus[4]	Coachella Valley round-tailed ground squirrel	-	ssc	-	CV	Desert Scrub; Dry Wash Woodland and Mesquite; Desert Dune; Mojavean and Sonoran Desert Scrub; Riparian and Bottomland; Sand Dune/Sand Fields
Sylvilagus bachmani[4]	Brush rabbit	-	-	-	Wa	Chaparral; Coastal Sage Scrub; Riversidean Alluvial Fan Sage Scrub; Woodland/Forest

Footnotes:

1. Federal Listings:
   FESA: E = Endangered; T = Threatened; C = Candidate; FP= Fully Protected; fss = Forest Service sensitive (species considered sensitive by the USDA Forest Service because of declining populations); smc = Species of management concern (non-game migratory bird species of concern identified by the USFWS due to documented or apparent decline, small or restricted populations, or dependence on restricted or vulnerable habitats).
2. State Listings:
   CESA: E = Endangered; T = Threatened; C = Candidate; FP= Fully Protected; R = Rare; ssc = species of special concern (species considered by the CDFW as possibly facing extirpation in California due to declining populations or loss of habitat).
3. California Native Plant Society (CNPS) as accepted by the CDFW. Plant species categories by CNPS according to the following criteria:
   - 1A Presumed extinct in California (for the purposes of this table, these were not included)
   - 1B.1 Rare, threatened or endangered in California and elsewhere; seriously threatened in California
   - 1B.2 Rare, threatened or endangered in California and elsewhere; fairly threatened in California
   - 1B.3 Rare, threatened or endangered in California and elsewhere; not very threatened in California
   - 2.1 Rare, threatened or endangered in California, but more common elsewhere; seriously threatened in California
   - 2.2 Rare, threatened or endangered in California, but more common elsewhere; fairly threatened in California
   - 2.3 Rare, threatened or endangered in California, but more common elsewhere; not very threatened in California
   - 3.1 Plants about which we need more information; seriously threatened in California
   - 3.2 Plants about which we need more information; fairly threatened in California
   - 3.3 Plants about which we need more information; not very threatened in California
   - 4.1 Plants of limited distribution; seriously threatened in California

4.2 Plants of limited distribution; fairly threatened in California
4.3 Plants of limited distribution; not very threatened in California (not included for the purposes of this table)

4. Covered by WRC-MSHCP: Wa = Among the 118 'adequately covered' species addressed in WRC-MSHCP; We and Wf = Among the 28 additional species covered under WRC-MSHCP but subject to additional conservation objectives in order to be deemed covered (e = species subject to additional MSHCP conditions; f = species subject US Forest Svc. MOU).
Covered by CV-MSHCP: CV = Among the 27 species covered under the CV-MSHCP.

5. Species for which critical habitat has been designated by the USFWS.

Sources: Riverside County, WRC-MSHCP, 2003. CVAG, CV-MSHCP, Sept. 2007. CDFG, NDDB, accessed March 15, 2012. California Native Plant Society, CNPS Database, accessed March 19, 2012. USFWS, Critical Habitat Portal, accessed April 30, 2012.

Table 4.8-E: Additional Candidate, Sensitive & Special Status Species Potentially in Riverside County

Scientific Name	Common Name	Federal[1]	State[2]	CNPS[3]
PLANTS				
Abronia villosa var. *aurita*	Chaparral sand-verbena	-	-	1B.1
Acleisanthes longiflora	Angel trumpets	-	-	2.3
Acmispon haydonii	Pygmy lotus	-	-	1B.3
Ambrosia monogyra	Singlewhorl burrobrush	-	-	2.2
Ammoselinum giganteum	Desert sand-parsley	-	-	2.3
Androsace elongata ssp. *acuta*	California androsace	-	-	4.2
Androstephium breviflorum	Small-flowered androstephium	-	-	2.2
Antirrhinum cyathiferum	Deep Canyon snapdragon	-	-	2.3
Asplenium vespertinum	Western spleenwort	-	-	4.2
Astragalus bernardinus	San Bernardino milk-vetch	-	-	1B.2
Astragalus brauntonii	Braunton's milk-vetch	E	-	1B.1
Astragalus insularis var. *harwoodii*	Harwood's milk-vetch	-	-	2.2
Astragalus leucolobus	Big Bear Valley woollypod	-	-	1B.2
Astragalus preussii var. *laxiflorus*	Lancaster milk-vetch	-	-	1B.1
Astragalus sabulonum	Gravel milk-vetch	-	-	2.2
Atriplex pacifica	South Coast saltscale	-	-	1B.2
Ayenia compacta	California ayenia	-	-	2.3
Bloomeria clevelandii	San Diego goldenstar	-	-	1B.1
Boechera johnstonii	Johnston's rock cress	-	-	1B.2
Brodiaea santarosae	Santa Rosa Basalt brodiaea	-	-	3
Bursera microphylla	Little-leaf elephant tree	-	-	2.3
Calandrinia breweri	Brewer's calandrinia	-	-	4.2
California macrophylla	Round-leaved filaree	-	-	1B.1
Calliandra eriophylla	Pink fairy-duster	-	-	2.3
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	-	-	1B.2
Camissonia arenaria	Sand evening-primrose	-	-	2.2
Camissonia boothii ssp. *Boothii*	Booth's evening-primrose	-	-	2.3
Carex occidentalis	Western sedge	-	-	2.3
Castela emoryi	Emory's crucifixion-thorn	-	-	2.3
Castilleja lasiorhyncha	San Bernardino Mountains owl's clover	-	-	1B.2
Ceanothus cyaneus	Lakeside ceanothus	-	-	1B.2
Ceanothus verrucosus	Wart-stemmed ceanothus	-	-	2.2
Chaenactis carphoclinia var. *peirsonii*	Peirson's pincushion	-	-	1B.3
Chaenactis parishii	Parish's chaenactis	-	-	1B.3
Chamaesyce abramsiana	Abrams' spurge	-	-	2.2
Chamaesyce arizonica	Arizona spurge	-	-	2.3
Chamaesyce platysperma	Flat-seeded spurge	-	-	1B.2
Chorizanthe xanti var. *leucotheca*	White-bracted spineflower	-	-	1B.2
Cladium californicum	California sawgrass	-	-	2.2
Colubrina californica	Las Animas colubrina	-	-	2.3
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	-	-	1B.2
Condalia globosa var. *pubescens*	Spiny abrojo	-	-	4.2
Cuscuta californica var. *apiculata*	Pointed dodder	-	-	3
Cylindropuntia munzii	Munz's cholla	-	-	1B.3

Scientific Name	Common Name	Federal[1]	State[2]	CNPS[3]
Deinandra paniculata	Paniculate tarplant	-	-	4.2
Delphinium hesperium ssp. *cuyamacae*	Cuyamaca larkspur	-	R	1B.2
Dieteria canescens var. *ziegleri*	Ziegler's aster	-	-	1B.2
Ditaxis claryana	Glandular ditaxis	-	-	2.2
Ditaxis serrata var. *californica*	California ditaxis	-	-	3.2
Draba saxosa	Southern California rock draba	-	-	1B.3
Eriastrum harwoodii	Harwood's eriastrum	-	-	1B.2
Erigeron parishii	Parish's daisy	T	-	1B.1
Eriogonum evanidum	Vanishing wild buckwheat	-	-	1B.1
Euphorbia misera	Cliff spurge	-	-	2.2
Funastrum utahense	Utah vine milkweed	-	-	4.2
Galium angustifolium ssp. *gracillimum*	slender bedstraw	-	-	4.2
Geothallus tuberosus	Campbell's liverwort	-	-	1B.1
Githopsis diffusa ssp. *Filicaulis*	Mission Canyon bluecup	-	-	3.1
Grusonia parishii	Parish's club-cholla	-	-	2.2
Hesperocyparis forbesii	Tecate cypress	-	-	1B.1
Heuchera parishii	Parish's alumroot	-	-	1B.3
Horkelia cuneata ssp. *puberula*	Mesa horkelia	-	-	1B.1
Hulsea californica	San Diego sunflower	-	-	1B.3
Hymenoxys odorata	Bitter hymenoxys	-	-	2
Imperata brevifolia	California satintail	-	-	2.1
Ivesia callida	Tahquitz ivesia	-	R	1B.3
Juncus luciensis	Santa Lucia dwarf rush	-	-	1B.2
Koeberlinia spinosa ssp. *tenuispina*	Slender-spined all thorn	-	-	2.2
Lepidium virgicum var. *robinsonii*	Robinson's pepper-grass	-	-	1B.2
Leptosiphon floribundus ssp. *hallii*	Santa Rosa Mountains leptosiphon	-	-	1B.3
Linanthus jaegeri	San Jacinto linanthus	-	-	1B.2
Linanthus orcuttii	Orcutt's linanthus	-	-	1B.3
Lycium parishii	Parish's desert-thorn	-	-	2.3
Malaxis monophyllos ssp. *brachypoda*	White bog adder's-mouth	-	-	2.1
Marina orcuttii var. *orcuttii*	California marina	-	-	1B.3
Matelea parvifolia	Spearleaf	-	-	2.3
Meesia triquetra	Three-ranked hump moss	-	-	4.2
Meesia uliginosa	Broad-nerved hump moss	-	-	2.2
Mentzelia puberula	Darlington's blazing star	-	-	2.2
Mentzelia tricuspis	Spiny-hair blazing star	-	-	2.1
Mentzelia tridentate	Creamy blazing star	-	-	1B.3
Micromonolepis pusilla	Dwarf monolepis	-	-	2.3
Mimulus purpureus	Little purple monkeyflower	-	-	1B.2
Monardella nana ssp. *leptosiphon*	San Felipe monardella	-	-	1B.2
Monardella pringlei	Pringle's monardella	-	-	1A
Monardella robisonii	Robison's monardella	-	-	1B.3
Mucronea californica	California spineflower	-	-	4.2
Nemacaulis denudata var. *gracilis*	Slender cottonheads	-	-	2.2
Nolina cismontane	Chaparral nolina	-	-	1B.2
Packera gander	Gander's ragwort	-	R	1B.2
Parnassia cirrata var. *cirrata*	San Bernardino grass-of-Parnassus	-	-	1B.3
Penstemon thurberi	Thurber's beardtongue	-	-	4.2
Pentachaeta aurea ssp. *Aurea*	Golden-rayed pentachaeta	-	-	4.2
Phacelia keckii	Santiago Peak phacelia	-	-	1B.3
Phaseolus filiformis	Slender-stem bean	-	-	2.1
Piperia cooperi	Chaparral rein orchid	-	-	4.2
Polygala acanthoclada	Thorny milkwort	-	-	2.3
Portulaca halimoides	Desert portulaca	-	-	4.2
Pseudognaphalium leucocephalum	White rabbit-tobacco	-	-	2.2

Scientific Name	Common Name	Federal[1]	State[2]	CNPS[3]
Saltugilia latimeri	Latimer's woodland-gilia	-	-	1B.2
Schizymenium shevockii	Shevock's copper moss	-	-	1B.2
Scutellaria bolanderi ssp. *austromontana*	Southern skullcap	-	-	1B.2
Sedum niveum	Davidson's stonecrop	-	-	4.2
Selaginella asprella	Bluish spike-moss	-	-	4.3
Selaginella cinerascens	Ashy spike-moss	-	-	4.1
Selaginella eremophila	Desert spike-moss	-	-	2.2
Senecio aphanactis	Chaparral ragwort	-	-	2.2
Senna covesii	Coves' cassia	-	-	2.2
Sidalcea neomexicana	Salt spring checkerbloom	-	-	2.2
Sidotheca emarginata	White-margined oxytheca	-	-	1B.3
Sphaerocarpos drewei	Bottle liverwort	-	-	1B.1
Sphenopholis obtusata	Prairie wedge grass	-	-	2.2
Stemodia durantifolia	Purple stemodia	-	-	2.1
Strephtanthus campestris	Southern jewel-flower	-	-	1B.3
Stylocline sonorensis	Mesquite neststraw	-	-	1A
Symphyotrichum defoliatum	San Bernardino aster	-	-	1B.2
Tetracoccus dioicus	Parry's tetracoccus	-	-	1B.2
Teucrium cubense ssp. *depressum*	Dwarf germander	-	-	2.2
Thelypteris puberula var. *sonorensis*	Sonoran maiden form	-	-	2.2
Thysanocarpus rigidus	Rigid fringepod	-	-	1B.2
Tortula californica	California screw-moss	-	-	1B.2
Trichostema austromontanum ssp. *Compactum*	Hidden Lake bluecurls	T	-	1B.1
Wislizenia refracta ssp. *palmeri*	Palmer's jackass clover	-	-	2.2
Wislizenia refracta ssp. *refracta*	Jackass-clover	-	-	2.2
INVERTEBRATES				
Dinacoma caseyi[5]	Casey's June beetle	PE	-	-
FISH				
Oncorhynchus mykiss irideus	Coast rainbow trout	E	ssc	-
Xyrauchen texanus[5]	Razorback sucker	E,FP	E	-
Rhinichthys osculus	Santa Ana speckled dace	fss	ssc	-
AMPHIBIANS				
Ambystoma californiense	California tiger salamander	T	T,ssc	-
Batrachoseps major aridus	Desert slender salamander	E	E	-
Ensatina escholtzii klauberi	Large-blotched salamander	fss	ssc	-
Lithobates pipiens	Northern leopard frog		ssc	-
Lithobates yavapaiensis	Lowland leopard frog	-	ssc	-
Scaphiopus couchii	Couch's spadefoot	-	ssc	-
REPTILES				
Anniella pulchra pulchra	Silvery legless lizard	-	ssc	-
Aspidoscelis hyperythra	Orangethroat whiptail	-	ssc	-
Charina umbratica	Southern rubber boa	-	T	-
Diadophis punctatus	Ringneck snake	fss	-	-
Heloderma suspectum cinctum	Banded gila monster	-	ssc	-
Phrynosoma blainvillii	Coast horned lizard	-	ssc	-
Plestiodon skiltonianus interparietalis	Coronado Island skink	-	ssc	-
Salvadora hexalepis virgultea	Coast patch-nosed snake	-	ssc	-
Thamnophis hammondii	Two-striped garter snake	fss	ssc	-
Uma scoparia	Mojave fringe-toed lizard	-	ssc	-
BIRDS				
Asio (Speotyto) otus	Long-eared owl	-	ssc	-
Asio flammeus	Short-eared owl	smc	ssc	-
Chaetura vauxi	Vaux's swift	smc	ssc	-
Charadrius alexandrinus nivosus	Western snowy plover (coastal pop.)	T, smc	ssc	-
Colaptes chrysoides	Gilded flicker	-	E	-

Scientific Name	Common Name	Federal[1]	State[2]	CNPS[3]
Dendroica petechia sonorana	Sonoran yellow warbler	-	ssc	-
Gelochelidon nilotica	Gull-billed tern	-	ssc	-
Ixobrychus exilis hesperis	Western least bittern	smc	ssc	-
Melanerpes uropygialis	Gila woodpecker	-	E	-
Micrathene whitneyi	Elf owl	-	E	-
Pyrocephalus rubinus	Vermilion flycatcher	-	ssc	-
Rynchops niger	Black skimmer	-	ssc	-
Toxostoma bendirei	Bendire's thrasher	-	ssc	-
MAMMALS				
Antrozous pallidus	Pallid bat	fss	ssc	-
Chaeotodipus californicus femoralis	Dulzura Calif. pocket mouse	-	ssc	-
Chaetodipus fallax pallidus	Pallid San Diego pocket mouse	-	ssc	-
Choeronyeteris mexicana	Mexican long-tongued bat	-	ssc	-
Corynorhinus townsendii	Townsend's big-eared bat	-	ssc	-
Euderma maculatum	Spotted bat	-	ssc	-
Eumops perotis californicus	California mastiff bat	-	ssc	-
Lepus californicus bennettii	San Diego black-tailed jackrabbit	-	ssc	-
Macrotus californicus	California leaf-nosed bat	fss	ssc	
Myotis occultus	Arizona Myotis	-	ssc	-
Myotis velifer	Cave myotis	-	ssc	-
Nyctinimops femorasaccus	Pocketed free-tailed bat	-	ssc	-
Nyctinimops macrotis	Big free-tailed bat	-	ssc	-
Onychomys torridus ramona	Southern grasshopper mouse	-	ssc	-
Perognathus longimembris internationalis	Jacumba pocket mouse	-	ssc	-
Pleocotus (Corynorhinus) townsendii pallescens	Pale big-eared bat	fss	ssc	-
Pleocotus (Corynorhinus) townsendii townsendii	Western big-eared bat	fss	ssc	-
Sigmodon arizonae plenus	Colorado River cotton rat	-	ssc	-
Xerospermophilus tereticaudus chlorus	Palm Springs round-tailed ground squirrel	-	ssc	-

Footnotes:

1. Federal Listings FESA: E = Endangered; T = Threatened; C = Candidate; FP= Fully Protected; fss = Forest Service sensitive (species considered sensitive by the USDA Forest Service because of declining populations); smc = Species of management concern (non-game migratory bird species of concern identified by the USFWS due to documented or apparent decline, small or restricted populations, or dependence on restricted or vulnerable habitats).
2. State Listings CESA: E = Endangered; T = Threatened; C = Candidate; R = Rare; ssc = species of special concern (species considered by the CDFW as possibly facing extirpation in California due to declining populations or loss of habitat).
3. California Native Plant Society (CNPS) as accepted by the CDFW: Plant species categories by CNPS according to the following criteria:
   - 1A Presumed extinct in California (for the purposes of this table, these were not included)
   - 1B.1 Rare, threatened or endangered in California and elsewhere; seriously threatened in California
   - 1B.2 Rare, threatened or endangered in California and elsewhere; fairly threatened in California
   - 1B.3 Rare, threatened or endangered in California and elsewhere; not very threatened in California
   - 2.1 Rare, threatened or endangered in California, but more common elsewhere; seriously threatened in California
   - 2.2 Rare, threatened or endangered in California, but more common elsewhere; fairly threatened in California
   - 2.3 Rare, threatened or endangered in California, but more common elsewhere; not very threatened in California
   - 3.1 Plants about which we need more information; seriously threatened in California
   - 3.2 Plants about which we need more information; fairly threatened in California
   - 3.3 Plants about which we need more information; not very threatened in California
   - 4.1 Plants of limited distribution; seriously threatened in California
   - 4.2 Plants of limited distribution; fairly threatened in California
   - 4.3 Plants of limited distribution; not very threatened in California (not included for the purposes of this table)
4. Covered by WRC-MSHCP: Wa = Among the 118 'adequately covered' species; We and Wf = Among the 28 additional species covered under the WRC-MSHCP but subject to additional conservation objectives to be deemed covered
   (e = species subject to additional MSHCP conditions; f = species subject US Forest Service MOU).
   Covered by CV-MSHCP: CV = Among the 27 species covered under the CV-MSHCP
5. Species for which critical habitat has been designated by the USFWS.

Sources: CDFG, NDDB, accessed on March 15, 2012. CNPS, Database, accessed March 19, 2012. Riverside County, WRC-MSHCP, 2003. CVAG, CV-MSHCP, 2007. USFWS, Critical Habitat Portal, accessed April 30, 2012.

4.8.3 Policies and Regulations Addressing Biological Resources

A. State and Federal Regulations

Federal Endangered Species Act (FESA)

FESA was promulgated to protect any species of plant or animal which is endangered or threatened with extinction. 'Take' of endangered species is prohibited under Section 9 of FESA. Take as defined under FESA [16 U.S. Code Section 1532(19)] means to "harass, harm, pursue, hunt, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." The U.S. Fish and Wildlife Service (USFWS) can issue a permit for incidental take of listed species as a result of otherwise lawful activities if that take is found not likely to jeopardize the continued existence of the species or modify the species' critical habitat. If take of a listed species is necessary to complete an otherwise lawful activity, a consultation and take authorization must be obtained pursuant to FESA Section 7 for federal agencies. For all others, a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA must be prepared and accepted by the USFWS.

Sections 7 and 10 of FESA include permitting processes that are used to determine if a project would jeopardize the continued existence of listed species and identify the mitigation measures necessary to avoid or minimize impacts to such species. Candidate species do not have the full protection of the FESA; however, since the USFWS advises applicants that candidate species could be elevated to listed species at any time, they are normally treated similarly under HCPs and Section 7 consultations. The following identifies the general steps required to apply for take of federally listed species:

- Qualified biologist performs a biological survey of a site to assess the likelihood of a protected species or their habitat occurring.
- If deemed suitable, a survey for the listed species is performed according to USFWS published survey protocols. Where no such USFWS protocol exists, the scientifically accepted protocol is used.
- If the species is detected, a Section 7 or Section 10 incidental take permit must be obtained from the USFWS.
- Pursuant to both Section 7 and Section 10 of FESA, application for an incidental take permit is subject to certain requirements, including the permit applicant preparing a conservation plan, generally known as a 'habitat conservation plan' (HCP).
- A take permit is issued if the Biological Opinion issued by the USFWS finds that the requested take would not jeopardize the continued existence of listed species or result in the destruction or adverse modification of its critical habitat (for Section 7) or that the statutory criteria for an incidental take permit have been met for Section 10.

The two MSHCPs address species take issues on a regional basis for western Riverside County and the Coachella Valley. The WRC-MSHCP provides for the take and mitigation of 146 species and the habitat on which they depend. Similarly, the CV-MSHCP provides for the take and mitigation of 27 species and their habitats. Both MSHCPs were issued Section 10 permits for the incidental take of covered species. As such, the plans allow for the issuance of take at the local level by MSHCP permitees, including the County of Riverside.

Clean Water Act, Section 401

In California, the Regional Water Quality Control Boards (RWQCBs) are responsible for the administration of Section 401 of the Clean Water Act. Riverside County falls within the jurisdiction of three RWQCBs: Santa Ana River Region, San Diego Region and the Colorado River Region. The areas subject to jurisdiction of the RWQCBs include those of the Corps (i.e., waters of the United States) but also include 'Waters of the State' as well. The RWQCBs ensure that the quality of downstream areas ('receiving waters') is not degraded. See Section 4.19, Water Resources, for more on water quality and the RWQCBs.

Clean Water Act, Section 404

The U.S. Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the U.S. (see Section 4.19, Water Resources, for additional information). These waters include wetlands and non-wetland bodies of water that meet specific criteria. Corps regulatory jurisdiction pursuant to Section 404 of the Federal Clean Water Act is founded on a connection or nexus between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations. The following definition of waters of the U.S. is taken from 33 Code of Federal Regulations (CFR) Section 328.3:

The term 'waters of the U.S.' means:

a. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce;

b. All interstate waters including interstate wetlands;

c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), the use, degradation or destruction of which could affect interstate or foreign commerce;

d. All impoundments of waters otherwise defined as waters of the U.S. under the definition; and

e. Tributaries of waters defined in paragraphs (a) (1)-(4) of this section.

The Corps typically regulates as waters of the U.S. any body of water displaying an ordinary high water mark (OHWM). Corps jurisdiction over non-tidal waters of the U.S. extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present. The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area." Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

Executive Order 11990, Protection of Wetlands

This Executive Order from May 1977 establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be

included. This must be documented in a specific 'Wetlands Only Practicable Alternative Finding' in the final environmental document for the proposed project.

Migratory Bird Treaty Act (16 USC Section 703-711)

Disturbing or destroying active nests of any native bird is a violation of the federal Migratory Bird Treaty Act (MBTA) of 1918. Nests and eggs are also protected under Section 3503 of the California Fish and Game Code. As a result, special precautions must be taken to avoid disturbances to birds during their breeding seasons (most commonly between February and June). The MBTA, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter, any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (under 50 CFR 21). The WRC-MSHCP and CV-MSHCP take permits constitute 'special purpose permits' pursuant to the MBTA. Specifically, the biological opinion for the WRC-MSHCP stipulates that covered activities must comply with the MBTA and that clearing of habitat would be avoided during the active breeding season within the plan's Criteria Areas and on public/ quasi-public lands.

The Biological Opinion issued for the CV-MSHCP also states that take of covered species listed under FESA which are also MBTA species is subject to the terms and conditions specified in the CV-MSHCP Section 10 permit. If compliant, such take is deemed to not violate the MBTA. For other birds protected by the MBTA and not listed under FESA, no take is authorized (including killing and wounding of any such birds, or take of eggs and active nests). Thus, standard MBTA compliance measures would still be required.

Federal Bald and Golden Eagle Protection Act (16 U.S.C. 668(a); 50 CFR 22)

This act was originally passed in 1940 and provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest or egg, unless allowed by permit. 'Take' includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The 1972 amendments increased civil penalties for violating provisions of the Act to a maximum fine of $5,000 or one year imprisonment with $10,000 or not more than two years in prison for a second conviction. Felony convictions carry a maximum fine of $250,000 or two years of imprisonment. The fine doubles for an organization.

California Endangered Species Act (CESA)

The CESA is similar to FESA in that its intent is to protect species of fish, wildlife and plants that are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification or severe curtailment, or because of overexploitation, disease, predation or other factors. CESA establishes California State policy to conserve, protect, restore and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy.

The threshold for take under the FESA is lower than that under CESA. 'Take' as defined under CESA means hunt, pursue, capture or kill, or attempt to do so. Under certain conditions, CESA has provisions to authorize take pursuant to a California Fish and Game Code (CFGC) Section 2081 permit or Memorandum of Understanding (MOU). Impacts of authorized take must be minimized and fully mitigated. No permit may be

issued if it would jeopardize the continued existence of the species. The CDFW is the primary regulatory agency for enforcement of California State species protection laws in the state, including CESA.

CDFW may designate a species as a 'species of special concern' (SSC) prior to considering the species for protected status under CESA if the CDFW has information indicating that the species is declining. This status applies to animals that, while not listed under FESA or CESA, are declining at a rate that could result in listing or historically occur in low numbers and known threats to their persistence currently exist. While SSC species do not receive the same protections as listed species, their identification is intended to focus attention on the species to help avert the need for costly listing under FESA or CESA. SSC species are often considered during the environmental review process and are a component of both the WRC-MSHCP and CV-MSHCP. See Tables 4.8-D and 4.8-E for SSCs.

Natural Community Conservation Planning Act (NCCP)

The Natural Communities Conservation Planning (NCCP) program of CDFW is an unprecedented effort by the State of California and numerous private and public partners that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. An NCCP identifies and provides for the regional or area wide protection of plants, animals and their habitats, while allowing compatible and appropriate economic activity.

The NCCP program is a cooperative effort to protect habitats and species. It began in 1991 under the state's NCCP Act, legislation broader in its orientation and objectives than the California and federal Endangered Species Acts. CESA and FESA were designed to identify and protect individual species that were already significantly declining in number. The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use.

The NCCP program seeks to anticipate and prevent the controversies and gridlock caused by species' listings through focusing on the long-term stability of wildlife and plant communities and including key interests in the process. Working with landowners, environmental organizations and other interested parties, a local agency oversees the numerous activities that compose the development of a conservation plan. CDFW and USFWS provide the necessary support, direction and guidance to NCCP participants.

Both the WRC-MSHCP and CV-MSHCP are NCCPs. As such, they were prepared to provide for the conservation of species and the natural communities on which they depend. The WRC-MSHCP and CV-MSHCP allow for the issuance of take at the local level by permittees such as the County of Riverside, thereby streamlining the take authorization process on a project-by-project basis.

California Fish and Game Code, Section 1600, et seq.

The CDFW, through provisions of the California Fish and Game Code (e.g., Section 1603), is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFW regulates wetland areas only to the extent that those wetlands are a part of a river, stream or lake as meeting the CDFW definition. While seasonal ponds are within the CDFW definition of wetlands, they are not part of a river, stream or lake and are not subject to jurisdiction of CDFW under Section 1603.

Native Plant Protection Act (NPPA) of 1977

The NPPA (e.g., CFGC Sections 1900-1913) directs CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." NPPA gives the California Fish and Game Commission the power to designate native plants as endangered or rare, since CESA does not explicitly cover rare plants. Accordingly, the CDFW's Wildlife and habitat Data Analysis Branch maintains a 'special plants' list of approximately 2,000 native plant species, subspecies or varieties that are tracked by the NDDB. The NPPA prohibits the taking of listed plants from the wild and requires notification of the CDFW at least 10 days in advance of any change in land use which would adversely impact listed plants. This requirement allows CDFW to salvage plants that would otherwise be destroyed. CDFW's Wildlife and Habitat Data Analysis Branch maintains a 'special plants' list consisting of approximately 2,000 native plant species, subspecies or varieties that are tracked by the CNDDB.

The California Native Plant Society (CNPS) publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California. The inventory assigns a ranking status (see footnotes to Table 4.8-D). Plants on the 1A, 1B and 2 lists of the CNPS Inventory consist of plants that may qualify for listing and CDFW recommends they be addressed under CEQA.

Oak Woodlands Conservation Act 1360 (CFGC, Section 1360-1372)

A program to encourage and make possible the long-term conservation of oak woodlands as a necessary part of California State's wildlands protection policies and programs, and it is appropriate to expend money for that purpose. The Act is intended to work in concert with local planning and zoning strategies to conserve oak woodlands. Jurisdictions may prepare an Oak Woodlands Management Plan and thereby qualify for State of California financial incentives to protect the oak resources described therein. Through this Act, it is the State of California's intent to support and encourage voluntary, long-term private stewardship and conservation of California's oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands over time and encourage local land use planning that is consistent with the preservation of oak woodlands, particularly special oak woodlands habitat elements. The Oak Woodlands Conservation Act also establishes a fund for oak woodlands conservation to which future appropriations for oak woodlands protection may be made.

Unlawful Take or Destruction of Nests or Eggs (CFGC Sections 3503.5-3513)

Section 3503.5 of the California Fish and Game Code specifically protects birds of prey, stating:

> *It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

Section 3513 of the CFGC duplicates the federal protection of migratory birds, stating:

> *It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act.*

B. Regional Plans and Programs

When the County of Riverside developed both MSHCP's, comprehensive data was *collected under the purview of a scientific committee. The final conservation strategy in the MSHCPs was developed to fully mitigate impacts to sensitive biological resources. The issuance of the Section 10(a) permit by USFWS acknowledged the adequacy of the conservation programs as full mitigation. Each covered project in the County must comply with the requirements of the MSHCPs, including conducting habitat assessments and focused surveys, mandatory conservation of lands identified to have conservation value that would support the assemblage of several Conservation Areas in the Western Riverside County and Coachella Valley, and payment of mitigation fees. The Riverside Conservation Authority (RCA) and Coachella Valley Association of Governments (CVAG) have day-to-day management responsibility for western Riverside County and the Coachella Valley, respectively. Both agencies ensure that the required processes occur and that sensitive biological resources are properly protected and managed in both MSHCP regions. RCA, CVAG, the County of Riverside, USFWS and CDFW meet routinely throughout the year to review all actions, including project approvals, resulting conservation activities and other required mitigation measures taken under the MSHCPs. A series of meeting are held each year between all of the above agencies to ensure that the MSHCPs are successfully being implemented and managed. Annual reports are prepared and work plans for the subsequent year are prepared, reviewed, approved and implemented.*

This robust process is a joint effort by the federal, state and local governments to ensure that the sensitive biological resources found in the Western Riverside County and Coachella Valley are successfully protected and conserved for the future. It should be noted that as part of an applicant's participation in the MSHCP, habitat assessments and focused surveys will be required to assess the ongoing status of sensitive biological resources in specific areas. The results of these surveys will be used by the County, CVAG, and the wildlife agencies to verify the ongoing adequacy of the MSHCPs for protecting biological resources and to make the adjustments to guide the development of the annual work plans for the conservation programs authorized by USFWS and CDFW. This process will ensure that the ongoing conservation programs are protecting and managing sensitive biological resources as required by the federal and state endangered species acts, Migratory Bird Treaty Act, and other applicable natural resources laws, as well as required by CEQA.

1. Western Riverside County Multiple Species Habitat Conservation Plan

The continued loss of habitat to new development and the cumbersome process of environmental review and habitat mitigation on a project-by-project basis led to preparation of the WRC-MSHCP. The WRC-MSHCP is a multi-jurisdictional accomplishment that provides a regional conservation solution to species and habitat issues. The primary intent of the WRC-MSHCP is to provide for the conservation of a range of plants and animals within natural communities characteristic of western Riverside County and in return, provide take coverage and mitigation for projects throughout the plan area to avoid the cost and delays of mitigating biological impacts on a project-by-project basis.

The WRC-MSHCP was adopted by Riverside County on June 17, 2003, and is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of FESA, as well as an NCCP pursuant to the California Fish and Game Code. The USFWS issued a Biological Opinion and FESA Section 10 permit for the WRC-MSHCP on June 22, 2004, and CDFW issued an NCCP Approval and Take Authorization on the same date. As long as adherence to the policies and requirements of the MSHCP is maintained, participants in the WRC-MSHCP, which include the County of Riverside and 18 cities, are allowed to authorize 'incidental take' of covered plant and wildlife species.

The WRC-MSHCP provides for the long-term survival of protected and sensitive species by designating a contiguous system of habitat to be added to existing public/quasi-public lands. The Plan includes an impact fee collected by the permittees and used in part to acquire these lands. Depending on the location of the private or public development project, certain biological studies are required for Plan compliance. These studies may

identify the need for specific measures to avoid, minimize and reduce impacts to covered species and their habitat.

The WRC-MSHCP defines two distinct consistency processes for development projects based on their location within the MSHCP's coverage area, with separate processes for projects located outside of Criteria Areas and those within a Criteria Area. Criteria Areas consist of 160-acre 'cells' with identified conservation objectives.

a. Outside Criteria Areas

Projects outside of the Criteria Areas are subject to a consistency analysis based on an examination of "Other Plan Requirements" in accordance with the following sections from the WRC-MSHCP:

Section 6.1.2 - Riparian/Riverine Requirements: This section sets forth the biological survey and report requirements regarding riparian/riverine habitat and associated species, focusing on riparian/ riverine areas, vernal pools and fairy shrimp habitat.

Section 6.1.3 - Narrow Endemic Plant Species Requirement: This section sets forth the biological survey and report requirements regarding narrow endemic plant species and requires focused surveys (generally during the bloom period) based on location in accordance with WRC-MSHCP Figure 6-1.

Section 6.3.2 - Additional Survey Needs and Procedures: This section sets forth the biological survey and report requirements regarding Criteria Area plant species, amphibian species, burrowing owl and mammal species.

Section 6.1.4 - Urban/Wildland Interface Guidelines: This section sets forth a range of measures to eliminate, reduce or minimize edge effects associated with the interface between development and the natural environment.

Section 6.9 - Application of Certain FESA Requirements: This section addresses USFWS proposed or adopted critical habitat designations and future recovery plans. It stipulates that FESA recovery plans do not require any additional land or financial compensation by the permitees. Additionally, Section 6.9 provides that "to the maximum extent allowable" the USFWS shall ensure that any future FESA Biological Opinions issued for future projects are consistent with the no jeopardy ruling granted by the WRC-MSHCP, as long as the project is "consistent with the terms and conditions of the MSHCP and its Implementing Agreement."

Through implementation of the WRC-MSHCP requirements found in Sections 6.1.2, 6.1.3, 6.3.2, 6.1.4 and 6.9, development projects outside of the Criteria Areas can be found consistent with the WRC-MSHCP, thereby ensuring impacts to Covered Species would be less than significant.

b. Inside Criteria Areas

Development projects inside Criteria Areas are subject to the Habitat Acquisition and Negotiation Strategy (HANS); a consistency analysis based on an examination of the MSHCP reserve assembly, other plan requirements, the Joint Project Review process and permittee MSHCP findings, as follows:

Reserve Assembly: Reserve assembly analysis includes a review of the project's relationship on three geographic levels. All projects within the Criteria Area must be reviewed for consistency with the following three reserve units: (1) cores and linkages, (2) Area Plans and subunits, and (3) criteria cells. The HANS process outlines a methodology for permittees to negotiate for the setting aside or purchase of areas needed for conservation (i.e.,

reserve assembly). Permittees may utilize incentives such as density bonuses or waivers of other local impact fees in return for conservation of a portion of a project site deemed important for MSHCP reserve assembly.

Other Plan Requirements: The requirements are the same as outlined for "Outside Criteria Areas."

Joint Project Review Process: Once a development project has been reviewed and a determination of consistency/inconsistency with the MSHCP is made by the county or city permittee, the project is reviewed by the Western Riverside County Regional Conservation Authority (RCA) through the Joint Project/Acquisition Review (JPR) process (as described in Section 6.6.2E of the MSHCP). To ensure that the requirements of the MSHCP are properly adhered to by all applicable parties, all projects within criteria cells are reviewed by the RCA through this process. Additionally, the JPR process includes a 10-day comment period for the USFWS and CDFW should they wish to comment on a decision made by the RCA.

Permittee MSHCP Findings: Once the JPR process is complete, the permittee prepares MSHCP findings for inclusion in final project entitlement or approval documents and staff reports. Findings of MSHCP consistency/ inconsistency cannot be made until the JPR process is complete.

Through implementation of these requirements, development projects inside Criteria Areas can be found consistent with the WRC-MSHCP. Impacts to covered species (candidate, sensitive or special status species) and their habitats resulting from development projects that are consistent with the WRC-MSHCP would be deemed less than significant because of their MSHCP compliance.

2. Coachella Valley Multiple Species Habitat Conservation Plan

The CV-MSHCP is a comprehensive, multi-jurisdictional habitat conservation plan focusing on conservation of species and their associated habitats in the Coachella Valley region of Riverside County. The overall goal of the CV-MSHCP is to maintain and enhance biological diversity and ecosystem processes within the region while allowing for future economic growth. The CV-MSHCP covers 27 sensitive plant and wildlife species, as well as 27 natural communities. The overall provisions for the Plan are subdivided according to specific resource conservation goals and organized according to geographic areas, i.e., Conservation Areas. These areas are identified as 'Core,' 'Essential' or 'Other Conserved Habitat' for sensitive plant, invertebrate, amphibian, reptile, bird and mammal species plus 'Essential Ecological Process Areas' and 'Biological Corridors and Linkages.' Each Conservation Area has specific Conservation Objectives that must be satisfied.

The CV-MSHCP received final approval on October 1, 2008. This, plus an Implementing Agreement (IA), allows signatories of the IA to issue take authorizations for all species covered by the CV-MSHCP, including state and federally-listed species, as well as other identified covered species and their habitats. Each city or local jurisdiction participating in the IA imposes a "development mitigation fee" for projects within its jurisdiction. With payment of the mitigation fee and compliance with the requirements of the CV-MSHCP, a project may be deemed compliant with CEQA, the National Environmental Policy Act (NEPA), CESA and FESA, and impacts to covered species and their habitat would be deemed less than significant.

Similar to the WRC-MSHCP, the CV-MSHCP provides for the long-term survival of protected and sensitive species by designating a contiguous system of habitat to be added to existing public/quasi-public lands. As noted above, the CV-MSHCP also includes an impact fee for the purpose of acquiring the requisite conservation lands. A range of biological studies may also be required as part of the CV-MSHCP environmental review process to identify the need for specific measures to avoid, minimize and reduce impacts to covered species and their habitat.

3. Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP)

The SKR HCP was prepared under the direction of the Riverside County Habitat Conservation Agency (RCHCA) Board of Directors, in consultation with USFWS and CDFW. The County of Riverside is a member agency of the RCHCA. The 30-year SKR HCP was designed to acquire and permanently conserve, maintain and fund the conservation, preservation, restoration and enhancement of Stephens' kangaroo rat-occupied habitat. The SKR HCP covers approximately 534,000 acres within the member jurisdictions and includes an estimated 30,000 acres of occupied Stephens' kangaroo rat habitat. The SKR HCP requires members to preserve and manage 15,000 acres of occupied habitat in seven Core Reserves encompassing over 41,000 acres.

On May 3, 1996, the USFWS issued a permit to the Riverside County Habitat Conservation Agency to incidentally take the federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*). Similarly, the CDFW issued a California Endangered Species Act Management Authorization for Implementation of the Stephens' kangaroo rat on May 6, 1996. To date, more than $50 million has been dedicated to the establishment and management of a system of regional preserves designed to ensure the survival of SKR in the plan area. This effort resulted in the permanent conservation of approximately 50% of the SKR-occupied habitat remaining in the HCP area. Through direct funding and in-kind contributions, SKR habitat in the regional reserve system is managed to ensure its continuing ability to support the species. Core reserves were deemed complete in December of 2003.

4. Lower Colorado River Multi-Species Conservation Program (LCR-MSCP)

The LCR-MSCP was created to balance the use of the Colorado River water resources with the conservation of native species and their habitats. The program works toward the recovery of species currently listed under the FESA. It also reduces the likelihood of additional species listings. With a 50-year implementation period, the program accommodates current water diversions and power production, and optimizes opportunities for future water and power development by providing FESA compliance through its implementation. The LCR-MSCP covers over 400 miles of the lower Colorado River from Lake Mead to the U.S. border with Mexico and includes Lakes Mead, Mohave and Havasu, as well as the historic 100-year floodplain along the main stem of the river. The MSCP calls for establishment of over 8,100 acres of habitat for fish and wildlife species and the production of over 1.2 million native fish to augment existing populations. The plan benefits at least 26 species, most of which are state or federally listed. The federal Bureau of Reclamation, which manages the Colorado River, is the implementing agency for the LCR-MSCP. Partnership involvement occurs primarily through the LCR-MSCP Steering Committee, currently representing 57 entities, including state and federal agencies, water and power users, municipalities, Native American tribes, conservation organizations and other interested parties, which provide input and oversight functions.

C. County Policies and Regulations

1. Riverside County Board of Supervisors Policy J-11 (Parks - Regional Trails)

Board of Supervisors Policy J-11 addresses the Regional Park and Open-Space District's regional trail program. Section 4 of this policy provides regional trail information related to the use of trails in sensitive cultural and biological areas. Section 4 specifically reads: "Where possible, regional trails will avoid sensitive biological areas; trails along watercourses or channels will be located outside of the 25-year floodplain, where feasible. Trails in open-space reserves and wildlife corridors will be aligned to avoid plant, wildlife and cultural resource impacts and will require any of the following singularly or in combinations: directional signs, fencing and interpretive information to minimize or avoid impacts to the area. The use of firebreaks is encouraged." This policy ensures

that environmental objectives for regional trails are clear and implemented to prevent adverse effects to the natural areas in which they are located.

2. Riverside County Oak Tree Management Guidelines

In March 1993, the County of Riverside issued Oak Tree Management Guidelines to address the treatment of oak woodlands in areas where zoning and/or General Plan density restrictions allow the effective use of clustering. The guidelines are generally considered to be the most effective where minimum lot sizes are 2.5 acres or larger, or where oak woodlands are concentrated in a relatively small portion of a project site. The guidelines include recommendations for oak inventories, land use designs to cluster home sites in order to reduce impacts to oaks and mitigation measures for oak conservation.

3. Ordinance No. 559 - Regulating the Removal of Trees

Ordinance No. 559 regulates the removal of living native trees on parcels of property greater than one-half acre, located above 5,000 feet within the unincorporated area of Riverside County without first obtaining a permit to do so. The purpose of the ordinance is to ensure that the timberlands of Riverside County are protected and the ecological balance of such timberlands is preserved.

D. Existing County General Plan Policies

The following existing General Plan polices address biological resources.

1. Land Use (LU) Policies

Policy LU *9.2* (Previously LU 8.2): Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and State regulations such as CEQA, NEPA, the Clean Air Act and the Clean Water Act.

Policy LU *9.3* (Previously LU 8.3): Incorporate open space, community greenbelt separators and recreational amenities into Community Development areas in order to enhance recreational opportunities and community aesthetics and improve the quality of life.

Policy LU 19.1: Where appropriate, use any adopted Density Transfer Program to help implement Rural Village Overlay Study Areas and the Multi-Species Habitat Conservation Program.

Policy LU *26.3* (Previously LU 20.4): Ensure that development does not adversely impact the open space and rural character of the surrounding area.

2. Circulation (C) Policies

Policy C *20.9* (Previously C 20.7): Incorporate specific requirements of the Western Riverside County Multiple Species Habitat Conservation Plan and the Coachella Valley Multiple Species Habitat Conservation Plan into transportation plans and development proposals.

3. Open Space (OS) Policies

Policy OS 5.1: Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to:

a. that necessary for the protection of public health and safety only after all other options are exhausted;

b. essential public service projects where or other feasible construction method or alternative project location exists; or

c. projects where primary function is improvement of fish and wildlife habitat.

Policy OS 5.4: Consider designating floodway setbacks for greenways, trails and recreation opportunities on a case-by-case basis.

Policy OS 5.6: Identify and, to the maximum extent possible, conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

Policy OS 5.7: Where land is prohibited from development due to its retention as natural floodways, floodplains and watercourses, incentives should be available to the owner of the land including density transfer and other mechanisms as may be adopted. These incentives will be provided for the purpose of encouraging the preservation of natural watercourses without creating undue hardship on the owner of properties following these policies.

Policy OS 6.1: During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

Policy OS 6.2: Preserve buffer zones around wetlands where feasible and biologically appropriate.

Policy OS 6.3: Consider wetlands for use as natural water treatment areas that will result in improvement of water quality.

Policy OS 8.1: Cooperate with federal and state agencies to achieve the sustainable conservation of forest land as a means of providing open space and protecting natural resources and habitat lands included within the MSHCPs.

Policy OS 8.2: Support conservation programs to reforest privately held forest lands.

Policy OS 9.3: Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees and other features for ecosystem, aesthetic and water conservation purposes.

Policy OS 9.4: Conserve the oak tree resources in the county.

Policy OS 18.2: Provide incentives to landowners that will encourage the protection of significant resources in the county beyond the preservation and/or conservation required to mitigate project impacts.

Policy OS 20.2: Prevent unnecessary extension of public facilities, services and utilities, for urban uses, into Open Space-Conservation designated areas.

E. Proposed New or Revised Riverside County General Plan Policies

The following proposed new or revised General Plan polices also address biological resources.

1. Land Use (LU) Policies

NEW **Policy LU 7.7:** *Require buffers to the extent possible between development and watercourses, including their associated habitat.*

Policy LU *9.1* (Previously LU 8.1): Provide for permanent preservation of open space lands that contain important natural resources, *cultural resources,* hazards, water features, watercourses, *including arroyos and canyons,* and scenic and recreational values.

Policy LU *9.4* (Previously LU 8.4): Allow development clustering and/or density transfers in order to preserve open space, natural resources, *cultural resources* and/or biologically-sensitive resources. *Wherever possible, development on parcels containing 100-year floodplains and blue line streams and other higher-order watercourses and areas of steep slopes adjacent to them shall be clustered so as to keep development out of the watercourse and adjacent steep slope areas, and to be compatible with other nearby land uses.*

NEW **Policy LU 26.6:** *Encourage clustered development where appropriate on lots smaller than 20 acres. The density yield of the site may be clustered on 0.5 acre lots; however, for sites located adjacent to Community Development Foundation Component, 10,000 square foot minimum lots may be considered.*

2. Open Space (OS) Policies

Policy OS 5.2: If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:

a. Stream scour;

b. Erosion protection and sedimentation;

c. Wildlife habitat and linkages;

d. Cultural resources including human remains;

e. Groundwater recharge capability;

f. Adjacent property; and

g. Design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete and landscaping with native plants to the maximum extent possible). A site-specific hydrologic study may be required.

Policy OS 5.3: Based upon site-specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues:

a. Public safety;

b. Erosion;

c. Riparian or wetland buffer;

d. Wildlife movement corridor or linkage; ~~and~~

e. Slopes*;*

f. Type of watercourse; and

g. Cultural resources.

Policy OS 5.5: ~~New development shall p~~*P*reserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. *Prohibit fencing that constricts flow across watercourses and their banks.* ~~Incentives shall be utilized to the maximum extent possible.~~

Policy OS *17.1* (Previously OS 17.3): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when conducting review of possible *legislative actions such as* general plan amendments, ~~and/or~~ zoning *ordinance amendments, etc.* ~~changes.~~

Policy OS *17.2* (Previously OS 17.1): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when conducting review of development applications.

Policy OS *17.3* (Previously OS 17.2): Enforce the provisions of applicable MSHCPs~~, if adopted,~~ when developing transportation or infrastructure projects that have been designated as covered activities in the applicable MSHCP.

Policy OS 18.1: Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCP's~~, if adopted~~.

***NEW* Policy OS 18.3:** *Prohibit the planting or introduction of invasive, non-native species to watercourses, their banks, riparian areas, or buffering setbacks.*

***NEW* Policy OS 18.4:** *Develop standards for the management of private conservation easements and conservation lots in fee title. For areas with watercourses, apply special standards a-f (below) for their protection and apply standards g-j (below), generally:*

a. For conservation lands with watercourses, conform easement boundaries to setback conditions that will preserve natural flows and changes in the natural boundaries of a watercourse and its protective riparian habitat.

b. Use only 'open' fencing that permits the movement of wildlife and limit fencing to locations outside of setbacks to watercourses (no fencing is permitted to cross the banks or channel of a watercourse, unless no other option is available).

c. Allow fuel modification only to the outside of buffering vegetation (riparian vegetation and vegetation on slopes that buffer the watercourse from erosion and storm water pollution).

d. No planting of non-native invasive species is permitted.

e. No lighting of watercourse area is permitted.

f. Prohibit the use of pesticides and herbicides known to harm aquatic species and sensitive amphibians.

g. Ensure that lands under control of Homeowner's Associations employ an experienced non-profit conservation group or agency to manage/maintain the land.

h. Prohibit use of recreational off-road vehicles.

i. Prohibit grazing and alterations of vegetation except for fuel and weed management under close supervision of qualified natural lands manager.

j. For private conservation lands, especially those within criteria cells of MSHCP areas, ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.

Policy OS 20.1: Preserve and maintain open space that protects county environmental *and other nonrenewable* resources and maximizes public health and safety in areas where significant environmental hazards and resources exist.

4.8.4 Thresholds of Significance for Biological Resources

The project would result in a significant impact to biological resources if it would:

A. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or by the CDFW or USFWS.

B. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the CDFW or USFWS.

C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

E. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or state habitat conservation plan.

F. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

4.8.5 Effect of GPA No. 960 on the General Plan and on Biological Resources

The proposed project, GPA No. 960, would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes,

proposals for new trail and road alignments and standards, and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. In this section, the biology-related changes to the General Plan are outlined and the effects of proposed changes relative to biological resources are discussed. Specific impacts and mitigation are then evaluated according to identified significance thresholds in the section following this one.

A. Proposed Changes to the General Plan

As part of the project review process, biological data in the General Plan was updated and associated policies reviewed and revised where necessary. The existing General Plan addresses biological resources primarily in the Multipurpose Open Space (OS) Element. GPA No. 960 includes the following biology-related updates; text of relevant revised General Plan policies is provided in Section 4.8.3.D.

Multiple Species Habitat Conservation Plans: Text was added and policies updated to address the approval and implementation of the WRC-MSHCP and the CV-MSHCP. Figure OS-4a (Western Riverside Vegetation) and Figure OS-4b (Eastern Riverside County Vegetation) were revised accordingly.

Arroyo Protection: As part of GPA No. 960, text and policies were revised or added to reflect the 2007 Board of Supervisors adopted recommendations of the Joint County-City Arroyo-Watershed Advisory Committee.

In addition to the aforementioned changes to the General Plan, a variety of LUD and policy area revisions are also proposed, as per the descriptions in Section 3.0 of the EIR and associated Figure 3-1 (and corresponding maps within each Area Plan), that may directly or indirectly affect biological resources. Such changes would lead to either an increase or decrease in development potential (density or intensity); the risks associated with introducing new people and property into areas with the various biological resources outlined herein would be increased (or decreased) correspondingly.

GPA No. 960 also includes new and revised policies which would be implemented as part of this GPA. However, until development is proposed it is not feasible to ascertain the location of where they would be implemented. For example, the new incidental rural Retail-Commercial policy, Indian fee land policies and others as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (General Plan Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met.

Actual locations for these improvements are determined when projects are proposed based on site assessment of opportunities and constraints, particularly as related to sensitive biological resources, such as rare habitats like vernal pools and sand dunes, among others, to determine environmentally preferred alignments to minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines, and such, are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services, are not presently foreseeable beyond the master countywide level already depicted in the 2003 General Plan and addressed previously in EIR No. 441. These improvements require site-specific analyses and mitigation when proposed as

part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation would be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage.

B. Analysis of GPA No. 960 Effects on Biological Resources

The General Plan is concerned mainly with the physical build out of Riverside County; many of the changes associated with GPA No. 960 would affect planned land usage. In particular, proposed changes affect land use overlays, land use designations and policies that affect the conversion of rural, semi-rural, agricultural and vacant lands to suburban or urban uses in various parts of Riverside County. These *spatial* changes are associated with specific locations and, thus, the underlying biology (at least in terms of natural communities) can be generally assessed at this time.

Biological effects cannot be delineated at present for land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.). Likewise, the potential for future development occurring within the proposed revised policy areas and overlays has been generalized for this EIR. Due to the large scale of Riverside County and these policy areas (more than 111,400 areas potentially affected), it would not be feasible to provide detailed biological information or assess site-specific biological effects at this time given the size and programmatic nature of this EIR. However, future development accommodated by the updated General Plan could affect a variety of biological resources depending upon location. These include sensitive habitats, habitats known or suspected to be used by threatened, endangered or rare plant and animal species, habitat located within wildlife movement corridors or nursery sites and riparian habitat, such as wetlands or streams. Where not foreseeable at this time, such affects are addressed programmatically, as outlined in the subsequent section.

1. Spatial Analysis Methodology

Because biological resources are subject to a high level of public concern and are protected by a variety of different state and federal agencies, myriad documents and data sources exist addressing numerous aspects of regional biology. As a result, the spatial (GIS) information utilized by the Riverside County GIS Department incorporated a variety of data and sources, including:

RCLIS: The Riverside County Land Information System – the *geographical* base data assembled by the County of Riverside to describe existing lands within the county.

WRC-MSHCP Database: Encompasses the data assembled by the Western Riverside County Regional Conservation Authority with respect to the vegetation resources and land ownerships occurring within the boundaries of the WRC-MSHCP.

CV-MSHCP Database: Encompasses the vegetation data assembled by the Coachella Valley Association of Governments with respect to the vegetation resources occurring within the CV-MSHCP.

California Natural Diversity Database (NDDB): Encompasses the data collected by the CDFW with respect to the biological resources occurring within Riverside County.

U.S. Fish and Wildlife Critical Habitat Portal: Encompasses the data assembled by the USFWS regarding final critical habitat designations for federally-listed threatened and endangered species nationwide (including Riverside County).

To determine the scope of project effects, Riverside County GIS performed spatial analysis of the available biological resource data by overlaying it with known project components to determine acreage within each. The results for these existing resources within Riverside County are summed up in Tables 4.8-F through 4.8-N.

For purposes of these analyses, it was assumed that all natural habitats within the General Plan Foundations of Agriculture, Rural, Rural Community and Community Development would be 100% affected (i.e., removed or degraded to such an extent as to be of no biological value). It is also presumed that all natural vegetation within the Open Space Foundation, other than developed LUD's, such as mineral resources (OS-MIN) and recreation (OS-R) would be retained. Due to the countywide scale of the available vegetation mapping, the smallest vegetation patch size depicted is 10 acres. Thus, certain habitat types that typically occur in small patches (i.e., vernal pools) are likely under-represented in the tables and figures depicting vegetation on a countywide scale. However, the data are considered to be sufficient for the programmatic nature of this EIR, and it is anticipated that subsequent analyses for site-specific projects would achieve the appropriate level of fine-scale resolution.

To determine if an impact is significant, future development accommodated by the proposed project, GPA No. 960, would undergo site-specific analysis as part of their evaluation by the County of Riverside. If located within an area covered by an MSHCP, the applicable plan (the WRC-MSHCP or CV-MSHCP) would guide the analysis. The degree of significance of the anticipated biological impacts would depend upon various factors including, but not limited to, the site conditions at the time of project evaluation, the extent of the area potentially affected and the value of the affected habitat at local and regional scales.

To assess the extent of habitat potentially affected by future development accommodated by GPA No. 960, project items with spatial components were sorted into three categories based on their potential to affect biological resources, as follows:

Conserved: Represents lands within the WRC-MSHCP acquired by conservation entities and being designated as Open Space – Conservation Habitat (OS-CH) as a part of GPA No. 960. OS-CH is a conservation-based LUD with no other development potential. An OS-CH designation assures the lands' conservation status for purposes of Riverside County's General Plan.

Neutral: Represents lands in which proposed project changes would have either no net change on land-use related (spatial) effects or would serve to *decrease* effects by lowering intensity or density plans for future development. This includes the proposed deletions of the El Cariso, Aguanga and Anza Rural Village Study Areas (RVSAs) and deletion of the San Jacinto Agriculture/Development Potential Study Area. In these locations, future development would be required to conform to the existing General Plan LUDs without the potential for intensification that the RVSAs had provided.

Potential Effects: Encompasses those components of GPA No. 960 with the potential to have spatial effects in foreseeable locations. These include the proposed Good Hope and Meadowbrook Rural Village Overlays (RVOs), formal alternate land use plans replacing the existing RVSAs; Lakeland Village Policy Area around Lake Elsinore; Northeast Business Park Policy Area in San Jacinto; changes to LUDs to provide better safety and coordinated land use planning around the Blythe, Flabob and Riverside Municipal Airports[1]; and, a variety of parcel-specific LUD changes, as outlined in Section 3.0. In some of these cases, the proposed new LUD is consistent with an existing developed use and, thus would not actually result in new special effects (for example, placing existing fish farms under the AG LUD). However, to be conservative in estimating the potential for

[1] *The project areas around the Flabob and Riverside Municipal Airports are now within lands incorporated as part of the cities of Jurupa Valley and Estable, respectively, and are now outside of County of Riverside land use authority.*

adverse effects, this category does *not* distinguish between lands with existing built uses versus future (new) development potential.

In addition to the above, Riverside County was divided into three biological subregions that reflect the areas of coverage by the two major MSHCPs: western Riverside County (encompassing the WRC-MSHCP), Coachella Valley (encompassing the CV-MSHCP) and, third, the areas not covered by either MSHCP, which generally consists of a small region east of Anza and south of the San Jacinto Mountains, as well as the vast stretch of desert lying east of the Coachella Valley out to Riverside County's border with Arizona.

Accordingly, the first three subsections that follow include discussions of the project's general effects on each of the three subregions. Following that are summaries of the various biological resources expected to be affected by future development accommodated by the project, again, as divided into the three county territories described above. The significance of these effects is analyzed subsequently in Section 4.8.6 (Impacts and Mitigation).

2. Natural Communities

Table 4.8-F (Natural Communities Potentially Affected in Western Riverside County) provides a summary of potential effects of the proposed project on those communities within the boundaries of the WRC-MSHCP. Table 4.8-G (Natural Communities Potentially Affected in Coachella Valley) provides a similar summary of potential effects to natural communities within the CV-MSHCP, and Table 4.8-H (Natural Communities Potentially Affected in Non-MSHCP Areas) provides one for the portions of unincorporated Riverside County outside these two MSHCPs.

Table 4.8-F indicates that future development in western Riverside County accommodated by the project has the potential to affect a variety of major natural community classifications. Of these communities, three of the habitats do not provide significant natural habitat functions and values (i.e., agriculture[2], barren and developed/disturbed land categories); six provide natural habitat functions and values, but do not include habitats considered sensitive; and six include sensitive habitats due either to plant species or ecology present, or as habitat used or occupied by sensitive animal species. See Section 4.8.2.B for details on the sensitive habitats.

3. Potential Effects to Natural Communities

As previously identified in Table 4.8-D, many candidate, sensitive and special status species within western Riverside County can be associated with specific natural communities. Table 4.8-J (Sensitive Habitats Potentially Affected in Coachella Valley) provides a summary of potential effects of the proposed project on those communities within the boundaries of the WRC-MSHCP.

As shown in Table 4.8-F, the project has the potential to affect a variety of major natural community classifications previously identified in Table 4.8-A. Of these communities, three are comprised of habitats which do not provide significant natural habitat functions and values (i.e. agriculture, barren and developed/disturbed land); six provide natural habitat functions and values, but do not include habitats considered sensitive; and six include sensitive habitats due either to plant species or ecology present, or as habitat used or occupied by sensitive

[2] *While agricultural lands have the potential to habitat for a limited number of sensitive wildlife species (i.e., burrowing owl), foraging habitat for protected raptor species, and limited suitable habitat for sensitive plant species, the intensity of agricultral operations (discing, planting, harvesting, etc.) and consistent disturbance that occurs on agricultural land substantially reduces habitat function for agriculture areas. For classification of land within the County to facilitate a conservative biological resources analysis, it was deemed most accurate and appropriate to designate agricultural lands as not containing significant habitat function or value for native species.*

animal species. The data provided in Table 4.8-F forms the basis for the impact discussion found in Section 4.8.6 (Biological Resources – Impacts and Mitigation).

Table 4.8-F: Natural Communities Potentially Affected in Western Riverside County

Natural Community Major Classifications	WRC-MSHCP Habitat Total (acres)[1]	Project Components						Project Total (acres)[1] & (% of habitat)[5]	
		Conserved[2] (acres)[1] & (% of habitat)[5]		Neutral[3] (acres)[1] & (% of habitat)[5]		Potentially Affected[4] (acres)[1] & (% of habitat)[5]			
Agriculture	90,650	160	*0.2%*	7,830	*9%*	990	*1%*	*8,980 ~~8,970~~*	*10 ~~1.1~~%*
~~Barren~~	~~630~~	~~30~~		~~40~~				~~70~~	~~0%~~
Chaparral	350,100	8,610	*3%*	56,210	*16%*	1,300	*0%*	*66,120 ~~66,110~~*	*19 ~~0~~%*
Cismontane Alkali Marsh	1,920	0	*0%*	1	*0%*	0	*0%*	1	0%
Coastal Sage Scrub	177,280	4,750	*3%*	6,440	*4%*	980	*1%*	12,170	*7 ~~0.6~~%*
Desert Scrub	8,200	30	*0.4%*	2,810	*34%*	5	*0.1%*	*2,850 ~~2,840~~*	*35 ~~0.1~~%*
Developed/Disturbed Land	126,670	120	*0.1%*	9,230	*7%*	1,690	*1%*	*11,040 ~~11,030~~*	*9 ~~1.3~~%*
Grassland	65,460	530	*1%*	3,720	*6%*	630	*1%*	*4,880 ~~4,870~~*	*7 ~~1.0~~%*
Meadow and Marsh[6]	1,670	40	*2%*	70	*4%*	20	*1%*	130	*8 ~~1.2~~%*
Montane Coniferous Forest	31,580	0	*0%*	170	*1%*	80	*0.2%*	250	*1 ~~0.2~~%*
Playa and Vernal Pool[7]	240	0	*0%*	0	*0%*	0	*0%*	0	0%
Riparian Scrub, Woodland and Forest	16,540	190	*1%*	820	*5%*	100	*1%*	*1,110 ~~1,100~~*	*7 ~~0.6~~%*
Riversidean Alluvial Fan Sage Scrub	3,610	100	*3%*	600	*17%*	20	*1%*	720	*20 ~~0.6~~%*
Water (Aquatic)	15,810	3	*0%*	230	*2%*	320	*2%*	550	*4 ~~2.0~~%*
Woodland and Forest	30,990	310	*1%*	960	*3%*	150	*1%*	1,420	*5 ~~0.5~~%*
Total	**920,720**	**14,840**	***2%***	**89,090**	***10%***	**6,290**	***1%***	***110,220 ~~110,160~~***	***12 ~~0.7~~%***

Footnotes:
1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. RCA acquired lands.
3. Changes would have either no net change on land-use related (spatial) effects or would serve to decrease effects by lowering intensity or density plans.
4. GPA No. 960 activities which have a foreseeable impact on natural communities within the WRC-MSHCP.
5. Percentage of *habitat type* potentially affected *by the* project ~~area versus natural community classification~~ within the WRC-MSHCP.
6. Encompasses Fresh Emergent Wetland and Wet (Mountain) Meadow.
7. Encompasses Vernal Pool and Alkali Playa (Sacaton Alliance).

Source: Riverside County GIS Dept., GIS analysis of project and biological data, 2012.

As shown in Table 4.8-G, below, the project has the potential to affect a variety of major natural community classifications within the Coachella Valley region. Of these communities, two classifications do not provide significant natural habitat functions and values (i.e., agriculture and developed, urban and disturbed land) and eight classifications include sensitive habitats due either to plant species or ecology present, or as habitat used or occupied by sensitive animal species. Due to the sensitivity and scarcity of the underlying habitats, impacts to chaparral, desert alkali scrub, desert scrub, dry wash woodlands and mesquite, sand dunes and sand fields, as well as riparian communities could be potentially significant if unmitigated.

Table 4.8-G: Natural Communities Potentially Affected in Coachella Valley

Natural Community Major Classifications	Coachella Valley Habitat Total (acres[1])	Project Components				Project Total (acres[1]) & *(% of habitat)[4]*	
		Neutral[2] (acres[1]) & *(% of habitat)[4]*		Affected[3] (acres[1]) & *(% of habitat)[4]*			
Agriculture	71,470	0	*0%*	*1,070 ~~470~~*	*0.7%*	*1,070 ~~470~~*	1%
Chaparral	86,330	0	*0%*	10	*0%*	10	0%
Desert Alkali Scrub	18,830	0	*0%*	280	*2%*	280	2%
Desert Scrub	607,110	680	*0.1%*	2,310	*0.4%*	2,990	0.4%
Developed, Urban and Disturbed	75,600	110	*0.2%*	290	*0.4%*	400	0.4%
Dry Wash Woodland and Mesquite	38,690	0	*0%*	90	*0.2%*	90	0.2%
Riparian	8,050	0	*0%*	40	*1%*	40	1%
Woodland and Forest	92,710	0	*0%*	0	*0%*	0	0%
Sand Dunes and Sand Fields	8,990	0	*0%*	80	*1%*	80	1%
Marsh	400	0	*0%*	0	*0%*	0	0%
Total	**1,008,180**	**790**	***0.1%***	***4,170 ~~3,570~~***	***0.4%***	***4,960 ~~723,290~~***	***0.5% ~~0.4%~~***

Footnotes:
1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. Changes would have either no net change on land-use related (spatial) effects or would serve to decrease effects by lowering intensity or density plans.
3. GPA No. 960 activities which have a foreseeable impact on natural communities within the CV-MSHCP.
4. Percentage of *habitat type* potentially affected *by the* project ~~area versus natural community classification~~ within the CV-MSHCP.

Source: Riverside County GIS Dept., GIS Analysis of project data, 2012.

Table 4.8-H, below, provides a summary of the proposed project's potential effects on those communities not covered by the WRC-MSHCP or the CV-MSHCP. As the table shows, future development accommodated by the project in areas outside the MSHCPs could affect a variety of natural communities; two of which do not provide significant natural habitat functions and values (i.e., agriculture and urban/disturbed land).

The alkali playa community provides natural habitat functions and values, but does not include habitats considered sensitive. Lastly, five categories include habitats deemed sensitive because of their ecology or due to the plant species present, or because they provide habitat occupied or otherwise used by a sensitive animal species. Due to the sensitivity and scarcity of the underlying habitats, effects to chaparral, coniferous woodlands and forest, desert dunes Mojavean and Sonoran desert scrub and riparian and bottomland communities could be potentially significant if unmitigated. No project-related effects were found in the non-MSHCP area of southwest Riverside County.

Table 4.8-H: Natural Communities Potentially Affected in Non-MSHCP Areas

Natural Community Major Classifications	Non-MSHCP Areas Habitat Total (acres)[1]	Project Components				Project Total (acres[1]) & *(% of habitat)[4]*	
		Neutral[2] (acres)[1] & *(% of habitat)[4]*		Affected[3] (acres)[1] & *(% of habitat)[4]*			
Agricultural Land	96,110	0	*0%*	190	*0.2%*	190	0.2%
Chaparral	16,280	1	*0%*	0	*0%*	1	0%
Coniferous Woodland and Forest	15,490	0	*0%*	0	*0%*	0	0%
Desert Dune Communities	98,840	0	*0%*	0	*0%*	0	0%
Mojavean and Sonoran Desert Scrub	1,645,960	0	*0%*	290	*0%*	290	0%
Alkali Playa	13,110	0	*0%*	0	*0%*	0	0%
Riparian and Bottomland	304,660	0	*0%*	660	*0.2%*	660	0.2%
Urban and Disturbed	350	0	*0%*	0	*0%*	0	0%
Total	**2,190,800**	**1**	***0%***	**1,140**	***0.1%***	**1,140**	**0.1%**

Footnotes:
1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. Changes would have either no net change on land-use related (spatial) effects or would serve to decrease effects by lowering intensity or density plans
3. GPA No. 960 activities which have a foreseeable impact on natural communities within the Non-MSHCP areas.
4. Percentage of potentially affected project area vs. habitat within the non-MSHCP areas of Riverside County

Source: Riverside County GIS Dept., GIS Analysis of project data (2012)

In summary, according to Tables 4.8-F, 4.8-G and 4.8-H, of the *foreseeable* potentially affected areas ~~foreseeable at this time~~, a total of *11,600* ~~10,970~~ acres could be adversely affected by future development accommodated by the project. *Approximately 90,000 additional acres would be also affected in a "neutral" manner by future project development (that is, the project only changes the nature of planned future uses; it does not create a "new" impact).* Out of nearly 4,120,000 acres of unincorporated land in Riverside County, the *project* total *for these two categories (101,500 acres)* represents approximately *2% of the total County* ~~0.3% of the total~~ area.

4. Sensitive Habitats

In addition to the general habitat types discussed above, a number of specific habitats have been particularly deemed sensitive by the CDFW due to their scarcity (meaning the plants and animals which rely on them for their survival are increasingly at risk) and frequently because they support endemic plant or animal species (that is, species that require the habitat's specific combination of traits and, thus, do not occur anywhere else). Accordingly, the sensitive habitat types indicated in Tables 4.8-I through 4.8-K (Sensitive Habitats), below, have the potential to be affected by future development within western Riverside County, the Coachella Valley and non-MSHCP areas, as indicated. For the purposes of this programmatic EIR, the sensitive vegetation communities addressed herein are those included on either the California Natural Diversity Database (NDDB) or the California Native Plant Society (CNPS) List of Vegetation Types. The NDDB is managed by the CDFW; the CNPS list is maintained by that Society with input and consultation with the CDFW and USFWS, among others.

5. Critical Habitat for Protected Species

When a species is proposed for listing as endangered or threatened under FESA, the USFWS must consider whether there are areas of habitat they believe are essential to the species' conservation. Those areas may be proposed for designation as critical habitat. Critical habitat designations provide extra regulatory protection because they trigger special management considerations and recovery actions. In Riverside County, the USFWS has identified critical habitat for 19 species. As shown in Table 4.8-L (Designated Critical Habitat Occurring in Riverside County), below, future development accommodated by GPA No. 960 has the potential to affect designated critical habitat for seven of these species. These effects occur exclusively within the WRC-MSHCP and CV-MSHCP biological resource areas. Analysis indicates that no project components outside the two MSHCPs would affect critical habitat.

As shown in Table 4.8-K below, future development accommodated by GPA No. 960 has the potential to affect a variety of sensitive habitat classifications previously identified in Table 4.8-C. Table 4.8-K forms the basis for the impact discussion, found in Section 4.8.6.

Table 4.8-I: Sensitive Habitats Potentially Affected in Western Riverside County

Sensitive Habitats	County Habitat Total (acres)[1]	Project Area Conserved (acres)[1] & (% of habitat)[3]		Project Area Potentially Affected[2] (acres)[1] & (% of habitat)[3]	
Engelmann Oak Woodland	*4,890* ~~0~~	0	*0%*	0	0%
Alkali Playa[4]	2,090	0	*0%*	60	*3* ~~2.8~~%
Valley and Foothill [Native] Grassland[5]	*65,290* ~~65,220~~	530	*1%*	4,770	7%
Vernal Pool	*240* ~~0~~	0	*0%*	0	0%
Riparian Scrub[7]	*10,410* ~~9,580~~	110	*1%*	680	7%
Southern Cottonwood-Willow Riparian	*1,530* ~~1,360~~	50	*3%*	220	*14* ~~16.2~~%
Southern Sycamore-Alder Riparian Woodland	*430* ~~380~~	0	*0%*	3	*1%*
Southern and Mixed Riparian Forests[8]	*2,680* ~~2,510~~	20	*1%*	120	*4.5* ~~4.7~~%
Riversidean Alluvial Fan Sage Scrub[6]	3,440	90	*3 %*	660	19 %
Total	***91,000*** ~~**84,580**~~	**800**	***1%***	**6,510**	***7*** ~~**6.9**~~**%**

~~* Total aggregate countywide acreage. All values rounded to nearest 10 acres.~~

Footnotes:

1. *Total aggregate acreage for Western Riverside County. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.*
2. *GPA No. 960 activities which have a foreseeable impact on natural communities within the Non-MSHCP areas.*
3. *Percentage of habitat type potentially affected within project area within Western Riverside County.*
4. *Encompasses Alkali Playa (Alkali Sacaton Alliance), 4 acres; Cismontane Alkali Marsh (Alkaline Ephemeral Wetland), 1,923 acres; and, Alkali Desert Scrub (Mixed Saltbush Alliance), 166 acres.*
5. *No specific acreage data available for Valley and Foothill Grassland sub-type. Thus, this category encompasses all grassland subtypes not dominated by non-native species.*
6. *Scalebroom associations only. Alkali Desert Scrub is included in Alkali Playa.*
7. *Encompasses all habitat types noted as "Riparian Scrub" across categories, as per Footnote 5 in Table 4.8-A.*
8. *Encompasses 2,645 acres from Riparian Scrub, Woodland and Forest category and 49 acres from Woodland Forest category.*

Source: Riverside County GIS Department Analysis (2012)

Table 4.8-J: Sensitive Habitats Potentially Affected in Coachella Valley

Sensitive Habitat[2]	County Habitat Total (acres)[1]	Area Potentially Affected (acres)[1]	Percent Affected
Active Desert Dunes	440	0	0%
Active Sand Fields	4,710	0	0%
Arrowweed Scrub	280	4	1%
Chamise Chaparral	4,440	0	0%
Cismontane Alkali Marsh	320	0	0%
Coastal and Valley Freshwater Marsh	80	0	0%
Desert Dry Wash Woodland	37,430	90	0%
Desert Fan Palm Oasis Woodland	1,590	0	0%
Desert Saltbush Scrub	7,210	50	1%
Desert Sink Scrub	11,630	280	2%
Ephemeral Sand Fields	730	0	0%
Interior Live Oak Chaparral	27,650	0	0%
Mesquite Bosque	480	0	0%
Mesquite Hummocks	790	0	0%
Mojave Mixed Woody Scrub	103,510	130	0.1%
Mojavean Pinyon and Juniper Woodland	30,670	0	0%
Peninsular Juniper Woodland and Scrub	29,950	0	0%
Red Shank Chaparral	16,560	10	0.1%
Semi-desert Chaparral	23,910	0	0%
Sonoran Creosote Bush Scrub	380,250	2,750	1%
Sonoran Mixed Woody and Succulent Scrub	106,330	110	0.1%
Southern Arroyo Willow Riparian Forest	150	0	0%
Stabilized Desert Dunes	250	0	0%
Stabilized Desert Sand Fields	840	0	0%
Stabilized Shielded Sand Fields	2,030	80	0.4%
Total	***792,230*** ~~**792,190**~~	**3,500**	**0.4%**

Footnotes:

1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. There is no separate 'conserved' category for this table as proposed conservation lands are only identified for the WRC-MSHCP area under GPA No. 960.

Source: Riverside County GIS Dept., GIS Analysis of project data, 2012.

Table 4.8-K: Sensitive Habitats Potentially Affected in Non-MSHCP Areas

Sensitive Habitat	County Habitat Total (acres)*	Area Potentially Affected (acres)*	Percent Affected
Desert Dry Wash Woodland	304,660	660	< 0.1%
Desert Dunes	62,150	0	0%
Mojave Mixed Woody Scrub	157,290	0	0%
Mojavean Pinyon and Juniper Woodland	12,980	0	0%
Peninsular Pinyon and Juniper Woodland	790	0	0%
Red Shank Chaparral	15,840	1	0%
Semi Desert Chaparral	450	0	0%
Sonoran Creosote Bush Scrub	1,230,680	290	0%
Total	**1,784,840**	***950*** ~~**960**~~	**< 0.1%**

* All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
Source: Riverside County GIS Dept., GIS Analysis of project data, 2012.

Table 4.8-L: Designated Critical Habitat Occurring in Riverside County

Species With Designated Critical Habitat in Riverside County	Mapped Critical Habitat (acres)[1]	Critical Habitat Potentially Affected		
		WRC-MSHCP (acres)[1,2]	CV-MSHCP (acres)[1,2]	Non-MSHCP (acres)[1,2]
Ambrosia, San Diego (*Ambrosia pumila*)	320	NA	NA	NA
Barberry, Nevin's (*Berberis nevinii*)	5	NA	NA	NA
Brodiaea, Thread-Leaved (*Brodiaea filifolia*)	1,500	NA	NA	NA
Butterfly, Quino Checkerspot *(Euphydryas editha quino*)	22,370	7,940	NA	NA
Ceanothus, Vail Lake (*Ceanothus ophiochilus*)	200	0	NA	NA
Flycatcher, Southwestern Willow (*Empidonax traillii extimus*)	68,390	NA	430	NA
Frog, Mountain Yellow-Legged (*Rana muscosa*)	1,510	NA	NA	NA
Gnatcatcher, Coastal California (*Polioptila californica californica*)	151,400	6,440	NA	NA
June Beetle, Caseys (*Dinacoma caseyi*)	590	NA	NA	NA
Kangaroo Rat, San Bernardino Merriam's (*Dipodomys merriami parvus*)	5,570	860	NA	NA
Lizard, Coachella Valley Fringe-Toed (*Uma inornata*)	11,800	NA	140	NA
Navarretia, Spreading (*Navarretia fossalis*)	5,480	0	NA	NA
Onion, Munz's (*Allium munzii*)	1,250	10	NA	NA
Sheep, Peninsular Bighorn (*Ovis canadensis* ssp. *nelsoni*)	69,500	NA	NA	NA
Sucker [Fish], Razorback (*Xyrauchen texanus*)	2,640	NA	NA	NA
Sucker [Fish], Santa Ana (*Catostomus santaanae*)	4,110	3	NA	NA
Toad, Arroyo (*Bufo californicus*)	8,560	2,240	NA	NA
Tortoise, Desert (*Gopherus agassizii*)	747,670	NA	1,130	NA
Vireo, Least Bell's (*Vireo bellii pusillus*)	7,840	20	NA	NA

Footnotes:
1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. "NA" indicates no critical habitat for this species is designated within this portion of Riverside County.

Source: USFWS, Critical Habitat Portal (accessed 4/30/12). Riverside County GIS Dept., analysis of project data, 2012.

6. Oak Woodlands

As shown in Table 4.8-M (Oak Woodlands Potentially Affected in Riverside County), future development accommodated by GPA No. 960 has the potential to affect oak woodlands throughout Riverside County. Oak habitats are sensitive and the State of California has established regulations to protect them. The implications of the effects to these oak resources are discussed under "Impacts and Mitigation" in the subsequent section (4.8.6).

Table 4.8-M: Oak Woodlands Potentially Affected in Riverside County

Natural Community Major Classification	County Habitat Total (acres)*	Areas Potentially Affected (acres)*	Percent Affected
Black Oak Habitats	*3,390*	*0*	*0%*
Canyon Live Oak Habitats	5,250	190	4%
Coast Live Oak Habitats	17,420	700	4%
Englemann Oak Habitats	*4,890*	*0*	*0%*
Interior Live Oak Habitats	16,000	1,520	10%
Muller Oak Habitats	2,740	2,020	74%
Palmer's Oak Habitats	270	20	7%
Scrub Oak Habitats	18,150	850	5%
Total	***68,110 ~~59,830~~***	**5,300**	***8% ~~8.8~~%***

* All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
Source: Riverside County GIS Dept., GIS Analysis of project data, 2012.

7. Wetlands

Because wetland resources tend to be linear (along drainages) and depend on specific soils, topography, hydrology and vegetation, they cannot be analyzed in any great depth or detail at the countywide programmatic scope of this EIR. Rather, detailed analyses would be required at the implementing project development stage for future. Nonetheless, available data at the countywide level on habitat with known wetland or riparian components is shown in Table 4.8-N (Wetland-Associated Habitats Potentially Affected in Riverside County). Project components overlapping these are also shown. A myriad of agencies regulate wetland resources including the Corps, USFWS, CDFW and the County of Riverside (for purposes of implementing Section 6.1.2 of the WRC-MSHCP). Examples of the various required analyses and regulatory actions are described in Impact 4.8.A, in the subsequent section.

Table 4.8-N: Wetland-Associated Habitats Potentially Affected in Riverside County

Habitats Potentially Supporting Federally Protected Wetlands	County Habitat Totals (acres)[1]	Areas Potentially Affected (acres)[1]	Percent Affected
Western Riverside County	***43,420***	***3,910***	***9%***
Marsh Communities *Includ~~esing~~:* *Alkalai Playa (4 acres)* Cismontane Alkali Marsh *(1,920 acres)* *Fresh Emergent Wetland (1,610 acres)* *Vernal Pool (240 acres)* *Wet Meadow (50 acres)*	*3,830 ~~1,920~~*	*90 ~~1~~*	*2% ~~0%~~*
Riparian Scrub, Woodlands and Forest *Includ~~esing~~:* Desert Riparian *and* Desert Wash *(270 acres)* *Eucalyptus (1,110 acres)* ~~Fresh Emergent Wetlands~~ *Montane Riparian and Valley Foothill Riparin (20 acres)* *Riparian (Mulefat) Scrub (1,240 acres)* *Riparian Scrub (All Other) (1,070 acres)* *Southern Cottonwood Willow Riparian Forest (1,530 acres)* *Southern Sycamore Alder Riparian Woodland (430 acres)* *Southern Willow Scrub (7,830 acres)* Valley Foothill Riparian *(430 acres)*	*20,170 ~~13,510~~*	*2,650 ~~1,220~~*	*13% ~~9%~~*
Riversidean Alluvial Fan Sage Scrub *Includes:* *Alkalai Desert Scrub (170 acres)* *Riparian Alluvial Fan Sage Scrub (3,440 acres)*	3,610	*620 ~~720~~*	*17% ~~20%~~*

Habitats Potentially Supporting Federally Protected Wetlands	County Habitat Totals (acres)[1]	Areas Potentially Affected (acres)[1]	Percent Affected
Water *Includesing:* • Lacustrine *(15,030 acres)* • Riversine and Lacustrine *(780 acres)*	15,810	550	*3% ~~4%~~*
~~**Woodland and Forests** Including: Juniper, Coastal Oak Woodlands, Montane Riparian and Hardwood Riparian, and Valley Foothill Riparian~~	~~7,980~~	~~720~~	~~9%~~
Coachella Valley	***110,200***	***430***	***0.4%***
Desert Alkali Scrub Communities *Includesing: ~~and~~* • Desert Saltbush Scrub *(7,210 acres)* • Desert Sink Scrub *(11,630 acres)*	18,830	*280 ~~330~~*	*1% ~~2%~~*
Developed *(Man-Made)* Areas *Includesing: ~~and Man-Made Ponds~~* • Lake *(44,140 acres)* • Reservoir *(90 acres)*	44,230	*20 ~~10~~*	*<0.1% ~~0%~~*
Dry Wash Woodlands and Mesquite Communities *Includesing: ~~and~~* • Desert Dry Wash Woodland *(37,430 acres)* • Mesquite Bosque *(480 acres)* • Mesquite Hummock *(790 acres)*	38,690	90	*0.2% ~~<1.0%~~*
Marsh Communities *Includesing:* • Cismontane Alkali Marsh *(320 acres)* • Coastal Freshwater Marsh and Valley Freshwater Marsh *(80 acres)*	400	0	0%
Riparian Communities *Includesing: ~~and~~* • Arrowweed Scrub *(238 acres)* • Desert Fan Palm Oasis Woodlands *(1,590 acres)* • Southern Arroyo Willow Riparian Forest *(150 acres)* • Sonoran Cottonwood-Willow Riparian Forest *(690 acres)* • Southern Sycamore-Alder Riparian Woodland *(960 acres)* • Tamarisk Scrub *(4,390 acres)*	8,050	40	*0.5% ~~1%~~*
Non-MSHCP Areas	***317,770***	***660***	***0.2%***
Alkali Playa	13,110	0	0%
Riparian and Bottomland Communities *Includesing:* • Desert Dry Wash Woodlands *(304,660 acres)*	304,660	660	*0.2 ~~<1.0~~%*
Total	***471,390 ~~470,800~~***	***5,000 ~~4,340~~***	***1% ~~<1.0%~~***

Footnotes:
1. All values rounded to nearest 10 acres; except, values under 10 rounded to nearest whole unit. Thus, totals may not sum precisely.
2. Habitats indicated in plain font are subsets of those listed above them in bold.

Source: Riverside County GIS Dept., GIS Analysis of project data, 2012.

4.8.6 Biological Resources - Impacts and Mitigation

A. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations, or by the CDFW or USFWS?

Impact 4.8.A – Adversely Affect Riparian and Other Sensitive Habitats: Future development accommodated by the proposed project, GPA No. 960, would increase rural, suburban and urban uses in Riverside County, adversely affecting riparian or other sensitive habitats in various areas. Compliance with a variety of laws, including Sections 401, 402 and 404 of the federal Clean Water Act, Section 1600 *et seq.* of the California Fish and Game Code and the multi-species habitat conservation plans for western Riverside County and the Coachella Valley, as well as a variety of existing and proposed General Plan policies and project-specific new Mitigation Measure 4.8.A-N1, would ensure that this impact is reduced to less than significant.

1. Analysis of Impact 4.8.A

Sensitive habitats are natural vegetation communities that are unique, of relatively limited distribution in the region or of particularly high wildlife value, as designated by federal, state or local conservation programs. Sensitive habitats occur in Riverside County as subtypes of the major natural communities listed in Tables 4.8-A, 4.8-B and 4.8-C for western Riverside County, the Coachella Valley region and the portions of Riverside County not covered by either MSHCP (predominantly the far eastern third of the county), respectively. These major natural communities are described in Section 4.8.2.

As shown in Table 4.8-I of the prior section, western Riverside County features nine sensitive habitat types. Based on project components with known or reasonably foreseeable spatial components, seven of these nine sensitive habitats would be affected by future development accommodated by the project; a total of roughly *7%* ~~6.9%~~ of western Riverside County's sensitive habitat. Due to the sensitivity and scarcity of the underlying habitats, impacts to grasslands, playas, riparian scrub, woodlands and forests, Riversidean alluvial fan sage scrub communities and aquatic habitats (water) could potentially be significant if unmitigated.

For the Coachella Valley region of Riverside County, 25 sensitive habitat types have been mapped (see Table 4.8-B). Of these, Table 4.8-J indicates that only nine (roughly 0.4%) would be affected by future development accommodated by the project. Due to the sensitivity and/or scarcity of the underlying habitats, impacts to chaparral, desert alkali scrub, desert scrub, dry wash woodlands and mesquite, sand dunes and sand fields, as well as riparian communities, could be potentially significant if unmitigated.

Lastly, within the non-MSHCP areas (particularly, the eastern third of the county), a total of eight major natural communities occur (see Table 4.8-C). As shown in Table 4.8-K, ~~there are eight sensitive habitat types and~~ three of the eight could be affected by GPA No. 960. Due to the sensitivity and/or scarcity of the underlying habitats, impacts to chaparral, coniferous woodlands and forest, desert dunes, Mojavean and Sonoran desert scrub and riparian and bottomland communities could be potentially significant if unmitigated.

Additional areas would also be affected by implementation of the proposed countywide policies outlined in the project description (Section 3.0) of this EIR. However, because these policies are not tied to any specific locations at this time, it would be speculative to try to assess their impacts on habitats or species present. Rather, such impacts would necessarily be addressed programmatically, as outlined below, with additional site-specific details being incorporated as they become available at the individual site-specific review stage.

Habitat may be lost or significantly altered due to direct impacts as well as indirect impacts resulting from development. Direct impacts are generally those in which habitat is lost to grading and filling. Indirect impacts to riparian or other sensitive habitats generally occur through edge effects, habitat alterations, disturbances, fragmentation or degradation. Edge effects occur where urban development meets open space. In these areas the potential for indirect impacts to wildlife within the open space are the greatest. Types of urban disturbances potentially affecting natural open space areas include: change in runoff quality and pattern; introduction of toxic chemicals (particularly fertilizers and other gardening chemicals) and manure; spill-over of nighttime lighting; increased ambient noise levels and spill-over noise; introduction of non-native plants (including potentially invasive species); increased risk of trash and refuse; and increased potential for human disturbances of open spaces.

In order to minimize these edge effects, Section 6.1.4 of the WRC-MSHCP and Section 4.5 of the CV-MSHCP include measures to protect open space designated for inclusion in MSHCP conservation areas and minimize edge effects. Further, myriad agencies govern riparian and wetland resources, including the Corps, USFWS, CDFW and the County of Riverside. When wetlands are found on lands proposed for development, the following analyses and (where necessary) regulatory actions are required. A mitigation plan or Determination of Biologically

Equivalent of Superior Preservation (DBESP) must be in place prior to project approval and the project is conditioned to obtain the requisite state and federal permits prior to grading. The County of Riverside requires mitigation at a ratio deemed acceptable to the resource agencies. Accordingly, these measures would also apply to future development under GPA No. 960. The regulations identified below are more fully described in Section 4.8.3 of this EIR.

- Jurisdictional delineation of waters of the U.S. and wetlands pursuant to the CWA and Corps protocol. If avoidance is infeasible, then applicants must obtain a CWA Section 404 permit from the Corps prior to project grading. These permits must include mitigation measures or other equivalent requirements necessary to reduce impacts to riparian and wetlands resources to below the level of significance and ensure no net loss of wetlands.

- Delineation of streams and vegetation within drainages and native vegetation of use to wildlife pursuant to CDFW and CFGC section 1600 *et seq*. Where necessary, applicants are required to obtain a Section 1601 or 1603 permit and a Streambed Alteration Agreement from CDFW. These permits must include mitigation measures or other equivalent requirements that reduce impacts to riparian and wetlands resources to below the level of significance and ensure no net loss of wetlands.

- Riparian/Riverine evaluation pursuant to the WRC-MSHCP Section 6.1.2. Applicants must complete the HANS process and avoid impacts to riparian areas to preserve the function and value of such habitats. Where avoidance is infeasible, a Section 404 and/or a Section 1601 or 1603 permit may be required.

In addition to the above, any habitat may also be considered sensitive (including those identified as non-sensitive) should it be found to support a listed, proposed or candidate species, or provide a viable habitat linkage between areas of sensitive habitat.

The impacts discussed herein are based on the assumption that biological resources would be directly or indirectly affected by build out of General Plan components amended by GPA No. 960 and associated public works projects. ('Build out' means that all development mapped in the General Plan is assumed to be built over the next 50 years; even though in reality full build out is rarely reached by a city or county.) Direct and indirect biological impacts include the following:

- Direct mortality of individuals of listed, proposed or candidate species, or loss of habitat occupied by such species.

- Alteration or loss of habitat for listed, proposed or candidate species that inhibits or compromises recovery efforts that could otherwise lead or contribute to the delisting of the species.

- Direct loss of sensitive natural communities.

- Fragmentation of sensitive habitats resulting in isolation of habitat patches creating a 'checkerboard' pattern of small habitat patches of limited biological value.

- Fragmentation of habitat that constricts, inhibits or eliminates wildlife movement.

- Direct loss of oak trees or alteration of natural processes (e.g., hydrology) resulting in indirect loss of oak trees.

- Alteration of habitat or natural processes that would result in the direct or indirect mortality of listed, proposed or candidate species or that would result in loss, fragmentation or isolation of sensitive habitat.

During subsequent project-level environmental analysis and review of individual future development projects, compliance with applicable regulations may also require coordination with resource agencies (e.g., USFWS, CDFW, or Corps) to determine specific mitigation measures necessary for impacts to waters of the U.S. (including wetlands), riparian habitats and state and federally listed species. This is especially true for the non-MSHCP areas of Riverside County. Resource agency permits for project-level approvals may require mitigation measures in addition to those outlined in the applicable MSHCP, EIR No. 441 or herein.

2. Regulatory Compliance for Impact 4.8.A

As explained below, compliance with the following existing laws, regulatory programs and General Plan Policies would aid in reducing impacts to riparian and other sensitive habitats.

a. Compliance with Federal, State and County Regulations

Compliance with the following federal, state and county regulations would prevent significant impacts to riparian and other sensitive habitats in Riverside County.

Federal Clean Water Act (Sections 401, 402 and 404): Many wetland communities (e.g., freshwater marsh, riparian forests, riparian woodlands, open water, flood channels, rivers and stream beds) within Riverside County include areas subject to federal Clean Water Act Sections 401, 402 and 404 where habitat meets the CWA definition of a "jurisdictional water of the U.S." or adjacent "wetland." Thus, regardless of MSHCP coverage, projects with jurisdictional waters or wetlands would be required to obtain a CWA Section 404 permit prior to issuance of a grading permit by the County of Riverside. Also, the Corps shall continue to consult with the USFWS pursuant to Section 7 of the FESA on projects that may affect federally listed species within Corps jurisdictional wetlands and waters. By regulation, Corps permits must ensure no net loss of riparian habitat and preserve the biological function and value of any jurisdictional waters on site.

Fish and Game Code Section 1600 *et seq*.: Many wetland communities (e.g. freshwater marsh, riparian forests, riparian woodlands, open water, flood channel, river and stream beds) within western Riverside County include areas subject to California Fish and Game Code Section 1600 *et seq.* and are regulated by the CDFW. The CDFW shall continue to work closely with the Corps, USFWS and the County of Riverside to ensure that agreements required pursuant to this code are consistent with the mitigation required for WRC-MSHCP Covered Species and the sensitive habitats on which they depend.

WRC-MSHCP: Land use within western Riverside County is subject to the WRC-MSHCP. The MSHCP identifies criteria cells within which 153,000 acres of new conservation will be achieved and contribute toward the assembly of the overall 500,000-acre WRC-MSHCP reserve system. Discretionary projects that occur within criteria cells are submitted to the County of Riverside for review and are subject to the Habitat Evaluation and Acquisition and Negotiation Strategy (HANS) which ensures that the sensitive habitats and riparian areas are conserved. Ongoing implementation of the WRC-MSHCP ensures that sufficient sensitive habitat is conserved to off-set the habitat losses incurred by future development within western Riverside County.

The MSHCP also identifies the requisite studies and land use considerations necessary to protect riparian areas outside of the criteria cells that contribute to the function and value of the reserve system and the sensitive habitats conserved therein. Pursuant to Section 6.1.2 of the WRC-MSHCP, as projects are proposed within the

plan area, an assessment of the potentially significant effects on riparian/riverine areas and vernal pools are performed using available information augmented by project-specific mapping provided to and reviewed by the Riverside County's biologist(s).

For identified and mapped resources not necessary for inclusion in the WRC-MSHCP Conservation Area, applicable mitigation, which may include federal and state regulatory standards related to wetland functions and values, shall be imposed by the County of Riverside. In the course of complying with this process, the County of Riverside must first demonstrate efforts to avoid and then minimize direct and indirect effects to mapped wetlands. If feasible, the project is redesigned to avoid wetland resources to ensure the long-term conservation of the areas to be avoided. If avoidance is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools and associated functions and values to the greatest extent possible is identified and the applicant is conditioned to obtain a Section 1601/1603 permit from CDFW and a Section 404 permit from the Corps, where applicable. Additionally, Section 6.1.4 of the WRC-MSHCP sets forth a range of measures to eliminate, reduce or minimize edge effects associated with the interface between development and the natural environment.

Through implementation of the WRC-MSHCP requirements found in Sections 6.1.2, 6.1.3, 6.3.2, 6.1.4 and 6.9, development projects outside of the Criteria Areas can be found consistent with the WRC-MSHCP, thereby ensuring impacts to Covered Species are less than significant. A more detailed description of these MSHCP requirements is found in Section 4.8.3 above.

Coachella Valley Multiple Species Habitat Conservation Plan: Land use within the Coachella Valley region of Riverside County is regulated by the CV-MSHCP. The CV-MSHCP features a reserve system of 745,900 acres established from lands within 21 Conservation Areas. The CV-MSHCP is designed to ensure conservation of covered species as well as the natural communities on which they depend – including riparian habitat and other sensitive habitats. To ensure necessary habitat is preserved, discretionary projects that occur within its Conservation Areas are submitted for joint project review (JPR) by the County of Riverside and the Coachella Valley Conservation Commission (CVCC) pursuant to Section 6.6.1.1 of the CV-MSHCP. For proposals within the Santa Rosa and San Jacinto Mountains Conservation Area, the County of Riverside employs the HANS process instead. See Section 4.8.3 for details on how these processes work. Implementation of JPR and the HANS process ensures that sensitive habitats and riparian areas are conserved pursuant to the CV-MSHCP. Ongoing implementation of the CV-MSHCP ensures that sufficient sensitive habitats are conserved to offset habitat losses incurred by permitted development, including that which would result from implementation of the proposed project.

Although, land use designation changes within the valley are proposed as part of GPA No. 960, the only take (loss) authorized for habitats within the Coachella Valley would be those permitted in conjunction with Attachment 3 of the CV-MSHCP's permit from the USFWS, which delineates the extent of take authorized for the CV-MSHCP natural communities. This list indicates the necessary habitat conservation to be achieved for each habitat type and the allowable take that it offsets. Through compliance with the provisions of the CV-MSHCP, future project impacts to sensitive habitats would be completely accounted for and mitigated. This includes riparian habitats as well as other sensitive habitats.

b. Compliance with Existing Riverside County General Plan Policies

The following existing policies of the Riverside County General Plan would help further reduce significant impacts to riparian or other sensitive habitats in within western Riverside County. See Section 4.8.3.D for full text of each of these policies.

Policy LU 9.2: This policy would help prevent impacts to riparian and other sensitive habitats by requiring developments to comply with federal and State regulations pertaining to environmental resources.

Policy C 20.9: This policy would ensure that all transportation plans and development proposals reflect specific requirements of the WRC-MSHCP and the CV-MSHCP.

Policy OS 5.1: By allowing channelization of floodways only as a last resort, this policy would ensure that sensitive riparian habitats are allowed to persist rather than be lost due to development impacts.

Policy OS 5.6: By requiring that upland habitat areas be identified and conserved to the maximum extent possible, this policy would provide for the ongoing habitat function and value of sensitive riparian areas, allowing them to persist rather than be lost due to permanent development impacts.

Policy OS 6.1: By requiring compliance with the Clean Water Act's Section 404 process, this policy would assure no net loss of jurisdictional wetlands.

Policy OS 6.2: By requiring preservation of buffer zones around wetlands, this policy would assure that additional habitat is conserved for protected species that rely on riparian habitats, that edge effects would be minimized and that species mortality due to such edge effects was reduced.

Policy OS 9.3: By requiring the maintenance and conservation of superior examples of native trees, natural vegetation, stands of established trees and other features for ecosystem conservation purposes, this policy would ensure that species that rely on such habitats would be protected.

Policy OS 9.4: By requiring the conservation of oak tree resources in the county, this policy would ensure that no net loss of oaks occurs. Further, it would preserve nesting and foraging habitat essential to many protected bird species.

Policy OS 20.2: By preventing the unnecessary extension of public facilities and services and utilities into Open Space-Conservation areas, this policy would reduce the fragmentation of habitat essential to the survival of protected species.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would further prevent significant impacts to riparian habitat or other sensitive natural communities. See Section 4.8.3.D for the full text of each of these policies.

Policy LU 7.7: By requiring buffers between development and watercourses, including their associated habitat, this policy would ensure that riparian habitat is allowed to persist rather than be lost to permanent development impacts.

Policy LU 9.1: By requiring that development provide for the preservation of open space that contain natural resources including arroyos and canyons, this policy would see that sensitive riparian and upland habitats are allowed to persist rather than be lost due to development impacts.

Policy OS 5.2: By requiring that modifications to floodways be designed to reduce adverse environmental effects, this policy would ensure that more floodways within the county are designed to conserve the function and value of riparian habitats and serve as species movement corridors.

Policy OS 5.3: By requiring setbacks from floodway boundaries for wildlife movement corridors and linkages, this policy would ensure that sensitive species dependent upon riparian linkages are allowed to persist rather than be lost due to development impacts.

Policy OS 5.5: Requiring that development preserve and enhance existing riparian habitat and prevent obstruction of natural watercourses, this policy would ensure that the function and value of such habitat is improved. Further, it provides that sensitive species dependent upon such habitats are allowed to persist rather than be lost to permanent development impacts.

Policy OS 17.1, 17.2 and 18.1: By specifying that the provisions of applicable MSHCPs must be enforced in the course of County land use review, review of legislative actions, planning of transportation or infrastructure projects, etc., these policies codify the local conservation measures developed for MSHCP-protected species throughout the county.

Policy OS 18.3: By prohibiting the planting or introduction of invasive, non-native species to watercourses, riparian areas and their buffers, this policy would minimize edge effects and associated species mortality.

Policy OS 18.4: By establishing specific standards for management of watercourses on private conservation easements, this policy would institute clear expectations concerning the elimination of edge effects, preservation of wildlife movement and minimization of fuel modification areas.

d. Additional Project-Specific Mitigation for Impact 4.8.A

Despite all of the above measures that lessen impacts to riparian habitat, additional project-specific mitigation is necessary to fully minimize impacts. New Mitigation Measure 4.8.A-N1 would ensure that, in areas of Riverside County not already regulated by either the WRC-MSHCP or CV-MSHCP, a jurisdictional assessment must be performed for projects proposed for areas that may support state or federally protected wetlands in order to determine if any riparian resources would be affected by the proposed implementing project. Further, where impacts to such wetlands are unavoidable, a CWA Section 404 permit must be obtained from the Corps and/or a streambed alteration agreement must be obtained from the CDFW pursuant to CFGC Section 1600 *et seq.* Among other things, plans developed pursuant to the Section 404 permit require no net loss of wetlands. Typically, this means that a project's loss or disturbance of wetlands must be offset by creation or protection of additional wetlands, often at a 3:1 (replacement:loss) ratio or other formula deemed acceptable by the applicable resource agency.

NEW **Mitigation Measure 4.8.A-N1:** ~~For sites not governed by an existing MSHCP,~~ Where site conditions (for example, topography, soils, vegetation, etc) indicate a project could adversely affect any riparian or riverine resources, then an appropriate assessment shall be prepared by a qualified professional. An assessment shall include, but not be limited to, identification and mapping of any riparian/riverine areas and evaluation of species composition, topography/hydrology and soil analysis, as applicable. An assessment shall be completed as part of the environmental review for the development proposal prior to its approval. Upon receipt of an assessment, the Riverside County Ecological Resources Specialist (ERS) shall review the document and make a finding that either:

a. Riparian/riverine areas do not exist on site;

b. Project-specific avoidance measures have been identified that would be sufficient to ensure avoidance of riparian/riverine areas; or

c. Impacts to riparian/riverine areas are significant and unavoidable. If avoidance is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/ riverine areas and vernal pools and associated functions and values to the greatest extent possible must be developed.

If impacts remain ~~significant and~~ unavoidable, then the ~~ERS will~~ projects shall be conditioned to require the project applicant to obtain a Section 404 permit from the ACOE and/or a Fish and Game Code Section 1600 agreement from CDFW prior to the issuance of any grading permit or other action by the County of Riverside that would lead to the disturbance of the riparian resource.

NEW **Mitigation Measure 4.8.A-N2:** ~~For sites not governed by an MSHCP, a~~ A general biological resources assessment (BRA) shall be required as part of the discretionary project review process at Riverside County's discretion. For example, a BRA would be required if a site inspection, aerial or other photos, resource agency data or any other information indicates potential for sensitive habitat to occur on, or be adversely affected by the proposed project. The BRA shall be prepared and reviewed as per the requirements outlined in Mitigation Measure 4.8.B-N1.

3. Finding on Significance of Impact 4.8.A

Implementation of the above-listed existing regulations and General Plan policies and, in particular, the provisions of the two multiple species habitat conservation plans, as well as new Mitigation Measures 4.8.A-N1 and 4.8.A-N2, would ensure that future development accommodated by GPA No. 960 would have a less than significant impact on riparian or other sensitive natural communities identified in local and regional plans, policies and regulations, and those identified by the CDFW and USFWS.

B. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the CDFW or USFWS?

Impact 4.8.B – Cause Direct or Indirect Impacts to Protected Species or Their Habitats: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting various sensitive species, including threatened, endangered and special status species protected under various local, state and federal laws. Compliance with the federal and California Endangered Species Acts (FESA and CESA), the federal Clean Water Act (CWA) and the California Fish and Game Code, as well as the two MSHCPs within Riverside County (WRC-MSHCP and CV-MSHCP), plus existing and proposed General Plan Policies would serve to avoid, reduce or minimize significant impacts to protected species and their habitats. In addition, a new project-specific mitigation measure, 4.8.B-N1, is proposed to ensure this impact would be less than significant.

1. Analysis of Impact 4.8.B

a. General Development Impacts

As shown in Tables 4.8-H and 4.8-D, a diverse number of species occupy Riverside County. Impacts to these species would occur in several ways. Grading and other land-disturbing activities as a result of development accommodated by GPA No. 960 would result in direct effects to species present, particularly for ground-dwelling nocturnal mammals such as gophers, kangaroo rats and pocket mice. Any reptiles, amphibians, invertebrates or

plants present would also be affected. Due to their higher mobility, birds would be less directly affected. Direct harm would generally be limited to unfledged birds (i.e., nestlings, eggs). Direct harm of larger mammals would also be minimal since they can typically flee the site.

Indirect impacts would also occur within all of these species groups. Indirect harm includes direct secondary impacts due to construction activities, such as: disturbed breeding, feeding, nesting or foraging behaviors; loss of foraging habitat; loss of food sources; loss of burrows; and, loss of nesting or roosting habitat. Indirect harm also includes ongoing secondary impacts due to human occupation, such as: disturbance by human intrusion, increased night-time lighting, introduction of new species (particularly dogs and house cats) and increased urban-associated predators (such as raccoons, opossums or coyotes) due to greater availability of scavenged food sources, i.e., refuse and pet foods.

For all of these impacts, the severity of their effect on a given species or individual of the species depends on a variety of factors:

- Type of habitat affected.
- Degree/amount of habitat affected (100% because of grub and grade vs. 50% because of mow and thin within fuels management zones, for example).
- Timing/duration of habitat effects (i.e., bird nesting season).
- Species-specific biological or ecological niches and needs (i.e., nocturnal, scavenger, etc.).

To the extent the aforementioned impacts affect non-listed species, they are considered to be less than significant. Such non-sensitive wildlife species would generally occur in large enough numbers that impacts to individuals on a site would not be significant. In addition, any open space set aside on a site or conserved elsewhere (for example, as part of MSHCP requirements) would provide protected habitat for the benefit of the common species as well as sensitive and protected species. Also, as discussed below, there are a number of regulatory measures that would minimize edge effects associated with interface areas between open space and development, which would also minimize impacts to both sensitive and non-sensitive species.

b. Adverse Effects on Protected Species

Species at risk for the aforementioned adverse effects are identified in Tables 4.8-D and 4.8-E. Pursuant to the tables, 349 species in Riverside County are considered candidate, sensitive or special status under FESA, CESA, and/or CNPS/CNPS designation. These include species that are listed as endangered or threatened under FESA, species proposed or candidates for such listing and species similarly listed under CESA. This list also includes species covered by regional MSHCPs within Riverside County. In addition, the California Native Plant Protection Act (NPPA) identifies approximately 2,000 native plant species of concern throughout the State of California. The full NPPA list is included in Appendix EIR-9. Given the vast range of habitats and species occurring in California, many of the 2,000 plants listed by the NPPA do not occur in Riverside County. To determine which are applicable to Riverside County, the CNPS and NDDB databases were used, the results of which are reflected in Tables 4.8-D and 4.8-E. The existence and location of the other 2,000 NPPA plants is not reasonably foreseeable at this time.

Of the aforementioned 349 protected species, 146 are addressed under the WRC-MSHCP and 27 under the CV-MSHCP. These species would be adequately covered by these plans to ensure that impacts to these species and their habitats would be less than significant. Within the 1,140 acres of non-MSHCP areas in Riverside County,

however, additional steps must be taken to ensure impacts to sensitive and protected species would not be significant.

Since impacts to species would generally occur pursuant to known species habitat associations (Table 4.8-D), foreseeable habitat losses, such as the 'Affected' acreages identified in Tables 4.8-F, 4.8-G and 4.8-H, indicate where such species would be affected. Because of the scope of this programmatic EIR, it is not feasible to analyze species-specific impacts at a site-specific level at this time. Moreover, it is infeasible to perform on the ground biological surveys for a project of this magnitude (covering a county of nearly 200 square miles in size) as many species are transient, changing location from day-to-day, month-to-month or year-to-year. Thus, even if performed, species surveys would be rendered obsolete within a short amount of time and *would* not be reflective of the entire county's biota.

Given the massive scope of Riverside County's ecosystems and wide array of plant and animal species within it, the specific likelihoods of any given sensitive species occurring on a specific site cannot be determined within the scope of this programmatic EIR. Rather, focused assessments would be performed in conjunction with future site-specific development proposals. Instead, this EIR addresses these impacts programmatically, including providing mitigation measures for impacts not already addressed through existing federal, state and local regulations.

Future analysis would be necessary to determine if an implementing project would have a significant impact on a sensitive species or its habitat. The potential for such a project's impacts to be considered significant would depend upon various factors including, but not limited to, the site conditions at the time of project evaluation, the extent of the area potentially affected and the value of the affected habitat at local and regional scales.

Site-specific analyses shall be required and performed pursuant to the mitigation measures cited for each biological region below. Where protected species or suitable habitat is found on a project site, various measures shall be required to address impacts. Such measures would include County of Riverside programs, State of California and/or federal regulations and CEQA-specific mitigation measures, as outlined below. Adherence to these measures shall ensure that candidate, sensitive and special status species are not jeopardized by future implementing project development and that impacts to these species are avoided or reduced to less than significant.

The following information characterizes the protected species within each area of the three biological regions of Riverside County.

Western Riverside County: Future development pursuant to GPA No. 960 has the potential to directly affect *approximately 6,300* ~~6,263~~ acres of habitat within twelve major natural community associations, as indicated in Table 4.8-F, and thus affect the associated candidate, sensitive or special species represented in Table 4.8-D.

Coachella Valley: Future development pursuant to GPA No. 960 has the potential to directly affect 3,570 acres of habitat within eight major natural community associations as indicated in Table 4.8-G and thus affect the associated candidate, sensitive or special species (as indicated in Table 4.8-D) that may occur in the affected natural communities.

Non-MSHCP Areas: Future development pursuant to GPA No. 960 has the potential to directly affect 1,141 acres of habitat within three major natural community associations as indicated in Table 4.8-H. Table 4.8-D indicates that candidate, sensitive or special species may occur in these affected natural communities.

c. Species with Designated Critical Habitat

As indicated in Section 4.8.5 and further clarified in Table *4.8-L* ~~4.8-I~~, development accommodated by GPA No. 960 has the potential to affect critical habitat for seven of 19 species for which the USFWS has designated 'critical habitat' in Riverside County. All except one of these seven species are covered under the WRC-MSHCP, CV-MSHCP or LCR-MSCP. The County of Riverside is a permittee under two of the three plans, the WRC-MSHCP and the CV-MSHCP. The only species for which critical habitat has been designated, but is not covered by an existing plan, is Casey's June beetle.

For the Western Riverside County and Coachella Valley MSHCPs, the County of Riverside has (and may extend to applicants) 'take' coverage for species with critical habitat designated when the USFWS issued the MSHCPs' *FESA* Section 10 permit. Thus the plans provide for the protection of those physical and biological features essential to the conservation of the covered species in a manner consistent with USFWS's regulations concerning protection of critical habitat.

Further, the implementing agreements for both plans provide that if new critical habitat is designated within the plans' boundaries after the issuance of their Section 10 permits, then under the 'No Surprises Rule,' no subsequent evaluation of the covered species nor any mitigation, compensation, conservation enhancement or other protective measures other than those already set forth in the MSHCPs would be required. Thus, impacts to species and their critical habitat occurring within the boundaries of the WRC-MSHCP and the CV-MSHCP are fully covered under those plans.

Moreover, compliance with the MSHCPs ensures that no significant impacts to covered species or their critical habitats would occur. This is because both plans are designed such that payment of the mitigation fee and compliance with the plans' requirements provide full mitigation under CEQA, NEPA, FESA and CESA for impacts to covered species and their habitats pursuant to agreements with the USFWS, the CDFW and other participating regulatory agencies (as set forth in the implementing agreements for each of the plans).

The LCR-MSCP covers and provides for the protection of the razorback sucker, a fish species for which critical habitat has been designated in non-MSHCP areas of eastern Riverside County. As indicated in Table *4.8-L* ~~4.8-I~~, none of the future development accommodated by GPA No. 960 is proposed for along the Colorado River nor would it affect, either directly or indirectly, the razorback sucker or its critical habitat.

As noted above, the only species for which Critical Habitat has been designated in Riverside County that is not covered by a MSHCP is the Casey's June beetle. The location of Critical Habitat for Casey's June beetle is in the Coachella Valley. ~~However,~~ Casey's June beetle is not a listed species under CESA*; however~~,~~ Casey's June beetle is listed as endangered under the Federal Endangered Species Act, as of September 22, 2011. Although not protected under CESA, development within the City of Palm Springs will address protential impacts to the federally endangered Casey's June beetle. Any federal nexus (i.e., federal funding, U.S. Army Corps of Engineers Clean Water Act Section 404 Permit for impacts to Corps regulater water features)~~,~~ would trigger the need to address the loss or adverse modification to Casey's June Beetle Critical Habitat in Palm Canyon.* As indicated in Table *4.8-L* ~~4.8-I~~, future development accommodated by GPA No. 960 would not foreseeably affect, either directly or indirectly, the Casey's June beetle or its critical habitat.

2. Regulatory Compliance for Impact 4.8.B

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan Policies and existing EIR No. 441 mitigation measures would lessen significant impacts to candidate, sensitive and special status species.

a. Compliance with Federal, State and County Regulations

Compliance with the following state, federal and county regulations would reduce impacts related to candidate, sensitive and special status species.

Federal Endangered Species Act: FESA, as described in Section 4.8.3 above, ensures no take of a federally-listed species by private interests and non-federal government agencies occurs without an HCP approved by the USFWS and implemented by the permitee.

Migratory Bird Treaty Act: As indicated in Section 4.8.3 above, disturbing or destroying active nests of any native bird is a violation of the federal MBTA. Nests and eggs are also protected under CFGC Section 3503. As a result, special precautions must be taken to avoid disturbances to birds during their breeding seasons (most commonly between February and June).

Federal Clean Water Act: Section 401 of the CWA requires an applicant to obtain certification for any activity that may result in a discharge of a pollutant into waters of the United States. As a result, proposed fill in waters and wetlands requires coordination with the appropriate Regional Water Quality Control Board (RWQCB) that administers Section 401 and provides certification. The RWQCB also plays a role in review of water quality and wetland issues, including avoidance and minimization of impacts. Section 401 certification from the RWQCB is required prior to the issuance of a Section 404 permit from the Corps.

Under Section 404 of the CWA, the Army Corps has jurisdiction over wetlands and waters of the United States. A Section 404 permit is required for those activities that could discharge fill or dredge materials or otherwise adversely modify wetlands or other waters of the United States and associated habitat. Such permits are authorized by Army Corps and typically contain mitigation to offset unavoidable impacts to wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

California Endangered Species Act: CESA, as described in Section 4.8.3 above, ensures that species listed by the State of California as threatened or endangered are not jeopardized without take authorizations issued by CDFW. Such authorizations are only issued pursuant to specific conditions found in Section 2081 of CESA.

Natural Community Conservation Planning Act (NCCP): The NCCP, as described in Section 4.8.3, provides for a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. Both the WRC-MSHCP and the CV-MSHCP are NCCPs. As such, they allow for the issuance of take at the local level by permittees such as the County of Riverside, thereby streamlining the take authorization process on a project-by-project basis.

California Fish and Game Code Sections 1600-1603: The CDFW, through provisions of the Fish and Game Code Sections 1600–1603, is empowered to issue agreements (Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (Fish and Game Code section 1602[a]). Streams and rivers are defined by the presence of a channel bed and banks, and intermittent flow. The limits of CDFW jurisdiction are also based on riparian habitat and may include wetland areas that do not meet ACOE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

California Native Plant Protection Act: Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use, which would

adversely impact, listed plants. This requirement allows CDFW to salvage listed plant species that would otherwise be destroyed. Further, CDFW promulgates a 'special plants' list which identifies the plants throughout the state that are determined to be rare. This list is also included in Appendix EIR-9.

The NDDB includes sightings of species from the NPPA 'special plants' list and the species' sensitivity is evaluated and ranked by CNPS. To the extent that such rare plants occur in Riverside County, they are reflected on Table 4.8-D and Table 4.8-E. It is important to note that plant growth is dependent on or affected by factors such as geographical location, soil types, precipitation rates, angle and direction of slopes, elevations, microclimates and successional considerations. Therefore, it is not uncommon to find a particular plant or grouping of plants growing outside what would be considered their customary habitat *where* ~~if~~ some of the above factors are advantageous to that growth. Should project-specific information indicate the presence of an NPPA species, then the project proponent would be required to notify CDFW 10 days prior to grading or any other change in land use which may adversely affect the species in question.

Stephens' Kangaroo Rat Habitat Conservation Plan: GPA No. 960 would affect areas covered by the SKR HCP. As indicated in section 4.8.3 above, the SKR HCP mitigates impacts from development on the SKR by establishing a network of preserves and a system for managing and monitoring them. Future development accommodated by GPA No. 960 within the SKR HCP boundary would be required to comply with the provisions of the HCP including payment of a mitigation fee.

Western Riverside County Multiple Species Habitat Conservation Plan: The WRC-MSHCP serves as a comprehensive, multi-jurisdictional habitat conservation plan, pursuant to Section (a)(1)(B) of FESA, as well as an NCCP per the State NCCP Act. The WRC-MSHCP and the associated Implementing Agreement (IA) allows participating jurisdictions, including Riverside County, to approve development that may result in the incidental take of species and their habitat provided that development proposal adheres to the requirements of the WRC-MSHCP. As such, the County of Riverside may issue take authorizations for species covered by the plan. By paying the mitigation fee and complying with the requirements of the WRC-MSHCP, a land use project would meet their obligations with respect to CEQA, NEPA, CESA and FESA for purposes of WRC-MSHCP covered species and their habitats. As part of GPA No. 960, continued participation in the WRC-MSHCP is required and proposed land use projects would be obligated to comply with all applicable provisions of the plan if within the boundaries of the WRC-MSHCP's coverage area.

Coachella Valley Multiple Species Habitat Conservation Plan (CV-MSHCP): The County of Riverside adopted the CV-MSHCP in May 2006 and in October 2008, the federal and state wildlife agencies issued the permits and authorizations required to implement the plan. Under the plan's IA, the County of Riverside may issue take authorizations for species covered by the CV-MSHCP, including state and federally-listed species, as well as other identified covered species and their habitats. The County of Riverside imposes a development mitigation fee for projects within its jurisdiction which funds the local obligation to the CV-MSHCP. By paying the mitigation fee and complying with the requirements of the CV-MSHCP, a land use project would meet their obligations with respect to CEQA, NEPA, CESA and FESA for impacts to covered species and their habitats. As part of GPA No. 960, continued participation in the CV-MSHCP is required and proposed land use projects would be obligated to comply with applicable plan provisions if developed within the CV-MSHCP's boundaries.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would lessen significant impacts to candidate, sensitive and special status species. See Section 4.8.3.D for the full text of each policy.

Policy C 20.9: This policy would ensure that all transportation plans and development proposals reflect specific requirements of the WRC-MSHCP and the CV-MSHCP.

Policy OS 5.1: By specifying that floodway channelization is only used as a last resort, the policy would ensure that sensitive species dependent upon riparian linkages are allowed to persist rather than be lost due to development.

Policy OS 5.6: By requiring that upland habitat areas be identified and conserved to the maximum extent possible, this policy would protect the ongoing habitat function and value of riparian linkages, retain sensitive foraging areas and allow riparian dependent populations to persist rather than be lost due to development.

Policy OS 6.2: By requiring preservation of buffer zones around wetlands, this policy would assure that additional habitat is conserved for protected species that rely on riparian habitats, that edge effects are minimized and that species mortality due to such edge effects is reduced.

Policy OS 9.3: By requiring the maintenance and conservation of superior examples of native trees, natural vegetation, stands of established trees and other features for ecosystem conservation purposes, this policy would ensure that species that rely on such habitats would be protected.

Policy OS 9.4: By requiring the conservation of oak tree resources in the county, this policy would ensure that no net loss of oaks occurs. Further, it would preserve nesting and foraging habitat essential to many protected bird species.

Policy OS 20.2: By preventing the unnecessary extension of public facilities and services and utilities into Open Space-Conservation areas, this policy would reduce the fragmentation of habitat essential to the survival of protected species.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would help lessen significant impacts to candidate, sensitive and special status species. See Section 4.8.3.D for the full text of each of these policies.

Policy OS 5.3: By requiring setbacks from floodway boundaries for wildlife movement corridors or linkages, this policy ensures that sensitive species dependent upon riparian linkages are allowed to persist rather than be lost to permanent development impacts.

Policies OS 17.1, 17.2 and 18.1: By specifying that the provisions of applicable MSHCPs are enforced in the course of land use review, review of legislative actions, planning of transportation or infrastructure projects, etc., these policies codify the local conservation measures developed for 173 protected species throughout the county.

Policy OS 18.3: By prohibiting the planting or introduction of invasive, non-native species to watercourses, riparian areas and their buffers, this policy would minimize edge effects and associated species mortality.

3. Additional Project-Specific Mitigation Measures for Impact 4.8.B

Despite all of the above measures to lessen impacts to candidate, sensitive and special status species, additional project-specific mitigation measures are necessary to ensure that such impacts would be avoided, reduced or minimized to less than significant. Toward this end, two new CEQA-specific mitigation measures are proposed.

Mitigation Measure 4.8.B-N1 would require development accommodated by GPA No. 960 to assess project-specific impacts to protected species and, where necessary, mitigate such impacts through the appropriate local, state and federal regulations and permits. Mitigation Measure 4.8.B-N1 also addresses protected species not covered by the two existing MSHCPs to ensure that impacts to such are properly identified and mitigated through the appropriate local, state and federal regulations and permits. Thus, implementation of the following mitigation measures would ensure that project impacts to candidate, sensitive and special status species would be mitigated to less than significant.

NEW **Mitigation Measure 4.8.B-N1:** Prior to discretionary project approval for projects with the potential to substantially adversely affect sensitive (listed, candidate or special status) species or habitats ~~not covered by an existing MSHCP or HCP~~, a general biological resource assessment (BRA) shall be performed. The following requirements shall apply:

a. The BRA shall be performed by a Riverside County-approved biologist pursuant to a Memorandum of Understanding (MOU) executed between the biologist and the County of Riverside.

b. The biology/environmental firm or biologist preparing the BRA must be on Riverside County's list of qualified consultants.

c. Fieldwork must be performed by qualified biologists according to professional standards.

d. If included in the BRA, presence/absence surveys for specific plants must be conducted during the applicable blooming season or other conditions as deemed scientifically appropriate and valid.

e. Should affected species or habitat occur on the project site, then a "Focused Protocol Survey" must be prepared for those species using existing protocols established by the USFWS or CDFW. If no such protocols exist, the survey must be based on generally accepted biological survey protocols appropriate to the species.

The BRA requirement *may* be waived if any of the following conditions are documented to exist.

a. The area affected by the proposed project ("footprint" herein) consists entirely of built environment (structures, pavement, etc.) and none of the biota or plant material present (i.e., landscaping) represent likely habitat used by a sensitive species.

b. The Riverside County Environmental Resource Specialist (ERS) finds in writing that the proposed footprint does not have any biological resources expected to be used by a protected species or plant.

c. The project or activity proposed is to be performed under an existing incidental take permit, habitat conservation plan or other governing permit, license or authorization (i.e. Section 7 consultation) and no new significant effect to the covered species or other protected species or resource is expected to occur.

In addition to the items herein, the BRA shall also be prepared in accordance with the Riverside County "Guide to Preparing General Biological Resource Assessments," as well as any other requirements of the Riverside County Environmental Programs Department, Planning Department or other County of Riverside agency.

Upon receipt of the BRA, the Riverside County ERS shall review it and all supporting documentation. If the Riverside County ERS finds that the project does not have the potential to substantially affect sensitive species or habitat, no further mitigation is required. If the Riverside County ERS finds that the project has the potential to

substantially adversely affect sensitive species or habitat, then additional mitigation will be developed and imposed to reduce such impacts to below a level of significance. Such mitigation may include but not be limited to obtaining incidental take permits from the USFWS and/or CDFW, as applicable and acquisition and conservation of replacement habitat at appropriate ratios.

4. Findings on Significance of Impact 4.8.B

For the reasons presented above, implementation and compliance with the above-listed existing regulations, General Plan policies and local, state and federal permit requirements, as well as new Mitigation Measure 4.8.B-N1, would ensure that future development accommodated by the project, GPA No. 960, would have less than significant impacts, either directly or through habitat modification, on any species identified as threatened, endangered, candidate, sensitive or special status species in local or regional plans, policies and regulations, or by the CDFW or USFWS.

C. Would the project have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, etc.) through direct removal, filling, hydrological interruption or other means?

Impact 4.8.C – Adversely Affect Wetlands: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption or other means. Compliance with the existing laws, regulatory programs and General Plan policies, as well as new project-specific Mitigation Measures 4.8.C-N1 and 4.8.C-N2, would ensure impacts to wetlands would be less than significant.

1. Analysis of Impact 4.8.C

Federally protected wetlands are defined in Section 404 of the Clean Water Act (CWA) as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include freshwater marshes, riparian forests, riparian woodlands, open water, flood channels, rivers and stream beds and similar areas. The natural vegetation communities in unincorporated Riverside County with the potential to contain federally protected wetlands are identified in Table 4.8-N in Section 4.8.5.

Direct impacts to federally protected wetlands would occur if future development resulted in direct removal, fill (which essentially means placing dirt into), hydrological interruption or other disturbance to these resources. Such effects are often associated with clearing and grubbing, grading, paving and building for new development, redevelopment and construction of roads, flood control projects and other infrastructure.

For this analysis, areas with the potential to support federally protected wetlands were approximated by juxtaposing regional vegetation maps for Riverside County against the proposed foreseeable spatial changes associated with GPA No. 960 (as described more fully in Section 3.0). The analysis was not limited to areas where federally protected wetlands are known to occur but, rather, a wide range of riparian habitats were included. As such, this represents a conservative (or worst-case) estimate of potential impacts to federally defined wetlands. Actual impacts can only be determined through specific site surveys and project-level information, particularly jurisdictional delineation as per Corps standards.

Table 4.8-N identifies the estimated acreage of impacts to habitats likely to support federally protected wetlands within Riverside County. The analysis indicates that approximately *471,400* ~~470,800~~ acres of (broadly defined) wetlands occur in unincorporated Riverside County. *Countywide, it is estimated that the project would potentially adversely affect around 5,000 acres of wetlands.* Of this *project* total, approximately *3,910* ~~3,210~~ acres (*9%* ~~0.7%~~) fall within ~~areas of~~ western Riverside County, *430* ~~470~~ acres (*0.4%* ~~0.1%~~) are in Coachella Valley and 660 acres (*0.2%* ~~0.1%~~) are within the non-MSHCP areas of the county. Future development accommodated by GPA No. 960 may occur on*,* ~~or~~ near *or within the watershed of* any of these riparian habitats. Conservatively assuming all qualify as federally protected wetlands, *the 5,000-acre* ~~a~~ total *that* ~~of roughly 4,340 acres (less than 1.0%)~~ may be assumed to be directly affected as a result of the proposed project *represents roughly 1% of the wetlands in Riverside County*.

Determination of specific locations and acreages actually affected would have to be performed at the implementation stage as future development proposals are submitted to the County of Riverside. Where subsequently determined to occur, impacts to federally protected wetlands would be addressed as per the programmatic measures outlined herein. Such measures would include compliance with County of Riverside programs, state and federal regulations, General Plan policies and CEQA specific mitigation measures, as outlined below. Adherence to these measures shall ensure that wetlands are not adversely affected by future implementing project development. Thus, impacts to federally protected wetlands would be less than significant.

2. Regulatory Compliance for Impact 4.8.C

As detailed below, compliance with the following existing laws, regulatory programs, General Plan policies would lessen adverse effects to federally protected wetlands.

a. Compliance with Federal, State and County Regulations

Several federal, state and local regulations would reduce impacts related to substantial adverse effects on federally protected wetlands. All of which are summarized below:

Federal Clean Water Act: Where they meet Corps guidelines, many wetland communities (e.g., freshwater marshes, riparian forests, riparian woodlands, open water, flood channels, rivers and streambeds) within western Riverside County would be subject to the federal Clean Water Act (Sections 401, 402 and 404) as regulated by federal agencies. Projects proposing to affect federally protected wetlands would be required to obtain a Section 404 permit prior to grading. This applies to sites both within and outside of the MSHCP coverage areas. The Corps shall also continue to consult with the USFWS pursuant to Section 7 of the FESA on projects that may affect federally listed species within Corps jurisdictional wetlands or waters or potentially affected by the Corps issuance of a Section 404 permit. Since Corps permits must ensure no net loss of riparian habitat and preservation of biological function and value of any jurisdictional waters on site, compliance with Corps Section 404 requirements would ensure that no wetlands are significantly affected.

California Fish and Game Code Sections 1600-1603: Many wetland communities within Riverside County include areas subject to California Fish and Game Code Section 1600 *et seq*., as regulated by the CDFW. Streams and rivers are defined by the presence of a channel bed and banks, and intermittent flow. The limits of CDFW jurisdiction are also based on riparian habitat and may include wetland areas that do not meet Corps wetland criteria due to soils or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils). Thus, development sites with riparian habitat or drainages present would have to be delineated as part of the Riverside County project development process. Where affected by a proposed development, a streambed/bank alteration agreement must be obtained from the CDFW prior to grading. The CDFW shall continue to work closely with the Corps, USFWS and the County of Riverside to

ensure that the Fish and Game Code Section 1600 agreements are designed to fully mitigate impacts to wetlands. The County of Riverside would also ensure that any permits needed are consistent with the mitigation required by the WRC-MSHCP or the CV-MSHCP.

Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP): As indicated previously, the WRC-MSHCP serves as a comprehensive, multi-jurisdictional habitat conservation plan, pursuant to FESA Section (a)(1)(B) and as a Natural Communities Conservation Plan (NCCP) under the State NCCP Act. The MSHCP identifies the requisite studies and land use considerations necessary to protect riparian areas within western Riverside County and outside of the criteria cells that contribute to the function and value of the reserve system and the sensitive habitats conserved therein. Pursuant to Section 6.1.2 of the WRC-MSHCP, proposed projects require assessment of potentially significant effects on any riparian/riverine areas or vernal pools. The assessment must be performed per County of Riverside, MSHCP, CDFW and Corps standards, then be provided to and reviewed by a Riverside County biologist.

Where not included in a WRC-MSHCP Conservation Area, applicable requirements (which may include federal and state regulations) shall be imposed by the County of Riverside. As part of MSHCP compliance, the County of Riverside first looks to avoid, or at least minimize, direct and indirect effects to the mapped wetlands. If avoidance is feasible, then measures are incorporated into the project design to ensure the long-term conservation of the areas to be avoided. If avoidance is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools and their associated functions and values to the greatest extent possible is selected. Additionally, Section 6.1.4 of the WRC-MSHCP sets forth a range of measures to eliminate, reduce or minimize edge effects associated with the interface between development and the natural environment. These also aid in reducing indirect impacts to wetlands.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan lessen substantial adverse effects on federally protected wetlands. See Section 4.8.3.D for the full text of each of these policies.

Policy LU 9.2: This policy would help prevent impacts to riparian and other sensitive habitats by requiring developments to comply with federal and State regulations pertaining to federally protected wetlands.

Policy OS 5.1: By allowing channelization of floodways only as a last resort, this policy would ensure that federally protected wetlands are allowed to persist rather than be lost due to development impacts.

Policy OS 5.6: By requiring that upland habitat areas be identified and conserved to the maximum extent possible, this policy would protect the ongoing habitat function and value of federally protected wetlands allowing them to persist rather than be lost due to permanent development impacts.

Policy OS 6.1: By requiring compliance with the Clean Water Act's Section 404 process, this policy would assure no net loss of federally protected wetlands.

Policy OS 6.2: By requiring preservation of buffer zones around wetlands, this policy would assure that additional habitat is conserved and that potential edge effects to federally protected wetlands were reduced.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would also help to lessen adverse effects to federally protected wetlands. See Section 4.8.3.D for the full text of each of these policies.

Policy LU 7.7: By requiring buffers between development and watercourses, including their associated habitat, this policy would ensure that federally protected wetlands and their associated habitat(s) are allowed to persist rather than be lost to permanent development impacts.

Policy LU 9.1: By requiring that development provide for the preservation of open space that contain natural resources including arroyos and canyons, this policy would see that sensitive riparian and upland habitats which contribute to federally protected wetlands are allowed to persist rather than be lost due to permanent development impacts.

Policy OS 5.2: By requiring that modifications to floodways be designed to reduce adverse environmental effects, this policy would ensure that more floodways within the county are designed to conserve federally protected wetlands.

Policy OS 5.5: Requiring that development preserve and enhance existing riparian habitat and prevent obstruction of natural watercourses, this policy would ensure the function and value of federally protected wetlands.

Policy OS 17.1, 17.2 and 18.1: By specifying that the provisions of applicable MSHCPs are enforced in the course of County land use review, review of legislative actions, planning of transportation or infrastructure projects, etc., these policies codify the local conservation measures developed for MSHCP-protected wetland resources throughout western Riverside County.

Policy OS 18.3: By prohibiting the planting or introduction of invasive, non-native species to watercourses, riparian areas and their buffers, this policy would minimize edge effects to wetlands.

Policy OS 18.4: By establishing specific standards for management of watercourses on private conservation easements, this policy would institute clear expectations concerning the elimination of edge effects, preservation of wildlife movement, minimization of fuel modification areas and identification of a permanent management entity.

3. Additional Project-Specific Mitigation for Impact 4.8.C

Despite all of the above measures to lessen adverse effects on federally protected wetlands, additional project–specific mitigation measures would be necessary to further avoid, reduce or minimize impacts. Toward this end, two new CEQA-specific measures are proposed. New Mitigation Measure 4.8C-N1 would ensure that, in areas of Riverside County not already regulated by the WRC-MSHCP, a jurisdictional assessment is performed to determine if a project site may support federally protected wetlands and, where impacts to such wetlands are unavoidable, require a 404 permit to be obtained from the ACOE. Similarly, new Mitigation Measure 4.8C-N2 would address state protected wetlands pursuant to CFGC Section 1600 *et seq.*

NEW **Mitigation Measure 4.8.C-N1:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by Section 404 of the CWA, then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process. An assessment shall include, but not be limited to, identification

and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal.

Should any grading or construction be proposed within or alongside the banks of the watercourse or wetland, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the alteration of any watercourse or wetland, located either on site or on any required offsite improvement areas, complies with the U.S. Army Corp of Engineers Nationwide Permit Conditions. Or, the land divider shall obtain a permit under Section 404 of the Clean Water Act. Copies of any agreements shall be submitted along with the notification.

NEW **Mitigation Measure 4.8.C-N2:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by CFGC section 1600 *et seq*., then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process. An assessment shall include, but not be limited to, identification and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal.

Should any grading or construction be proposed within or along the banks of any natural watercourse or wetland located either on site or on any required offsite improvement areas, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the appropriate California Department of Fish and Game Wildlife notification pursuant to Sections 1601/1603 of the California Fish and Game Code has taken place. Or, the land divider shall obtain an "Agreement Regarding Proposed Stream or Lake Alteration" (Section 1601/1603 Permit). Copies of any agreements shall be submitted along with the notification.

4. Finding on Significance of Impact 4.8.C

For the reasons presented above, implementation and compliance with the above-listed existing regulations and General Plan policies as well as new Mitigation Measures 4.8.C-N1 and 4.8.C-N2, would ensure that development accommodated by GPA No. 960 would have less than significant impacts on federally protected wetlands. Additionally, the imposition of other proposed/revised General Plan policies discussed above would further reduce this insignificant impact.

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact 4.8.D – Impede Species Movement, Migration, Wildlife Corridors or Use of Wildlife Nursery Sites: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in the county, adversely affecting movement, migration, wildlife corridors and the use of native wildlife nursery sites. Compliance with existing laws, regulatory programs and General Plan policies, as well as new project-specific Mitigation Measures 4.8.B-N1 and 4.8.D-N1, would ensure that this impact is less than significant.

1. Analysis of Impact 4.8.D

Future development accommodated by GPA No. 960 would result in creation of new barriers to animal movement in the urbanizing portions of the county, namely western Riverside County and Coachella Valley; however, impacts to wildlife movement would be mitigated through the establishment of corridors and linkaes established by the WRC-MSHCP and the CV-MSHCP, as described below. Within the non-MSHCP areas, particularly the easternmost third of the county, future development would be scattered and of lower densities. As a result, no significant interference with wildlife movement, corridors or nursery sites is expected within the non-MSHCP areas.

As part of the WRC-MSHCP, a system of corridors and linkages has been established to accommodate wildlife movement within the open areas of western Riverside County. The plan includes 20 core areas and 10 noncontiguous habitat blocks linked together by 19 linkages and 29 constrained linkages. These are described more fully within the WRC-MSHCP, Section 3.2.3: Cores and Linkages within the MSHCP Conservation Area. Additionally, the Clarifications and Corrections to the MSHCP (May 2004) and the plan's USFWS Biological Opinion (June 2004) incorporate two additional Special Linkages into the WRC-MSHCP. The Pass Area Plan Special Linkage is located in the northeast plan area and connects the San Jacinto Mountains to the San Bernardino Mountains via San Gorgonio Wash. The Southwest Area Plan Special Linkage connects the area between the Santa Margarita Ecological Reserve and the Pechanga Indian Reservation.

In the Coachella Valley, the CV-MSHCP establishes conservation areas and articulates objectives and measures for the preservation of core habitat and the biological corridors and linkages needed to maintain essential ecological processes within the plan area. For example, one biological corridor with two undercrossings is identified for the Stubbe Canyon Wash under Interstate 10, two corridors are located at Whitewater and San Gorgonio Rivers under Highway 111, a linkage and a corridor are identified for the Whitewater River area under Interstate 10, another biological corridor exists at Mission Creek under Highway 62, two are located at Mission Creek and Willow Wash under Interstate 10 and there are five biological corridors within the Desert Tortoise Linkage Conservation Area under Interstate 10.

While none of the corridors and linkages within the WRC-MSHCP or the CV-MSHCP is mapped at a resolution that would allow a spatial analysis of the potential effects of GPA No. 960, intensified development in these areas would have the potential to result in direct or indirect impacts. Direct impacts to wildlife movement corridors generally occur from blockage or interference with the connectivity between blocks of habitat, a decrease in the width of a corridor or linkage that constrains movement, or the loss of visual continuity within a linkage or corridor. Even when not directly constrained by development, corridors are also vulnerable to edge effects and human encroachment as well. Nonetheless, sufficient programs are in place within both MSHCPs that would prevent substantial interference with wildlife movement and corridors. With the corridor conservation measures, edge effect controls and other components of the two plans to ensure protection, provisions of the WRC and CV MSHCPs would ensure that future development within western Riverside County and the Coachella Valley does not substantially interfere with wildlife movement or corridors.

Official corridor and linkage designations have not been established for the non-MSHCP areas. However, only two spatially identifiable sites exist at which GPA No. 960 would propose land use modifications. Each site is located in the East County – Desert Area Plan and is described in Section 3.0 of this EIR. The first site is a 4.8-acre private holding located within the Joshua Tree National Park. GPA No. 960 proposes to change the existing land use designation (which was applied in error in 2003) from OS-CH to OS-RUR. The net allowable land use would be one residence per 20 acres. The second site consists of land use changes required by the ALUC near the Blythe Airport and encompasses approximately 443 acres within the Palo Verde Valley Area Plan. GPA changes to this area include updated text, tables and figures to more accurately represent airport compatibility

zones and the airport influence area. Because of the densities involved, neither of these two GPA No. 960 changes would interfere substantially with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors. Impacts are considered less than significant.

Wildlife nursery sites include areas that provide the resources necessary for reproduction of a species, including foraging habitat, breeding habitat and water sources. Direct impacts to nursery sites from implementation of GPA No. 960 would include removal of habitat for development and infrastructure. Indirect impacts to nursery sites would have the potential to result from noise, lighting and changes in drainage patterns, introduction of pests or domestic animals and other edge effects. These impacts can substantially interfere with native wildlife nursery sites. Determining whether or not a specific area is a nursery site requires field surveys, which are often only valid for a given breeding season depending on the wildlife species present. Although a literature search failed to uncover any published data to indicate the presence of wildlife nursery sites within Riverside County, it is nonetheless expected that such sites exist. Therefore, it is reasonably foreseeable that future development accommodated by GPA No. 960 could have the potential to directly or indirectly affect nursery sites.

In their role as natural community conservation plans, the WRC-MSHCP and the CV-MSHCP were required by State and federal permitting authorities to provide for the movement of species, protect wildlife corridors and facilitate genetic flow. The MSHCPs protect native wildlife nursery sites by conserving large blocks of representative native habitats suitable for supporting species' lifecycle requirements and the essential ecological processes of species which depend on such habitats. The EIR for the WRC-MSHCP concluded that the plan provides for the movement of species through established wildlife corridors and protects the use of native wildlife nursery sites. Thus, through the protections afforded by the WRC and CV MSHCPs, future development accommodated by GPA No. 960 would have a less than significant impact on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or the use of native wildlife nursery sites within western Riverside County and the Coachella Valley. Within the non-MSHCP areas, the low density/intensities proposed and large amounts of open space would serve to limit potential impacts to less than significant.

2. Regulatory Compliance for Impact 4.8.D

As detailed below, compliance with the following existing laws, regulatory programs and General Plan policies would lessen significant impacts to species movement, migration, wildlife corridors and use of native wildlife nursery sites.

a. Compliance with Federal, State and County Regulations

Compliance with the following State, federal and County regulations would lessen significant impacts to species movement, migration, wildlife corridors and use of native wildlife nursery sites.

Federal Endangered Species Act: As indicated previously, HCPs are required for projects which impact listed and non-listed species. An HCP is a plan which outlines ways of maintaining, enhancing and protecting a given habitat type needed to protect species. The plan includes measures to minimize impacts and provisions for permanently protecting land, restoring habitat and relocating plants or animals to another area. HCP's may capture habitat(s) that support the lifecycle of the species in question and therefore may provide protections for native nursery sites, corridors and linkages. An HCP is required before an incidental take permit may be issued.

Migratory Bird Treaty Act: As noted previously, the WRC-MSHCP and CV-MSHCP take permits constitute Special Purpose Permits pursuant to the MBTA. Specifically, the biological opinion for the WRC-MSHCP

stipulates that covered activities must comply with the MBTA and clearing of habitat be avoided during the active breeding season within the Criteria Areas and Public/Quasi Public Lands. For purposes of the MSHCP, the breeding season is defined as March 1 to June 30.

The biological opinion issued for the CV-MSHCP indicates that take of covered species listed under FESA which are also MBTA species is subject to the terms and conditions specified in the CV-MSHCP section 10(a) Permit. Any such take does not violate the MBTA. For other birds protected by the MBTA and not listed under the FESA, no take is authorized under the MBTA (including killing and wounding of any such birds, or take of eggs and active nests). For these, standard MBTA compliance measures would be required.

Federal Clean Water Act: Under section 404 of the CWA, the Corps has jurisdiction over wetlands and waters of the United States. A section 404 permit is required for those activities that could discharge fill or dredge materials or otherwise adversely modify wetlands or other waters of the United States and associated habitat. Such permits are authorized by Corps and typically contain mitigation to offset unavoidable impacts to wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values. Streams and rivers are often utilized as wildlife corridors and linkage areas.

California Endangered Species Act (Fish and Game Code 2050 *et seq*.): Should state threatened or endangered species be found on a future development site, take authorization from the CDFG would be required for any unavoidable impact to a State-listed species. The CDFG may authorize incidental take to endangered species, threatened species and candidate species. For western Riverside County and the Coachella Valley, the WRC-MSHCP and the CV-MSHCP received state take authorizations pursuant to the NCCPA and allow for the issuance of such take at the local level by permittees, such as the County of Riverside.

Natural Community Conservation Planning Act: As noted previously, both the WRC-MSHCP and the CV-MSHCP are NCCPs. As such, they provide for the conservation of species and the natural communities on which they depend for their life-cycle needs. The WRC-MSHCP and the CV-MSHCP both allow for the issuance of take at the local level by permittees, including the County of Riverside, thereby streamlining the take authorization process on a project-by-project basis. Compliance with these requirements would ensure the regional wildlife corridors and movement areas identified in these two plans are adequately protected from future development.

California Fish and Game Code Sections 1600-1603: The CDFG, through provisions of the CFGC Sections 1600–1603, is empowered to issue agreements (Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (CFGC Section 1602[a]). Streams and rivers are often utilized as wildlife corridors and linkage areas.

Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP): The WRC-MSHCP is based on the concept of creating linkages (wildlife corridors) between core areas (reserves). The mechanism for creating the linkages is obtained through conservation within the Criteria Areas. As indicated in the above analysis, the plan is based on securing numerous corridors and linkages links between core reserves. Future development accommodated by GPA No. 960 would be subject to the provisions of the WRC-MSHCP, as described previously in Impact 4.8.B. Thus, compliance with the WRC-MSHCP would ensure the protection of wildlife corridors, movement areas and nursery sites within western Riverside County.

Coachella Valley MSHCP (CV-MSHCP): The CV-MSHCP is also based on the concept of creating linkages (wildlife corridors) between core areas (reserves). The mechanism for creating the linkages is obtained through

conservation within the Criteria Areas. The overall provisions for the plan are subdivided according to specific resource conservation goals organized by geographic areas defined as conservation areas. These areas are identified as Core, Essential or Other Conserved Habitat for sensitive plant, invertebrate, amphibian, reptile, bird and mammal species, plus Essential Ecological Process Areas and Biological Corridors and Linkages. Each conservation area has specific conservation objectives that must be satisfied. Future development accommodated by GPA No. 960 would be subject to the provisions of the CV-MSHCP as described previously in Impact 4.8.B. Thus, compliance with the CV-MSHCP would ensure the protection of wildlife corridors, movement areas and nursery sites within Coachella Valley.

Stephens' Kangaroo Rat Habitat Conservation Plan: The SKR HCP is based on the concept of maintaining adequate habitat for the long-term survival of the Stephens' kangaroo rat. The mechanism for maintaining such habitat is obtained through payment of a fee that is used by Riverside County to acquire and manage habitat suitable for the species. Compliance with this plan would protect the movement needs of this species.

b. Compliance with Existing Riverside County General Plan Policies

The following existing General Plan policies would lessen impacts to species movement, migration, wildlife corridors and use of native wildlife nursery sites. See Section 4.8.3.D for full text of each.

Policy C 20.9: This policy would ensure that all transportation plans and development proposals reflect specific requirements of the WRC-MSHCP and the CV-MSHCP.

Policy OS 5.1: By specifying that floodway channelization is only used as a last resort, the policy would ensure that sensitive species dependent upon riparian linkages are allowed to persist rather than be lost due to development.

Policy OS 5.6: By requiring that upland habitat areas be identified and conserved to the maximum extent possible, this policy would protect the ongoing habitat function and value of riparian linkages, retain sensitive foraging areas and allow riparian dependent populations to persist rather than be lost due to development.

Policy OS 6.2: By requiring preservation of buffer zones around wetlands, this policy would assure that additional habitat is conserved for protected species that rely on riparian habitats, that edge effects are minimized and that species mortality due to such edge effects are reduced.

Policy OS 9.3: By requiring the maintenance and conservation of superior examples of native trees, natural vegetation, stands of established trees and other features for ecosystem conservation purposes, this policy would ensure that the species that rely on such habitats would be protected.

Policy OS 9.4: By requiring the conservation of oak tree resources in Riverside County, this policy would ensure that no net loss of oaks occurs. Further, it would preserve nesting and foraging habitat essential to many protected bird species.

Policy OS 20.2: By preventing the unnecessary extension of public facilities and services and utilities into Open Space-Conservation areas, this policy would reduce the fragmentation of habitat essential to the survival of protected species.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would lessen significant impacts to candidate, sensitive or special status species. See Section 4.8.3.D for the full text of each of these policies.

Policy OS 5.3: By requiring setbacks from floodway boundaries for wildlife movement corridors and linkages, this policy would ensure that sensitive species dependent upon riparian linkages are allowed to persist rather than lost due to development impacts.

Policies OS 17.1, 17.2 and 18.1: By specifying that the provisions of applicable MSHCPs must be enforced in the course of Riverside County land use review, review of legislative actions, planning of transportation or infrastructure projects, etc., these policies codify the local conservation measures developed for MSHCP-protected species throughout Riverside County.

Policy OS 18.3: By prohibiting the planting or introduction of invasive, non-native species to watercourses, riparian areas and their buffers, this policy would minimize edge effects and associated species mortality.

3. Additional Project-Specific Mitigation for Impact 4.8.D

Despite all of the above measures that lessen impacts to wildlife movement and nurseries, additional project-specific mitigation measures are necessary to further avoid, reduce or minimize impacts to ensure they are less than significant. Mitigation Measure 4.8.B-N1, as described previously under Impact 4.8.B, would lessen the impact by requiring a BRA to determine if a proposed project may contain sensitive or protected species or habitat for which additional assessment and/or mitigation would be necessary. Mitigation Measure 4.8.D-N1 (below) would lessen the impact by requiring a Riverside County ERS to make a determination if a wildlife nursery or corridor is essential to the long-term viability of a species and take steps to avoid or minimize project-specific effects to the resource. Implementation of these mitigation measures would ensure that project impacts to wildlife movement and nursery sites are mitigated to less than significant.

NEW **Mitigation Measure 4.8.D-N1:** Should a wildlife nursery site or native resident or migratory wildlife corridor be uncovered through a biological resources assessment (BRA), then a consultation with a Riverside County Ecological Resources Specialist (ERS) shall occur. The ERS shall make a determination if the site is essential for the long-term viability of the species. If such a determination is made, then the ERS shall work with the applicant to avoid the effects of development on the resource in question and condition the land use case accordingly. Should significant impacts to nursery site or corridor not be avoidable, project applicant shall be required to ensure the preservation of comparable nursery or corridor habitat offsite.

4. Findings on Significance of Impact 4.8.D

For the reasons presented above, implementation and compliance with the above-listed existing regulations, plans and General Plan policies, as well as new Mitigation Measures 4.8.B-N1 and 4.8.D-N1, would ensure that future development accommodated by the project, GPA No. 960, would have less than significant impacts on wildlife nurseries, species movement, migration and wildlife corridors.

E. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or State habitat conservation plan?

Impact 4.8.E – Conflict with Adopted Habitat Conservation Plans: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, including areas covered by adopted HCPs, in particular the WRC-MSHCP and the CV-MSHCP. Compliance with the provisions of these MSHCPs would ensure that future development accommodated by GPA No. 960 is consistent with the plans and that this impact is less than significant.

1. Analysis of Impact 4.8.E:

As explained above, the WRC-MSCHP and the CV-MSHCP (also permitted as NCCPs) apply to land use activities within western Riverside County and the Coachella Valley. The MSHCPs are the cornerstones of Riverside County's General Plan Open Space and Conservation Element. As such, policies within the General Plan specifically require compliance with existing MSHCPs to ensure that that there are no conflicts with local biological resource protections. In addition, the SKR HCP remains in effect for the majority of western Riverside County. Although the reserve land is acquired for this HCP, a mitigation fee is still collected on new development to ensure the long-term maintenance and monitoring of the reserves. GPA No. 960 does not make any changes to how these HCPs are implemented nor does it change the steps required to comply with said HCPs.

Future development accommodated by GPA No. 960 would be required, through Riverside County-required conditions of approval, to comply with applicable fee ordinances relevant to the implementation of specific programs that protect biological resources thereby reinforcing compliance with applicable resource protection policies. For example, Riverside County Ordinance No. 663 requires development projects within the SKR HCP area to pay a development mitigation fee to establish the reserves, administer the plan and otherwise meet the requirements of the SKR HCP. Similarly, Riverside County Ordinances No. 810 and No. 875 require land use projects within the coverage areas of those plans to pay a development impact fee to establish reserves and implement the respective conservation plans.

Additional adopted HCPs are located within the County of Riverside but apply to other agency/ special district activities. Examples include the Southwest Riverside County MSHCP, the Lake Mathews MSHCP and the LCR-MSCP. None of these conservation plans would apply to future development accommodated by GPA No. 960 nor does GPA No. 960 appear to interfere with the conservation or preservation of existing lands within these HCPs nor interfere with future reserve assembly. For instance, the LCR MSCP extends over 400 miles of the lower Colorado River, includes areas of Blythe within the 100-year floodplain and addresses at least 26 species but the plan only covers activities related to water diversion and conveyance, electric power generation and transmission facilities and appurtenant works that support these facilities. Development accommodated by GPA No. 960 does not in fall within or adjacent to any conservation or refuge areas established by the LCR MSCP for Reach 4. However, ALUC land use changes described in Section 3.0 of this document may affect a small portion of the westerly reaches of the MSCP area within Blythe near the intersection of North Neighbors Boulevard and Interstate 10. As with the other two MSHCPs, any future development proposed within the LCR-MSCP's coverage area would be required through project conditions of approval to comply with the plan.

There are numerous federal and state regulations in place to ensure that adopted HCPs, NCCPs and other conservation plans are successful. The combination of local programs and conditions of approval requirements as well as federal and state programs, would ensure that conflicts with provisions of the adopted HCPs, NCCPs

and other approved habitat conservation plans in effect within unincorporated Riverside County are less than significant.

2. Regulatory Compliance for Impact 4.8.E

As detailed and explained below, compliance with the following existing laws, regulatory programs, ordinances and General Plan policies, would ensure that impacts to adopted HCPs, NCCPs and other approved habitat conservation plans as a result of GPA No. 960 are less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following state, federal and county regulations would prevent significant impacts to adopted habitat conservation plans.

Migratory Bird Treaty Act: The biological opinion issued for the CV-MSHCP indicates that take of covered species listed under FESA which are also MBTA species is subject to the terms and conditions specified in the CV-MSHCP Section 10(a) Permit. Any such take does not violate the MBTA. For other birds protected by the MBTA and not listed under the FESA, no take is authorized under the MBTA (including killing and wounding of any such birds, or take of eggs and active nests). For these, standard MBTA compliance provisions would apply.

Natural Community Conservation Planning Act: Both the WRC-MSHCP and the CV-MSHCP are NCCPs. As such, they provide for the conservation of species and the natural communities on which they depend for their life-cycle needs. The WRC-MSHCP and the CV-MSHCP allow for the issuance of take at the local level by permittees, includes the County of Riverside, thereby streamlining the take authorization process on a project-by-project basis for impacts within western Riverside County and the Coachella Valley.

Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP): Biological effects of development within western Riverside County would be mitigated to less than significant levels through compliance with the WRC-MSHCP. As detailed above, a number of Riverside County General Plan policies, as well as Ordinance No. 810 and standard project conditions of approval are required by the County of Riverside. Through implementation of these measures, future development compliance and consistency with the WRC-MSHCP would be assured.

Coachella Valley MSHCP (CV-MSHCP): Biological effects of development within Coachella Valley would be mitigated to less than significant levels through compliance with the CV-MSHCP. As detailed above, a number of Riverside County General Plan policies, as well as Ordinance No. 810 and standard project conditions of approval are required by the County of Riverside. Through implementation of these measures, future development compliance and consistency with the CV-MSHCP would be assured.

Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP): Effects on the Stephens' Kangaroo Rat of development within the boundaries of the SKR HCP would be mitigated to less than significant levels through compliance with the SKR-MSHCP. As detailed above, a number of Riverside County General Plan policies, as well as Ordinance No. 663 and standard project conditions of approval are required by the County of Riverside. Through implementation of these measures, future development compliance and consistency with the SKR-MSHCP would be assured.

b. Compliance with Existing Riverside County General Plan Policies

The following existing policies of the Riverside County General Plan, C 20.9, OS 5.1, 5.6, 6.2, 9.3, 9.4 and 20.2, would lessen conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or state habitat conservation plan for the reasons previously indicated under Impact 4.8.B. See Section 4.8.3.D for full text of each policy.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan, OS 5.3, 17.1, 17.2, 18.1 and 18.3, would lessen conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or state habitat conservation plan for the reasons previously indicated under Impact 4.8.B. See Section 4.8.3.D for full policy texts.

3. Findings on Significance of Impact 4.8.E

With implementation of the above-listed regulations, ordinances, plans and General Plan policies, GPA No. 960 would have less than significant impacts on the adopted HCPs, NCCPs in effect within unincorporated Riverside County and other approved local, regional or state habitat conservation plans.

F. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact 4.8.F – Conflict With Local Biological Resource Protection Policies or Ordinances: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. In some locations this could result in conflicts with local policies and ordinances protecting biological resources, such as Riverside County's Oak Tree Management Guidelines, for example. Compliance with existing laws, regulatory programs, Riverside County Ordinance No. 559 and General Plan policies would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.8.F

Where future development accommodated by GPA No. 960 would affect protected biological resources, such as the Riverside County Oak Tree Management Guidelines, there is the potential for conflicts between growth and biological needs.

As presented in Table 4.8-M, in Section 4.8.5 above, future development accommodated by GPA No. 960 could affect approximately *5,300* ~~5,290~~ acres out of roughly *68,100* ~~59,830~~ acres of natural community associations known to support oak woodlands. Impacts to oaks occur primarily within the WRC-MSHCP area and represent approximately *8%* ~~8.8%~~ of the countywide oak woodland habitat. Oaks may be indirectly affected by construction activities if such activities are unable to avoid 100% of a tree's 'protected zone' and project-specific hydrological alterations that could affect long-term viability of oak resources. Conflicts with Riverside County's Oak Tree Management Guidelines would be eliminated, however, by project conditions of approval requiring compliance with the Guidelines wherever qualifying oak resources are found to occur (e.g., through a BRA, etc.).

With respect to prospective conflicts between this ordinance and future development, biological resource protection is also afforded by Riverside County Ordinance No. 559, which regulates the removal of trees. In

regards to trees and forest resources, as analyzed in Section 4.5 (Agriculture and Forestry), foreseeable components of GPA No. 960 include two sites with forestry resources. These sites total roughly 77 acres and are located in the San Jacinto Mountains. See Section 4.5.5.C for full details on these areas. To ensure compliance with Ordinance No. 559, all projects found (i.e., via a BRA, etc.) to have qualifying trees that would be removed as part of the project shall be required through conditions of approval to comply with this ordinance.

2. Regulatory Compliance for Impact 4.8.F

As detailed below, compliance with the following existing laws, regulatory programs and General Plan policies are sufficient to ensure that potential conflicts with local biological resources regulations as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following state, federal and county regulations and guidelines would prevent potential conflicts with local biological resource regulations.

Riverside County Oak Tree Management Guidelines: Riverside County's Oak Tree Management Guidelines address the treatment of oak woodlands in order to reduce potential adverse development impacts to oak trees and their protected zones. By requiring applicants proposing developments on those sites where oak tree resources exist to provide biological studies, onsite vegetation inventories, mitigation and monitoring plans as wells as design plans that avoid oak trees and their protected zones when feasible, potential impacts to this biological resource would be reduced to less than significant levels. Although the majority of the plans that are consistent with the guidelines would reduce potential development impacts to less than significant levels, the guidelines do not exempt projects from CEQA. Compliance with the guidelines would also reduce potential conflicts with oak woodland protection policies and laws. Application of these management guidelines during the course of the normal development review and/or as a condition of approval would ensure that future development accommodated by GPA No. 960 does not conflict with Riverside County's Oak Tree Management Guidelines and that oaks are adequately protected.

Riverside County Ordinance No. 559 - Regulating the Removal of Trees: Ordinance No. 559 regulates the removal of native trees from lots that are at a minimum one-half acre in size and that are located above 5,000 feet in elevation in unincorporated Riverside County. The goal of the ordinance is to further ensure the preservation of Riverside County's timberlands. Applicants proposing the removal of those native trees that meet the ordinance's conditions would be required to file a separate application with the Planning Department for an approval, conditional approval or denial for the removal of trees. Application of this ordinance during the course of the normal development review process and/or through project conditions of approval would ensure that future development accommodated by GPA No. 960 does not conflict with local policy concerning timberlands management.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would prevent significant conflicts with policies and regulations protecting biological resources such as oak trees and timberlands. See Section 4.8.3.D for the full text of each of these policies.

Policies OS 9.3 and 9.4: By providing for the maintenance and preservation of natural trees and vegetation, including oak trees, for ecosystem, aesthetic and water conservation purposes, these policies would reduce conflicts between development and oak trees and forest resources.

3. Finding on Significance of Impact 4.8.F

The analysis presented above indicates that future development accommodated by GPA No. 960 would have less than significant impacts due to inconsistencies with local policies and ordinances for biological resources. In addition, compliance with the above-listed existing regulatory programs and General Plan policies would further reduce or avoid this insignificant impact.

4.8.7 Significance After Mitigation for Biological Resources

Implementation of and compliance with the above regulations, Riverside County General Plan policies and project-specific mitigation measures would ensure that significant impacts to known biological resources, as described in Section 4.8.4, are either avoided or minimized to less than significant. Specifically, compliance with existing laws and policies, as well as project-specific Mitigation Measures 4.8.A-N1, 4.8.A-N2, 4.8.B-N1, 4.8.C-N1, 4.8.C-N2 and 4.8.D-N1 would ensure that significant biological resources are appropriately identified and protected. Lastly, the General Plan policies and mitigation measures presented herein would ensure that the biological impacts of future development accommodated by GPA No. 960 are minimized and that they do not conflict with local biological resources policies or habitat conservation plans. Together these measures ensure that any significant adverse impacts to biological resources resulting from future development accommodated by GPA No. 960 would be mitigated to below the level of significance.

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Section 4.9

Cultural and Paleontological Resources

Section 4.9
Cultural and Paleontological Resources

4.9.1 Introduction

This section assesses the potential impacts on cultural resources that could arise from disturbances and impacts resulting from development consistent with the proposed project, General Plan Amendment No. 960 (GPA No. 960). Cultural resources include areas, places, sites (particularly archeological sites), buildings, structures, objects, records, or manuscripts associated with history or prehistory. Some specific examples of cultural resources are pioneer homes, buildings, or old wagon roads; structures with unique architecture or designed by a notable architect; prehistoric Native American village sites; pioneering ethnic settlements; historic or prehistoric artifacts or objects, rock inscriptions, human burial sites; battlefields; railroad water towers; prehistoric trails; early mines or important historic industrial sites. Cultural resources may also include places that have historic or traditional associations or that are important for their natural resources. Cultural resources are important for scientific, historic and, at times religious, reasons to cultures, communities, groups and individuals.

Paleontological resources (evidence of past life forms and their biota) are valued for the information they yield about the history of the earth and its past ecological settings. Although not human-related, paleontological resources are also included in this section, as their impacts and mitigation requirements tend to be similar to that of archeological resources. On rare occasion, fossils have been found in archeological sites that have been modified by man, making them also artifacts.

4.9.2 Existing Setting - Cultural and Paleontological Resources

The cultural resource characteristics of Riverside County reflect patterns of human settlement, human use of the land and its resources, the artistic expressions on material culture and natural features, technologies and ideologies, as well as past environmental conditions. The existing paleontological setting reflects the paleontological record and related geology as they are currently known for Riverside County. This sub-section includes information summarized from Section 4.6 of the 1999 "Existing Setting Report" prepared for the 2003 RCIP General Plan.

A. Cultural / Ethnological Resources

The cultural history of Riverside County is divided into two general chronological units: prehistory and the historic time periods which include ethnohistoric information. "Prehistory" encompasses the period of earliest human activities prior to the keeping of written records and spans over 99% of the total extent of human society. Due to the lack of written sources for this period, archeological study is key to its understanding. In Southern

California, the prehistoric period refers only to Native American traditions, beginning with the settlement of the Southern California region at least 10,000 to 12,000 years ago and extending forward through time to initial Euro-American settlement in the late 18th century when the mission system was established, disrupting native life ways. Nearly a century later, between 1875 and 1891, at least ten Indian reservations were set aside in Riverside County and nearby vicinities. Most indigenous tribal people ~~natives~~ were moved to these reservations, further disrupting and largely ending, the persistence of traditional Native American life ways. The historic era began around 1774 with the exploratory expeditions of Juan Bautista de Anza and continued to 45 years before the present day, ~~(currently 1966)~~ as defined by CEQA.

1. Prehistory

Riverside County environmental conditions during the late Pleistocene and Holocence periods fostered an ecologically rich region for human settlement. This 14,000-year period of human occupation was marked by an overall trend toward increasing aridity and warmer temperatures, with some temporary reversals as well as periods of climatic stability. As environmental conditions changed, Native American populations adapted with modifications in settlement patterns, subsistence practices, social organization and technology.

Three primary geomorphic provinces are found in Riverside County: the Mojave Desert, the Colorado Desert and the Peninsular Ranges. The diverse prehistoric landscape and habitats of the internally drained basins and pluvial (landlocked) lakes of the Mojave Desert region, the fresh water lakes of the Colorado Desert and the prominent ranges of the Peninsular Range were used by ancient and indigenous groups of people, leaving a rich archeological heritage. The following artifacts and features are characteristic of the Prehistoric Period: ceramics, projectile points of many types, grinding implements (mortars and pestles, metates and manos), enigmatic cogstones, shell, bone, clay beads and pendants, evidence of big game hunting. Additional background information on these types of artifacts may be found in Section 4.7 of EIR No. 441, the EIR associated with the 2003 RCIP General Plan. The EIR No. 441 section also contains an extensive introduction to the cultural timelines associated with the Prehistoric Period.

Due to the thousands of years spanned by the Prehistoric Period, the impermanence of many indigenous material goods and the widely scattered and varying itinerant patterns of settlement, the prehistoric archeological record tends to be less clearly defined and more sporadically preserved than that of later eras. Nevertheless, a large number of prehistoric resources are known or expected to occur within Riverside County. When uncovered as a result of an archeological investigation or development activities, such resources are, at minimum, documented and entered into a statewide recording system (CHRIS, the California Historical Resources Information System). These records are archived and maintained by the Eastern Information Center (EIC) located at the University of California at Riverside (UCR), a branch of the California Office of Historical Preservation. Of these recorded sites within Riverside County, a few have been designated as federal, state and/or county cultural resources as shown in Table 4.9-A (Cultural Resources of Riverside County), below. A number of sites, however, are protected in the confidential archives of the EIC and are not publicly accessible to protect and preserve their scientific and cultural value.

2. Ethnohistory

The Ethnohistoric Period of Riverside County at the time of Euro-American contact was distinguished by eight distinct resident cultural groups of Native Americans: Cahuilla (primarily), Gabrielino, Juaneño, Luiseño, Quechan, Halichidhoma, Chemehuevi and Serrano. These groups occupied territories across Southern California generally as indicated in Figure 4.9.1 (Southern California Tribal Territories). It should be noted that territorial boundaries did change for some tribal groups throughout time. The majority of western Riverside County was

occupied by the Cahuilla who spoke a Cupan language within the Takic family of the Uto-Aztecan language stock. The western part of the county, in the vicinity of the Santa Ana Mountains fell within the territory of the Gabrielinos, Juaneños and Luiseños who also spoke Cupan languages. These three populations had territories that extended from the coast eastward and northeastward across the Santa Ana and Palomar mountains, encompassing Temescal Valley and Lake Elsinore, and extending toward the foothills of the San Jacinto and Santa Rosa Mountains.

Table 4.9-A: Cultural Resources of Riverside County[1]

	Cultural Resource	NRHP[1]	CSHL	CPHI	RCHL	Location	Theme[2]
Prehistoric Period (Before 1772)							
1	Andreas Canyons	X				Palm Springs, Riverside	AG, A/L,
2	Archeological Sites (CA-RIV-504 and CA-RIV-773)	X				Blythe, Riverside	ARC, A/L, IP
3	Blythe Intaglio	X				I-10 to Highway 95, 13 miles north of Blythe	EV, IP
4	Buttercup Farms Pictograph	X				Perris, Riverside	A/L, IP
5	Carved Rock		X		X	I-15 to Temescal Canyon road, view from road right of way	NA, IP
6	Coachella Valley Fish Traps	X			X	I-10 to Chuckawalla Valley Road, south to Corn Springs Road, 8 miles to campground	ARC, IP
7	Giant Desert Figures		X			On Highway 95, 16 miles North of Blythe	NA, A/L
8	Gus Lederer Site	X				Desert Center, Riverside	ARC, A/L, REL, IP
9	Hemet Maze Stone		~~X~~		X	From Hwy 74, go N 3.2 miles on California Ave to Maze Stone Park (site located Approx. 0.3 mile past gate), near Hemet.	IP
10	Indian Canyons				X	Take S. Palm Canyon from Hwy 11 to the Indian Canyons Toll Gate	NA
11	McCoy Spring Archeological Site	X				Blythe, Riverside	A/L, IP
12	Murrieta Creek Archeological Area	~~X~~				Temecula, Riverside	IP
13	North Chuckwalla Mountain Petroglyph District (CA-RIV 1383)	X				Desert Center, Riverside	IP
14	North Chuckwalla Mountain Quarry Dist.	X				Desert Center, Riverside	IP
15	Painted Rock		X		~~X~~	From Temescal Canyon Rd, east on Dawson Canyon Road, south along railroad track berm	NA, IP
16	Site of Indian Village of Pochea		X		~~X~~	Ramona Bowl, 27400 S Girard St, Hemet; plaque near restrooms.	NA, IP
17	Tahquitz Canyon	X				500 West Mesquite, Palm Springs	IP, AG, REL
Exploration Period (1772-1818)							
18	Coachella Valley Preserve				X	I-10 to Ramon, east to Thousand Palms Canyon Road, north to Thousand Palms Oasis	E/S
19	Site of De Anza Camp ~~and Crossing~~		X			S/Terwilliger on Coyote Cyn.	E/S
20	Site of De Anza Crossing of the Santa Ana River		X		X	Jurupa Heights; plaque located between clubhouse and #1 tee, Jurupa Hills Country Club Golf Course, 6161 Moraga Ave, Rubidoux.	E/S
21	Site of Indian Wells, Indian Wells			X	~~X~~	17 miles SE on SR111	W, E/S

[1] *Table 4.9-A was entirely revised based on updated Cultural Resource information available for the County*

	Cultural Resource	NRHP[1]	CSHL	CPHI	RCHL	Location	Theme[2]
Mission Period (1769-1833)							
22	Dos Palmas			X	X	S/SR 111, Parkside Dr exit	W, E/S, T
23	Old Temescal Road		X			On Old Hwy 71, 0.9 mi S of I-15 junct w/ Temescal Cyn Rd, 11 mi S of Corona	E/S
24	Serrano Boulder		X			From I-15, take Old Temescal Cyn Rd S 0.4 mi to Lawson Rd, go W 0.2 mi. Follow remains of dirt rd (on E side of creek) So. 0.1 mi toward willow trees. 9 mi S of Corona	E/S
25	Serrano Tanning Vats		X		X	NE corner of I-15 and Old Temescal Canyon Rd, 8 mi SE of Corona	E/I, NA
26	The Original Palm Springs			X	X	NE corner of Indian Avenue	W,A/L,E/S
Mexican / Rancho Period (1833-1848)							
27	Bandini Adobe Site			X	X	1000 feet W of Hamner Ave., Norco	E/S
28	Bandini-Cota Adobe			X	X	Prado Flood Control Basin, Corona	E/S
29	Mount Rubidoux			~~X~~	X	7th St. and Mt. Rubidoux Dr., Riv.	E/S, REL
30	Rancho Santa Rosa		~~X~~	X	X	W/ Murrieta on Clinton-Keith Rd., Murrieta	E/S
31	Site of Louis Rubidoux House		X	~~X~~	~~X~~	5575 Mission Blvd, Riverside	E/S
32	Site of Old Rubidoux Grist Mill		X	~~X~~	~~X~~	5540 Molina Way, Rubidoux	E/S
33	Trujillo Adobe			X	~~X~~	W/I-215, N/Center, on Orange Ave., Riverside	E/S
Early California Period (1848 - 1869)							
34	Blythe Ferry Crossing, Bradshaw Ferry Crossing			X	~~X~~	I-10 to Rivera Drive, Blythe Marina	W, T
35	Corn Springs	X		X	~~X~~	S/I-10 to Corn Springs Road, Desert Center	NA, W, E/S
36	First Post Office, Temecula			X	~~X~~	28636 Front Street, Temecula	GOV
37	Frink Ranch			X	~~X~~	W/10, N/60 on Timoteo Canyon, near El Casco	E/S, T
38	Jensen-Alvarado Ranch / Cornelius and Mercedes Jensen Ranch	~~X~~	X			4307 Briggs, Rubidoux	ARC, E/S, EV
39	Pinacate Mining District, ~~Pinacate~~ *Orange Empire Railway Museum*			X	X	*I-215 to Highway 74 West to A Street*	*E/I*
40	Ruins of Third Serrano Adobe		X			S/E corner, I-15 and Temescal Cyn Rd	E/S
41	Saahatapa		X			Brookside Rest Area, W-bound I-10, 3 mi W of junction of I-10 and Hwy 60	E/S, NA
42	Site of Butterfield Stage Station		X		X	20730 Temescal Canyon Road, Corona	E/S, T
43	Southern Hotel	X				445 South D Street, Perris	ARC, E/I
44	Temescal Tin Mines			X	~~X~~	E/I-10, N/Cajalco, Corona	E/I
45	Toro Village			X	~~X~~	S/I-10, to end of Jackson, Indio	NA, T, E/S
46	Weaver Adobe			X	X	10055 Avenida Miravilla, Banning	E/S
47	Whitewater			X	X	S/I-10, ½ mile E of SR 111, Banning	E/S, T
Early Statehood Period (1869 - 1919)							
48	*A Pedley-Type Dam*			*X*		*Banning Canyon via San Gorgonio Ave., Banning*	*E/I*
49	Administration Building, Sherman Institute	X				9010 Magnolia Ave, Riverside	ARC,E/S, NA
50	All Souls Universalists Church	X				3657 Lemon St., Riverside	REL
51	*Amory Hall*				*X*	*252 North Main Street, Lake Elsinore*	*ARC, E/S*
52	Arlington Library and Fire Hall	X				9556 Magnolia Ave., Riverside	ARC, EV
53	Armory Hall, Grand Army of the Republic Building	X		X		252 N. Main Street, Lake Elsinore	ARC, MIL

	Cultural Resource	NRHP[1]	*CSHL*	CPHI	RCHL	Location	Theme[2]
54	Banning Women's Club			X	X	175 W. Hayes St., Banning	E/S
55	Barker Dam	X				N/I-10, SR62, to Utah Trail	W, E/S
56	Beaumont Carnegie Library			X	~~X~~	125 E Eighth Street, Beaumont	ARC
57	Blythe Intake Site		X	X		Intake service, US Hwy 95, 10.5 mi N of Blythe at entrance to Palo Verde Diversion Dam	W, E/I
58	Camp Emerson			X	X	243 to West Canyon Dr, to McKinney Lane	E/S
59	Carnegie Andrew Library	X				S/E corner of Main St and 8th St , Cor.	ARC, EV
60	Chinatown	X		X	~~X~~	Brockton and Tequesquite, Riverside	ETH
61	Citrus Experiment Station			X	X	University of California, Riverside	E/S, E/I
62	Citrus Machinery Pioneering			X	X	Corner of Vine and Birtcher, Riverside	E/I
63	*Citrus State Historic Park*				*X*	*9400 Dufferin Avenue, Riverside*	*AG*
64	Coachella Valley Water District			X	~~X~~	Avenue 52 and SR111, Coachella	W, E/I
65	Coplin House, Spokane Hotel, Plueger Reality			X	~~X~~	12 S. San Gorgonio Ave., Banning	E/S
66	Corona High School	X				815 W. 6th St, Corona	ARC, EV
67	Cottonwood Oasis	~~X~~			*X*	N/I-10, SR 62, to Utah Trail	W, E/S
68	Cottonwood School			X	X	1 mi N of CR 3 and SR79, Sage	E/S
69	Crescent Bath House	X		~~X~~	~~X~~	Corner of West Graham, Lake Els.	ARC, A/L
70	Desert Inn			*X*	~~X~~	NW Corner of Palm Canyon and Tahquitz, Palm Springs	A/L
71	Desert Queen Mine	X				N/I-10, SR62, to Utah Trail	E/I , EV
72	Elsinore's "Hottest" Sulphur Spring	*X*		~~X~~	~~X~~	Graham at Spring St., Lake Elsinore	A/L
73	Estudillo Mansion	X				150 S. Dillon, San Jacinto	E/S, GOV
74	First Church of Christ, Scientist	X				3606 Lemon St., Riverside	ARC
75	First Congregational Church of Riverside	X		~~X~~	~~X~~	3504 Mission Inn Ave., Riverside	ARC
76	Garbani Rocco Homestead	X				33555 Holland Rd., Winchester	EV,ARC,E/S,IP
77	Gilman Ranch	X		X	~~X~~	N/10, E/22st,on Wilson St	E/S, W, T, EV, IP, NA
78	Hall City and Hall's Grade			X	~~X~~	N slope of San Jacinto S/I-10 around Cabazon	E/I
79	Hamilton School, First Little Red School House			X	X	56481 Cahuilla Road, Anza	E/S
80	Harada House	X				3356 Lemon St., Riverside	ETH, EV, GOV
81	Hemet Dam and Lake Hemet			X	X	1 mile E of 243 and SR74, Hemet	W, E/I
82	Hemet Depot/*Hemet Museum*~~, Atchison, Topeka and Santa Fe Railroad Depot~~			~~X~~	*X*	*Highway 74 to State Street, northwest corner*	*T, ARC*
83	Henderson/Reid Building			X	X	N/E corner of San Gorgonio and Livingstone, Banning	E/S
84	Heritage House	X				8193 Magnolia Ave., Riverside	ARC
85	Highgrove Hydroelectric Plant			X	~~X~~	W/Iowa, S/Center, Electric and W Spring, Riverside	E/I, W
86	Highland Springs			X	X	N/10, 5 miles on Highland Springs Ave., Banning	T,A/L
87	Idyllwild			X	~~X~~	County Park Rd, 1 mile N of SR 243, Idyllwild	A/L
88	John W. North Park, Seventh Street Historic District			X	X	Mission Inn Ave at Vine St., Riv.	GOV
89	*Loring Building*				*X*	*3685 Main Street*	*ARC, GOV*
90	Loring Opera House			X	~~X~~	3745 Seventh St, Riverside	ARC, A/L
91	Lost Horse Mine	~~X~~			*X*	N/I-10, SR62, to Utah Trail, within Joshua Tree National Monument	E/I

	Cultural Resource	NRHP[1]	CSHL	CPHI	RCHL	Location	Theme[2]
92	March Air Musuem				X	22550 Van Buren Blvd	T, GOV
93	March Field Historic District	X*		X	~~X~~	I-215 at Van Buren Blvd., Riverside	MIL
94	Martinez Historic District, Martinez Indian Agency, Indian School Agency Office	X		X	X	S/SR111, W/Ave 66 to Martinez Rd, Thermal	NA, E/S
95	Masonic Temple	X				3650 Eleventh St., Riverside	ARC
96	Mission Inn Hotel	X	X	~~X~~	X	3649 Mission Inn Ave. Riverside	ARC, A/L
97	Noble's Ranch			X	~~X~~	Singleton Cyn. off San Timoteo Cyn.	E/S
98	Old YWCA Building	X				3225 7th Street, Riverside	ARC, E/S
99	Palmdale Railroad Site, "A Railroad that Failed"			X	~~X~~	248 E. Ramon Road, Palm Springs	T, E/S
100	Parent Washington Navel Orange Tree	~~X~~	X		X	SW corner Magnolia Avenue, E/Arlington, Riverside	E/I, W/S
101	Perris Depot	X				120 W. Fourth St., Perris	ARC, E/S, T
102	Peter Weber House	~~X~~			X	1510 University Ave, Riverside	ARC
103	Riverside Cement Company			X	~~X~~	N/60, 1500 Rubidoux, Riverside	E/I
104	Riverside County Courthouse			X	X	4050 Main Street, Riverside	ARC, GOV
105	Riverside Federal Post Office	X				SE corner Orange Ave and 7th St., Riv.	ARC, GOV
106	Riverside-Arlington Heights Fruit Exchange	X				3397 7th Street, Riverside	ARC, E/I
107	Ryan House and Lost Horse Well	X			X	N/I-10, SR62, to Utah Trail, 29 Palms	E/S,W,ARC
108	Saint Boniface Indian School			X		14700 Manzanita Park Rd, Beaumont	E/S
109	San Pedro, LA and Salt Lake Railroad Depot	X			X	3751 Vine St., Riverside	ARC, T
110	San Timoteo Canyon Schoolhouse	X		X	~~X~~	W/10, N/60 on San Timoteo Cyn, Calimesa	NA, E/S
111	Shaver's Well			X	~~X~~	Box Canyon, 12 mi NE of Mecca	W, E/I
112	Sutherland Fruit Company	~~X~~	X			NE Corner 7th and Vine	ARC, E/I
113	Temecula Old Town Historic District				X	Front St. between 1st and 6th. E/S	
114	Temecula Quarries			X	~~X~~	Monument at Front Street, in Sam Hicks Park, Temecula	E/I
115	Thomas-Garner Ranch			X	~~X~~	SR 74, across hwy from Lake Hemet Store, Idyllwild	E/S
116	U.S. Experimental Date, Date Industry Birthplace			X	~~X~~	National Ave between Grand and Johnson, Mecca	E/I
117	Victoria Avenue	X				Myrtle Ave. SW 7 mi, at Boundary Lane, Riverside	A/L
118	Wiley's Well			X	X	N/I-10 at Wiley Well exit, Blythe	W, E/I
119	William Childs House	X				1151 Monte Vista Dr., Riverside	ARC
120	Woman's Improvement Clubhouse	X				SE corner of Main and 10th, Corona	ARC, E/S
121	Yerxa's Discovery (at Cabot's Pueblo Museum)			X	X	67616 E Desert View, Desert Hot Springs	W, E/S
Post-WWI to War II Period (1920-1945)							
122	Blythe Depot~~, Atchison, Topeka and Santa Fe Railroad Depot~~			~~X~~	X	I-10 to Lovekin Road, north to Rice Street, east to intersection with commercial street	T, E/I
123	Bogart House			X	~~X~~	545 Euclid Ave., Beaumont	E/S, ARC
124	Camp Young Desert Training Center, CAMA			X	X	28 mi E of Indio, off I-10 N at Chiriaco Summit. Second plaque 0.2 mi N of I-10 on Cottonwood Springs, then 7/8 mi E on dirt road.	MIL
125	Corona Civic Center				X	91 Freeway to Main Street	ARC, GOV
126	Corona Theater	~~X~~			X	NE corner Ramona and Sixth, Corona	ARC, A/L
127	Eagle Mountain Iron			X	~~X~~	35 miles E of Indio next to Desert Center Cafe	E/I

	Cultural Resource	NRHP[1]	CSHL	CPHI	RCHL	Location	Theme[2]
128	El Mirador Hotel and Tower			X	X	1150 N Indian Avenue	A/L
129	Elsinore Woman's Club			X		710 W Graham Avenye, Lake Elsinore	ARC, A/L
130	Fox Theater				X	3801 Mission Inn Avenue, Riverside	ARC, A/L
131	Galleano Winery, Cantu Ranch	X		X	~~X~~	4231 Wineville Road, Riverside	ARC, E/I
132	Lake Norconian Club	X				Junct. of 5th and Western Ave, Norco	EV, ARC, E/S
133	M.H. Simon Undertaking Chapel	X				SW corner of 11th and Orange, Riv.	ARC
134	Martinez Canyon Rockhouse	~~X~~				BLM, Palm Springs South Coast Resource Area, N Palm Springs	ARC
135	Mission Court Bungalows	X				On 1st and 2nd Streets, between Lime and Lemon Ave.s, Riverside	ARC
136	Moorten Botanical Garden				X	1701 S. Palm Canyon, Palm Springs	AG, A/L
137	Old City Hall				X	3612 Mission Inn Avenue, Riverside	ARC, GOV
138	Old Moreno School			X	X	28780 Alessandro Blvd.	E/S
139	Palm Canyon Theater*					538 N. Palm Canyon Drive, Palm Springs	A/L, EV
140	Railway Depot		X		X	3750 Santa Fe Avenue, Riverside	T
141	Ramona Bowl and Ramona Pageant		X			27400 Ramona Bowl Rd., Hemet	A/L
142	Riverside Municipal Auditorium and Soldier's Memorial Building	X				3485 7th St., Riverside	ARC, A/L
143	Site of Contractor's General Hospital		X			Next to post office, Ragsdale Road, Desert Center	E/I
144	Smiley Place	X		~~X~~	X	82616 Miles Ave, Riverside	ARC
145	Soviet Transpolar Landing Site		X	~~X~~	~~X~~	On Cottonwood, 0.2 mi W past intersection with Sanderson St., W of San Jacinto	GOV
146	Speed of Light Experiment			X	~~X~~	Pine Cove Rd, N of SR 243, Idyllwild	E/I
147	University Heights Jr. High School	X				2060 University Ave., Riverside	ARC
148	Valerie Jean Date Garden, Russell Nicoll Home, Ol' King Solo			X	X	Avenue 66 and SR 86, Thermal	E/I

Footnotes:

1. Key to Listing Source:
   - NRHP: National Register of Historic Places
   - CSHL: California State Historical Landmark
   - CPHI: California Points of Historic Interest
   - RCHL: Riverside County Historical Landmarks
2. Key to Themes:

AG:	Agriculture	ETH:	Ethnic	NA:	Native American
A/L:	Arts and Leisure	EV:	Event	REL:	Religion
ARC:	Architecture	GOV:	Government	T:	Transportation
E/I:	Economic/Industrial	IP:	Information Potential	W:	Water
E/S:	Exploration/Settlement	MIL:	Military		

Source: Riverside County, EIR No. 441, Section 4.7, 2003. California State Parks Office of Historic Preservation, Database and Guide to the Historic Landmarks of Riverside County, accessed October 2014.

The eastern part of Riverside County was strongly influenced by the presence of the Colorado River. Three indigenous cultures were present in this area at the time of Euro-American contact: the Halchidhoma, Quechan and Chemehuevi. The first two spoke languages belonging to the Colorado Branch of the Yuman family of the Hokan language stock. The Chemehuevi spoke a language belonging to the Numic family of the Uto-Aztecan language stock. Except for the Washo, Numic languages were the only ones spoken throughout the Great Basin at the time of Euro-American contact. Directly north of the Cahuilla, the Serrano occupied a large territory that encompassed much of San Bernardino County, edging southward into Riverside County. The Serrano spoke a language classified within the Serran group of the Takic family of the Uto-Aztecan language stock. See Section 4.7 of EIR No. 441 for further background on these ethnological groups and cultures.

As with the Prehistoric Period, a large number of ethnohistorical resources are also known or expected to occur within Riverside County. When uncovered as a result of an archeological investigation, such resources are, at minimum, documented and entered into the statewide recording system maintained by the EIC. In many cases, when artifacts can be tied to a specific cultural group, such as a Tribe or Band, they may be returned to that tribe for final disposition, if they are not curated. Of the known ethnohistorical sites that occur within Riverside County, a few have been listed for special protections, as shown in Table 4.9-A and depicted in Figure 4.9.2 (Historical Resources). The locations of most sites, however, are not publicly available to protect them from disturbance and preserve their scientific and cultural values.

B. Historical Era

As generally defined and used in archeology, the advent of written documentation of events separates the Historic Era from the Prehistoric Period. In Riverside County, the Historic Era is generally said to begin around 1772, with the European exploration of the western coasts of North America. Key events associated with the Historic Era include: first European contact with Southern California (1772-1818); establishment and proliferation of the Spanish missions (1769-1833); Mexican overthrow of Spanish rule in 1821, followed by the Rancho Period as Mission control ceded to private land ownership; the Treaty of Guadalupe Hidalgo, which ended the Mexican-American War in 1848 and lead to California becoming a U.S. territory; the early Californian Period, around 1850 when California officially entered the Union as a free state; the growth period following statehood, increasing pace after the 1865 end of the U.S. Civil War; expansion, settlement and development, particularly of transportation, agriculture and water infrastructure from about 1870 to 1920, including incorporation of the County of Riverside on May 9, 1873; and an additional wave of growth, particularly suburban, following World War II. Again, see EIR No. 441's Section 4.7 for additional details on the history of early California.

As with both the Prehistoric and Ethnohistoric Periods, a large number of cultural resources from the Historic Era are known or expected to occur within Riverside County. In general, the historical resources known to occur within Riverside County are better documented due to several variables that differ from the earlier eras. As settlement patterns became more and more fixed, systems of documentation became more regularized and increasingly preserved. Thus, there is a greater body of "historical record" from which historical resources may be ascertained, rediscovered and documented. Also, the modern era has seen the development of a greater ethos of preservation, in which a historical (or prehistorical) resource is recognized as having informational value in its own right. As a result, many more sites have been documented and preserved when identified. And, of course, many historic structures and sites dating from only the last century or so are extant (still standing), with many buildings still being used.

Starting in the 1930s, the preservation of historical (and prehistorical/archeological) resources became systemized through a number of state and federal regulations (as described below). Once a resource is "listed" pursuant to one of these regulations, it becomes subject to various levels of additional protection to help preserve the resource for the enjoyment and use of future generations. Thus, Table 4.9-A provides a catalog of the various cultural resources that have been listed within Riverside County. In many cases, the resource is located within a city.

Because of the vast size of Riverside County, Table 4.9-A only includes known listed sites/resources within the county recognized at the various level indicated and should not be considered exhaustive or exclusive. In particular, the potential exists for sites in the county to have previously unknown archeological and historical resources present either on the surface or below ground.

1. Archeological Sensitivity

As mentioned above, it is expected that a large number of archeological and historical resources occur within Riverside County that are currently undiscovered or unknown. This is particularly true for resources that are located below the ground's surface. For sub-surface resources, discovery most often only occurs if the site is disturbed, such as through archeological investigation, or as more commonly happens, when construction activities such as grading or trenching are initiated.

2. Paleontological Resources

Fossils, which are nonrenewable paleontological resources, are important for dating sedimentary rocks and thus determining the time of movement of faults against which those sediments lie. Eastern and western Riverside County have fossiliferous sediments that occur in various settings. In the western portion of Riverside County, fossils occur in sediments lying on the surface of crystalline bedrock or are deposited in or between the major fault zones. The eastern desert portions of Riverside County are marked by fault block mountains that contain older fossil-bearing sediments with younger fossil-containing deposits found around dry lakes, along high stands of the Salton Sea and in terraces left by the Colorado River. The geological eras represented by the fossil records found in Riverside County are briefly summarized as follows, and as shown in Table 4.9-B (Paleontological Resources by Age, Formation and Location), below.

C. Geological Layers

The oldest fossils in California are from the Proterozoic Age, dating to 900 million years ago. However, no fossils from this Age are currently known to occur in Riverside County. It is thought that in this portion of Southern California, fossils earlier than the Jurassic Period may have been destroyed by the natural processes of metamorphism (geological changes in the rocks and soils). The oldest fossils actually found in Riverside County date from the Late Jurassic Period (150 million years ago). By the Late Cretaceous Period, at the end of the Age of Dinosaurs, fossils found include ammonites, clams and giant oysters.

The Cenozoic Era, the Age of Mammals, is divided into the Tertiary Period (65 million years to 2 million years) and the Quaternary Period, which includes the Pleistocene (2 million years to 10 thousand years) and the Holocene (10,000 years ago to present). The Tertiary Period records depositional events where continental sediments mixed with marine sediments. These important fluctuations in sea level are recorded in the Elsinore Fault Zone in western Riverside County and in the Salton Trough in eastern Riverside County. Riverside County has yielded notable finds of large fossils from the Tertiary Period including whales, sharks, primitive elephants and oreodonts, camels and horses.

During the Quaternary Epoch, Riverside County was affected by increased Pleistocene rainfall which filled basins and fault zones and turned depressions into lakes. The influx of new sediment buried remains of large and small animals. Deposition of fossiliferous sediment occurred along the margins of the Salton Sea and along the Colorado River. The climate changed drastically ten thousand years ago from the end of the wet Pleistocene to the very dry Holocene. The record of changing plants and animals is preserved as mummified samples in the nests built by pack rats.

D. Fossil Record

Riverside County has an extensive record of fossil life. Key resources known to occur in Riverside County are listed in Table 4.9-B, below. The record starts in Jurassic times, 150 million years ago, with diverse marine mollusks. The oldest Tertiary flora in Southern California is found east of Lake Elsinore and dates to around 60 million years ago. Fossils of 23 million-year-old oreodonts and camels, as well as camel tracks, were found in the Orocopia Mountains in central Riverside County.

Marine advances are recorded in Corona and the Salton Trough. Marine sandstones of the Imperial Formation in the Salton Trough are found as far northwest as Cabazon. Three million years ago, near the present Interstate 15/Highway 91 interchange, a white sand beach lapped at the edge of the Pacific Ocean. The subsequent Ice Ages left fossils of giant sloths, mammoths, camels and bison that were preyed upon by giant bear, American lion and sabercats.

Table 4.9-B: Paleontological Resources by Age, Formation and Location

Era	Western Riverside County	Central Riverside County	Eastern Riverside County
Mesozoic Era: The Age of Dinosaurs			
Jurassic Period - 150 million years ago	The Bedford Canyon Formation in western Riverside County has been dated by a distinctive fauna of ammonites, brachiopods and mollusks as Late Jurassic in age.		
Late Cretaceous Period - 75 million years ago	The Ladd Formation contains Holz Shale which has yielded large ammonites and giant clams distinctive to that time period. Dinosaurs have not yet been found in Riverside County, but are likely to occur in this unit, which encompasses the Santa Ana Mountains. Hadrosaur bones from a duck bill dinosaur have been found in nearby Santiago Canyon in Orange County.		
Cenozoic Era: The Age of Mammals			
General	Western Riverside County has a long Tertiary record of marine advances and retreats. The fossiliferous marine sediments interfinger with sediments from the continent which contain land mammals. This record spans from 65 million years to 2 million years ago.	The fossils in central Riverside County are located on the bedrock isthmus between troughs of marine advances in western and eastern Riverside County. In part, the marine advances were simultaneous and only 40 miles apart.	The Tertiary record of eastern Riverside County includes Eocene marine fossils and the earliest record of Miocene land mammals in Riverside County. Deposition of late Miocene and early Pliocene marine sediments and their fossils have separate histories in the San Jacinto and San Andreas Fault Zones and along the Colorado River.
Paleocene Epoch- 65 to 55 million years ago	The Martinez Formation, marine and non-marine siltstone, sandstone and coal north of Lake Elsinore, contains Riverside County's oldest known fossil flora. The Silverado Formation in southwestern Riverside County and Temescal Canyon consists of non-marine silty sands that grade upward into marine sediments containing diverse molluscan fauna.		
Eocene Epoch - 55 to 34 million years ago	The Santiago Formation crops out in Santa Ana Canyon. The marine and non-marine sandstone contains abundant marine mollusks.		The Orocopia Mountains contain marine clams, snails and foraminifera. The Andreas Fault has caused these sediments to move 200 miles away from their counterparts in the Tejon Pass.

Sources: County of Riverside, EIR No. 441, Section 4.7, 2003. Bortugno, E.J., and Spittler, T.E., Geologic Map of the San Bernardino Quadrangle: California Division of Mines and Geology, Regional Geologic Map Series, Map No. 3A, Scale 1:250,000, 1986.

1. Paleontological Sensitivity

Figure 4.9.3 (Paleontological Sensitivity) identifies the sensitivity of lands within Riverside County in relation to the potential for finding paleontological resources. The Paleontological Sensitivity map classifies lands into the

categories below. It should be noted that the map does not substitute for site-specific investigations, as deemed necessary.

a. Low Potential

Lands for which previous field surveys and documentation demonstrate as having a low potential for containing significant paleontological resources subject to adverse impacts. The mapping of low potential was determined based on actual documentation and was not generalized to cover all areas of a particular rock unit on a geologic map.

It must be noted that surface geology, such as soils, are not always indicative of subsurface geology or the potential for paleontological resources. For instance, an area mapped as soil type "Qal" may actually be a thin surficial layer of non-fossiliferous sediments which covers fossil-rich Pleistocene sediments. Also, an area mapped as granite may be covered by a Pleistocene soil horizon that contains fossils. Thus, actual sensitivity must be ultimately determined by both a records search and a field inspection by a paleontologist.

b. Undetermined Potential

Areas underlain by sedimentary rocks for which literature or unpublished studies are not available have undetermined potential for containing significant paleontological resources. These areas need to be inspected by a qualified vertebrate paleontologist before a specific determination of high potential or low potential can be assigned.

c. High Potential

Sedimentary rock units with high potential for containing significant non-renewable paleontological resources include rock units in which vertebrate or significant invertebrate fossils have been found or determined likely to be present. These units include, but are not limited to, sedimentary formations which contain significant non-renewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. High sensitivity includes not only the potential for yielding abundant vertebrate fossils, but also for production of a few significant fossils that may provide new and significant data. High sensitivity areas are mapped as either "High A" or "High B," according to the following criteria:

High Sensitivity A: High A is based on geologic formations or mapped rock units that are known to contain or have the correct age and depositional conditions to contain significant paleontological resources. These include rocks of Silurian or Devonian age and younger that have potential to contain remains of fossil fish, and Mesozoic and Cenozoic rocks that contain fossilized body elements and trace fossils such as tracks, nests and eggs.

High Sensitivity B: High B is a sensitivity equivalent to High A, but is based on the occurrence of fossils at a specified depth below the surface. This category indicates fossils that are likely to be encountered at or below 4 feet of depth and may be impacted during construction activities.

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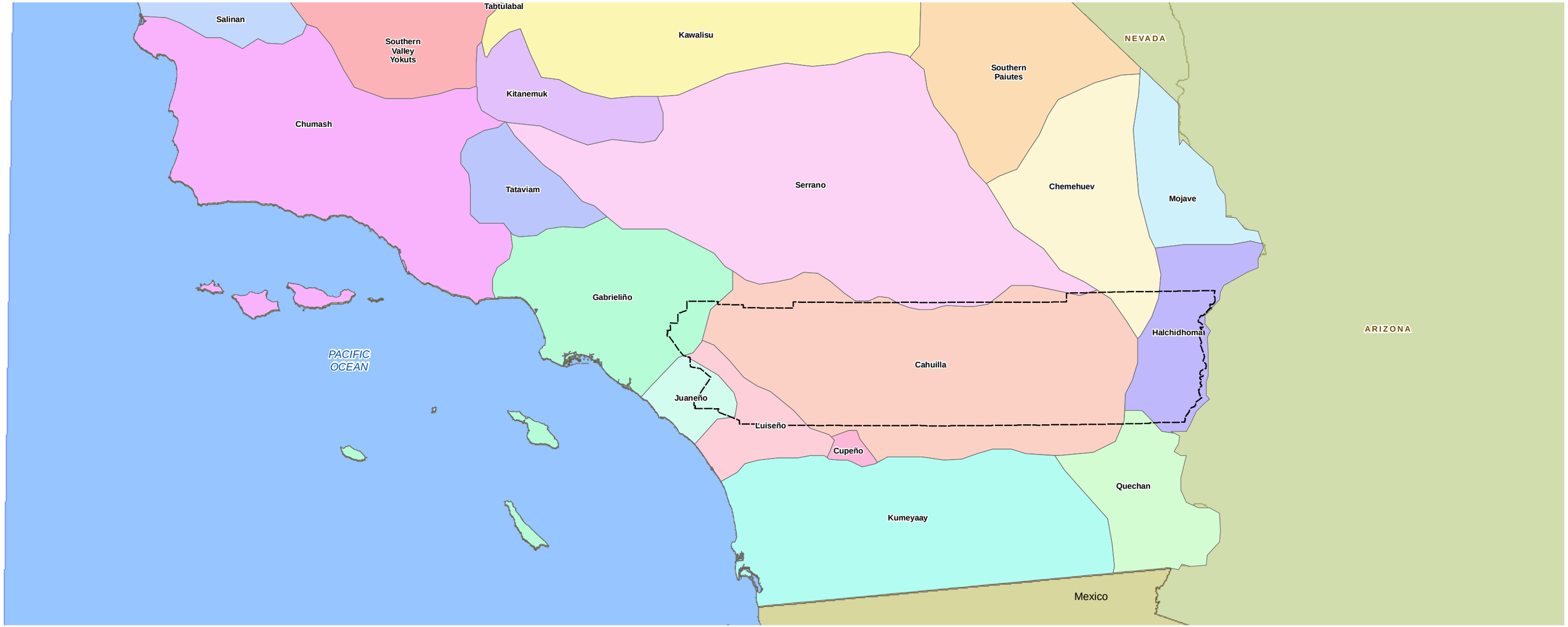

Data Source: Pacific West Traders, Tribal Areas of California Map (2006)

Cahuilla
Chemehuev
Chumash
Cupeño
Foothill Yokuts
Gabrieliño
Halchidhoma
Juaneño
Kawalisu
Kitanemuk
Kumeyaay
Luiseño
Mojave
Quechan
Salinan
Serrano
Southern Paiutes
Southern Valley Yokuts
Tabtulabal
Tataviam
Riverside County

Figure 4.9.1

December 16, 2013

Miles
0 25 50

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

SOUTHERN CALIFORNIA TRADITIONAL TRIBAL AREAS

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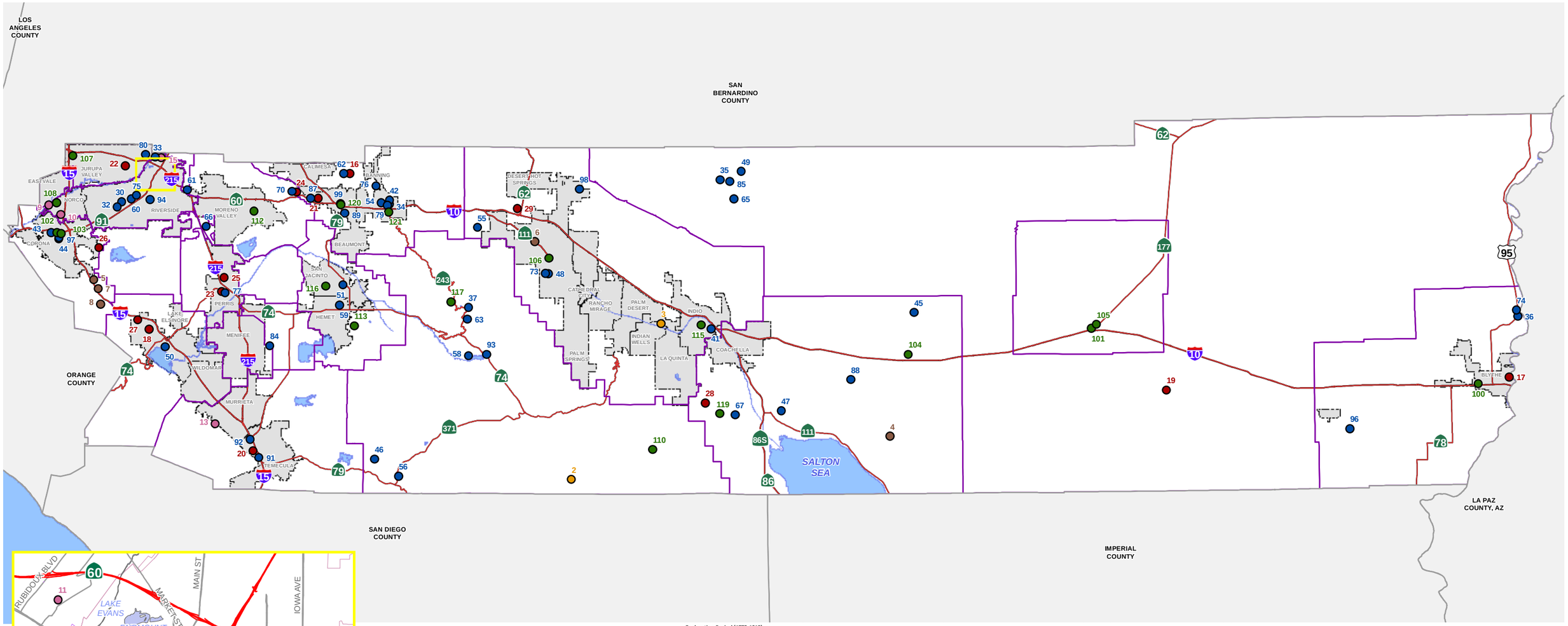

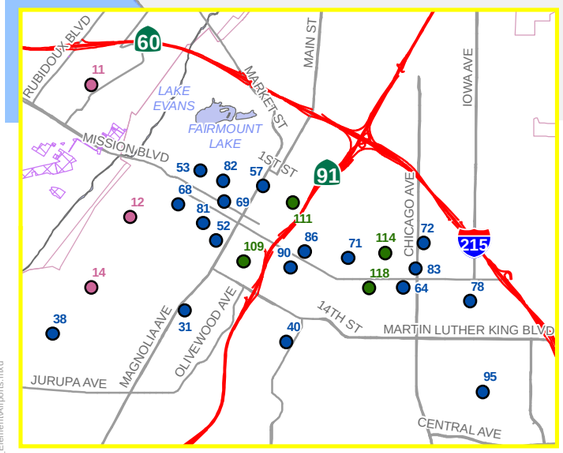

- Exploration
- Mission
- Mexican/Rancho
- Early Californian
- Early Statehood
- Post WWI to WWII

- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Exploration Period (1772-1818)

1 Anza crossing of Santa Ana River
2 Anza Camp and Crossing
3 Indian Wells

Mission Period (1769-1833)

4 Dos Palmas
5 Old Temescal Road
6 The Original Palm Springs
7 Serrano Boulder
8 Serrano Tanning Vats

Mexican/Rancho Period (1833-1848)

9 Bandini-Cota Adobe
10 Bandini Adobe Site
11 Louis Rubidoux House
12 Mt Roubidoux
13 Rancho Santa Rosa
14 Rubidoux Grist Mill
15 Trujillo Adobe

Early Californian Period (1848-1869)

16 Weaver Adobe
17 Bradshaw Ferry Crossing
18 Butterfield Stage Station
19 Corn Springs
20 First Post Office, Temecula
21 Frink Ranch
22 Jensen Alvarado Ranch
23 Pinacate Mining District
24 SAAHATAPA
25 Southern Hotel
26 Temescal Tin Mines
27 Third Serrano Adobe
28 Toro Village
29 Whitewater

Early Statehood (1869-1919)

30 Administration Building, Sherman Institute
31 All Souls Universalists Church
32 Arlington Library and Fire Hall
33 Armory Hall
34 Banning Woman's Club
35 Barker Dam
36 Blythe Intake
37 Camp Emerson
38 Chinatown
39 Citrus Experiment Station
40 Citrus Machinery Pioneering
41 Coachella Valley Water District
42 Coplin House
43 Carnegie Andrew Library
44 Corona High School
45 Cottonwood Oasis
46 Cottonwood School
47 Date Industry Birthplace
48 Desert Inn
49 Desert Queen Mine
50 Elsinore's Hottest Sulphur Spring
51 Estudillo Mansion
52 First Church of Christ
53 First Congregational Church of Riverside
54 Gilman Ranch
55 Hall City & Grade
56 Hamilton School
57 Harada House
58 Hemet Dam & Lake Hemet
59 Hemet Depot
60 Heritage House
61 Highgrove Hydroelectric Plant
62 Highland Springs
63 Idyllwild
64 Loring Opera House
65 Lost Horse Mine
66 March Field Historic District
67 Martinez Historic District
68 Masonic Temple
69 Mission Inn
70 Nobles Ranch
71 North Park
72 Old YWCA Building
73 Palmdale Railroad Site
74 Palo Verde Diversion Dam
75 Parent Navel Orange Tree
76 Pedley-Type Dam
77 Perris Depot
78 Peter Weber House
79 Henderson/Reid Building
80 Riverside Cement Co
81 Riverside County Courthouse
82 Federal Post Office
83 Riverside-Arlington heights Fruit Exchange
84 Garbani Rocco Homestead
85 Ryan House & Lost Horse Well
86 San Pedro, LA and Salt Lake Railroad Depot
87 San Timoteo Canyon Schoolhouse
88 Shaver's Well
89 St Boniface School
90 Sutherland Fruit Company
91 Temecula Old Town Historic District
92 Temecula Quarries
93 Thomas-Garner Ranch
94 Victoria Avenue
95 William Childs House
96 Wiley's Well
97 Woman's Improvement Club
98 Yerxa's Discovery
99 Beaumont Carnegie Library

Post WWI to WWII Period (1920-1945)

100 Blythe Depot
101 Site of Contractor's Hospital
102 Corona Founders Monument
103 Corona Theater
104 Desert Training Center
105 Eagle Mountain Iron
106 El Mirador Hotel and Tower
107 Galleano Winery
108 Lake Norconian Club
109 M.H. Simon Undertaking Chapel
110 Martinez Canyon Rockhouse
111 Mission Court Bungalows
112 Old Moreno School
113 Ramona Bowl
114 Riverside Municipal Auditorium and Soldier's Memorial Building
115 Smiley Place
116 Soviet Transpolar Landing Site
117 Speed of Light Experiment
118 University Heights Jr. High School
119 Valerie Jean Date Garden
120 Bogart House
121 Old Banning High School

Data Source: Riverside County (2011)

Figure 4.9.2

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

HISTORICAL RESOURCES

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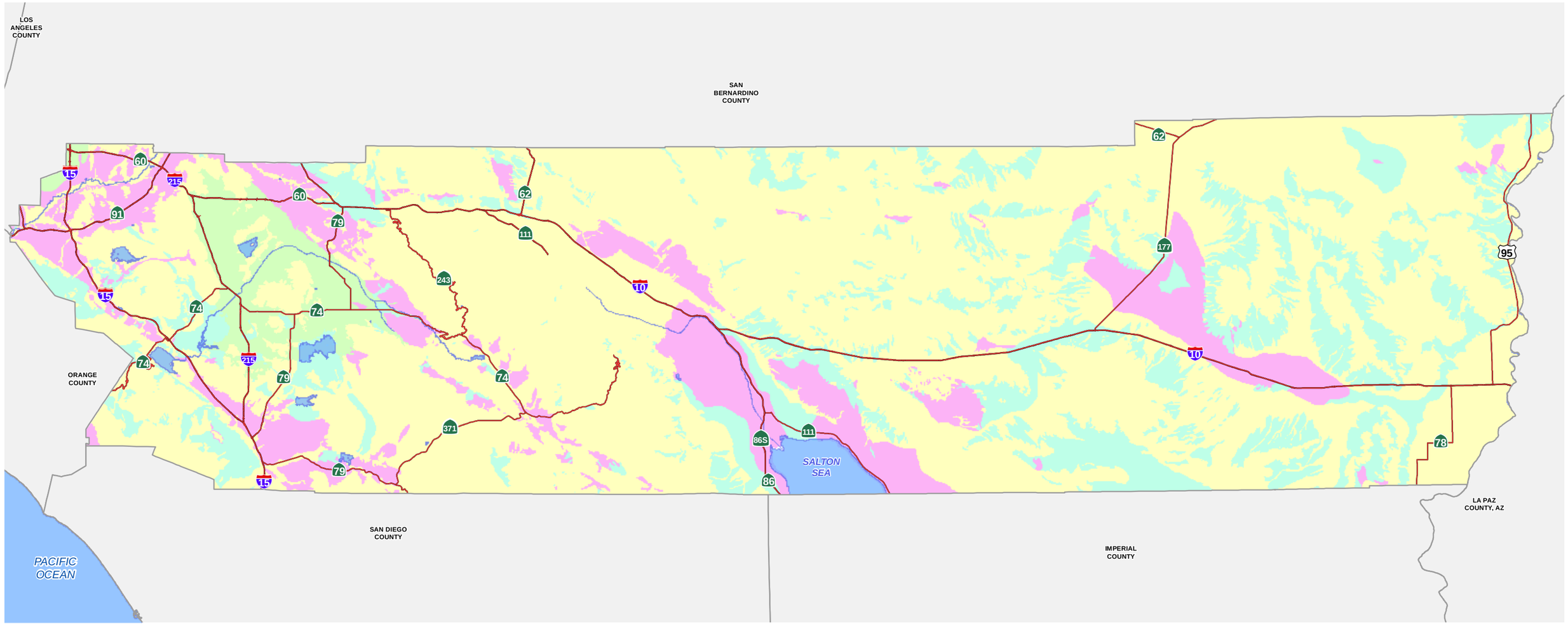

Data Source: LSA Associates (1999)

High A (Ha)
High B (Hb)
Low
Undetermined

Highways
Waterbodies

Figure 4.9.3

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December 16, 2013

Miles
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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

PALEONTOLOGICAL SENSITIVITY

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4.9.3 Policies and Regulations Addressing Cultural and Paleontological Resources

Existing cultural resources, including historical and archeological, and paleontological resources within Riverside County are protected through a wide variety of policies and regulations. The following existing federal and state policies and regulations are intended to ensure the preservation of cultural, historical and archeological resources in Riverside County:

Historic properties can consist of prehistoric or historic archeological resources. The National Register of Historic Places defines an archeological site as "the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains." As outlined below, historic properties and resources are protected under a wide variety of policies and regulations. Additionally, cultural and paleontological resources are recognized as a non-renewable resource and require further analysis and mitigating protection under CEQA. There are also a number of laws and regulations designed to protect Native American interests in cultural resources, particularly human remains and associated funerary objects, which receive additional protection under Public Resources Code (PRC) Section 5097.98. The various state and federal regulations that deal with cultural and paleontological resources include the following:

A. Federal Regulations

National Historic Preservation Act: The National Historic Preservation Act (NHPA) was passed in 1966 and is codified in Title 16, Section 470 *et seq.* of the U.S. Code (USC). The goal of the Act is to ensure federal agencies act as responsible stewards of our nation's resources when their actions affect historic properties. Among the regulations of the NHPA, Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Properties (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by ACHP. See Title 36 Code of Federal Regulations (CFR) Part 800, "Protection of Historic Properties."

Section 106 applies when two thresholds are met: 1) there is a federal or federally-licensed action, including grants, licenses and permits, and 2) that action has the potential to affect properties listed in or eligible for listing in the National Register of Historic Places. Section 106 requires each federal agency to identify and assess the effects of its actions on historic resources. The responsible federal agency must consult with appropriate state and local officials, Indian Tribes, applicants for federal assistance and members of the public, and consider their views and concerns about historic preservation issues when making final project decisions. The agency should also plan to involve the public and identify any other potential consulting parties. If the agency determines that it has no undertaking or that its undertaking is a type of activity that has no potential to affect historic properties, the agency has no further Section 106 obligations.

Pursuant to Section 106, impacts to a cultural site or artifact must be declared "significant," "potentially significant" or "not significant." Under NHPA regulations, impacts to "significant" archeological sites must be mitigated for, while "not significant" archeological remains need not. A "potentially significant" determination is utilized when there is not enough information to make a conclusive ruling. NHPA mitigation would not be necessary for archeological sites avoided during development.

National Register of Historic Places (NRHP): Developed in 1981 pursuant to Title 36 CFR Section 60, the NRHP provides an authoritative guide to be used by federal, state and local governments, private groups and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. It should be noted that the listing of a private property on the NRHP does not prohibit any actions which may otherwise be taken by the property owner with respect to the property. The listing of sites in California to the National Register is initiated through an application submitted to the State Office of Historical Preservation. Applications deemed suitable for potential consideration are handled by the State Historic Preservation Officer. All NRHP listings for sites in California are also automatically added to the California Register of Historical Resources by the State of California. The listing of a site on the NRHP does not generally result in any specific physical protection. Among other things, however, it does create an additional level of CEQA (and NEPA, the National Environmental Protection Act) review to be satisfied prior to the approval of any discretionary action occurring that might adversely affect the resource.

National Historic Landmarks Program: The National Historic Landmarks Program, developed in 1982 and as authorized by the Historic Site Act, identifies and designates National Historic Landmarks (NHLs) to "encourage the long-range preservation of nationally-significant properties that illustrate or commemorate the history and prehistory of the U.S." The program is administered by the Department of the Interior pursuant to 36 CFR Section 65.5. Unlike any of the other state or federal registries, sites listed on the NHL are explicitly preserved and protected from harm under federal law.

American Indian Religious Freedom Act: This Act became law in 1978 (Public Law 95-341, 42 USC 1996 and 1996a) in order to protect and preserve for American Indians their inherent right of freedom to believe, express and exercise their traditional religions. These religious rights extend to, but are not limited to, access to sites, use and possession of sacred objects and the freedom to worship through ceremonials and traditional rites.

Under this regulation, federal agencies and departments are charged with evaluating their policies and procedures in consultation with native traditional religious leaders in order to eliminate interference with the free exercise of native religion. Agencies must determine and make appropriate changes necessary to protect and preserve Native American religious cultural rights and practices, and to accommodate access to and use of religious sites "to the extent that the use is practicable and not inconsistent with an agency's essential functions." The intent is to protect Native Americans' First Amendment right to "free exercise" of religion.

Native American Graves Protection and Repatriation Act (NAGPRA): Enacted in 1990 under Title 25 USC Section 3001, NAGPRA describes the rights of Native American lineal descendants, Indian Tribes and Native Hawaiian organizations with respect to treatment, repatriation and disposition of Native American cultural items for which they can show a relationship of lineal descent or cultural affiliation. The statute also requires federal agencies and museums receiving federal funds to inventory holdings of Native American human remains and funerary objects and provide written summaries of other cultural items. In an attempt to recognize the religious and cultural significance of such sites and to protect their sacred integrity, it also provides for greater protection of Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects and items of cultural patrimony on federal and tribal lands.

Federal Antiquities Act: The federal Antiquities Act of 1906 was enacted with the primary goal of protecting cultural resources in the United States. As such, it explicitly prohibits appropriation, excavation, injury and destruction of "any historic or prehistoric ruin or monument, or any object of antiquity" located on lands owned or controlled by the federal government without permission of the Secretary of the federal department with jurisdiction. It also establishes criminal penalties, including fines and/or imprisonment, for these acts. Neither the Antiquities Act itself nor its implementing regulations (Title 43, CFR Part 3) specifically mentions paleontological resources. However, several federal agencies – including the National Park Service, the Bureau of

Land Management and the U.S. Forest Service – have interpreted objects of antiquity as including fossils. Consequently, the Antiquities Act also represents an early cornerstone for efforts to protect the nation's paleontological resources.

Paleontological Resources Preservation Act: The federal Paleontological Resources Preservation Act of 2002 (PRPA) was specifically intended to codify the generally accepted practice of limiting collection on public (federal) land of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who obtain a permit from the appropriate state or federal agency and agree to donate any materials recovered to recognized public institutions where they will remain accessible to the public and to other researchers.

Actions by the U.S. Army Corps of Engineers: Appendix C of Title 33 CFR Section 325 establishes procedures to be followed by the U.S. Army Corps of Engineers (ACOE) to fulfill the requirements of the National Historic Preservation Act (NHPA), as well as other applicable historic preservation laws and Presidential directives related to historic resources potentially affected by ACOE actions (including issuance of permits pursuant to the federal Clean Water Act [CWA]). It specifies that when a project's authorization requires a federal action (for example, issuance of permit pursuant to Section 404 of the CWA), the project must comply with the requirements of Section 106 of the NHPA.

B. State Regulations and Protection Programs

California Administrative Code, Title 14, Section *4308* ~~4307~~: This section states that "No person shall remove, injure, deface or destroy any object of paleontological, archeological or historical interest or value."

California Code of Regulations (CCR): In addition, CCR *Title 14* Section 1427 recognizes that "California's archeological resources are endangered by urban development and population growth and by natural forces." Accordingly, the State Legislature finds that "these resources need to be preserved in order to illuminate and increase public knowledge concerning the historic and prehistoric past of California." Lastly, it states that any person "not the owner thereof, who willfully injures, disfigures, defaces or destroys any object or thing of archeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor." The code also specifies that it is a misdemeanor to "alter any archeological evidence found in any cave or to remove any materials from a cave." (See also, Sections 622*1/2* and 623 of the California Penal Code.)

California Register of Historic Resources: The State's Office of Historic Preservation (OHP) manages and oversees the California Register of Historic Resources (CRHR), which is intended to serve as "an authoritative guide to the state's significant historical and archeological resources." As outlined in PRC Section 5020 *et seq.*, resources listed must meet one of four "significance criteria" related to events, people, construction/artistic value or information. Sites must also retain sufficient integrity to convey their significance. The CRHR includes a number of types resources, including: all properties listed in or determined formally eligible for listing in the NRHP; all California Historical Landmarks from #770 onward; specific California Historical Landmarks issued prior to #770 and certain California Points of Historical Interest, as deemed appropriate for listing by the California Historic Resources Commission; and, any properties nominated per OHP regulations. California Historical Landmarks are intended to recognize resources of statewide significance. Points of Historical Interest recognize resources of local or countywide significance. And lastly, as mentioned above, all NRHR listings within California are automatically added to the CRHR. The listing of a site on a California State register does not generally result in any specific physical protection. Among other things, however, it does create an additional level of CEQA review to be satisfied prior to any discretionary action occurring that might adversely affect the resource.

Traditional Tribal Cultural Places Act (Senate Bill 18): Senate Bill 18 (SB 18) enacted in 2004 requires local governments to consult with Native American groups at the earliest point in the local government land use planning process for General Plan Amendments, Specific Plans and Specific Plan Amendments. The consultation is intended to establish a meaningful dialogue regarding potential means to preserve Native American places of prehistoric, archeological, cultural, spiritual and ceremonial importance. It also establishes a means for Tribes to hold conservation easements and for tribal cultural places to be included in open space planning.

Regulation of Cultural Resources Pursuant to the Public Resources Code: Section 5097 of the California Public Resources Code (PRC) outlines the requirements for cultural resource analysis prior to the commencement of any construction project on state lands. It further specifies that the unauthorized disturbance or removal of archeological, historical or paleontological resources located on public lands (including those owned by counties, cities, etc.) is a misdemeanor. It also prohibits the knowing destruction of objects of antiquity without a permit (i.e., expressed permission) on public lands and provides for criminal sanctions for violators. The section was amended in 1987 to require consultation with the California Native American Heritage Commission whenever Native American graves are found. It also establishes that violations for taking or possessing remains or artifacts are felonies.

PRC Sections 5097.9 through 5097.991 establish that no public agency or private party using or occupying public property (or operating on under a public license, permit, grant, lease or contract made after July 1, 1977) shall in any manner interfere with the free expression or exercise of Native American religion as provided in the U.S. Constitution and the California Constitution. It also prohibits such agencies and parties from causing severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require it.

These sections also establish the state's Native American Heritage Commission (NAHC). The NAHC is tasked with working to ensure the preservation and protection of Native American human remains, associated grave goods and cultural resources. Towards this end, the NAHC has a strategic plan for assisting the public, development communities, local and federal agencies, educational institutions and California Native Americans to better understand problems relating to the protection and preservation of cultural resources and to serve as a tool to resolve these problems. In 2006, PRC Sections 5097.91 and 5097.98 were amended by State Assembly Bill 2641 to authorize the NAHC to bring legal action when necessary to prevent damage to Native American burial grounds or places of worship. It also established more specific procedures to be implemented in the event that Native American remains are discovered.

California Public Resources Code Related to Paleontological Resources: Several sections of the California Public Resources Code protect paleontological resources. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury and defacement of any paleontological feature on public lands (lands under state, county, city, district or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands. The California Administrative Code Sections 4307-4309, relating to the State Division of Beaches and Parks, afford protection to geologic features and "paleontological materials," but grant the director of the state park system authority to issue permits for specific activities that may result in damage to such resources, if the activities are for state park purposes and in the interest of the state park system.

California Government Codes Addressing Native American Heritage: Section 6254(r) of the Government Codes exempts from disclosure public records of Native American graves, cemeteries and sacred places maintained by the NAHC. Pursuant to SB 18, GC Section 65351 specifies how local planning agencies should

provide opportunities for involvement of California Native American tribes to consult on the preparation or amendment of general plans. In particular, GC Section 65352 requires local planning agencies to refer proposed actions of general plan adoption or amendment to California Native American tribes on the contact list maintained by the NAHC and others, with a 45-day opportunity for comments.

In regards to historical properties, GC Section 25373 and 37361 allows city and county legislative bodies to acquire property for the preservation or development of a historical landmark. It also allows local legislative bodies to enact ordinances to provide special conditions or regulations for the protection or enhancement of places or objects of special historical or aesthetic interest or values. Lastly, GC Sections 50280-50290 implement the Mills Act which allows the negotiation of historical property contracts between a private property owner of a "qualified historical property" and provides additional guidelines for such contracts.

State Health and Safety Code: The Healthy and Safety Code (HSC) Section 7050.5(b) requires that excavation on a project site cease "in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery" until the coroner can determine regarding the circumstances, manner and cause of any death. The coroner is then required to make recommendations concerning the treatment and disposition of the human remains. Further, this section of the code makes it a misdemeanor to intentionally disturb, mutilate or remove interred human remains. Section 7051 specifies that the removal of human remains from "internment or a place of storage while awaiting internment" with the intent to sell them or to dissect them with "malice or wantonness" is a public offense punishable by imprisonment in a state prison. Lastly, HSC Sections 8010-8011 establish the California Native American Graves Protection and Repatriation Act consistent with the federal law addressing the same. The Act stresses that "all California Indian human remains and cultural items are to be treated with dignity and respect." It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also outlines the need for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims.

C. California Environmental Quality Act (CEQA) Directives

In many cases, CEQA provides fairly wide latitude for a Lead Agency to determine environmental impacts and their level of significance. For historical resources, however, CEQA includes explicit standards in several areas. This includes determining when a resource is "historically significant" or "unique," as well as when an impact to such resource is significant. The result is a series of steps that are applied to the consideration of cultural resources.

First, it must be determined whether an "historic resource" is present. Secondly, it must be determined if the project would cause a "substantial adverse change" in the significance of an historical resource. Additionally, sites not qualifying as an historic resource could be found to be a "unique archeological resource," which are also afforded protection. These terms are defined in the State CEQA Guidelines, as noted below. If an archeological resource is neither a "unique archeological resource" nor an "historic resource," then affects to it are not considered significant under CEQA.

1. Definition of "Historical Resources"

Under CCR Section 15064.5(a) an "historical resource" is defined as including the following:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources.

(2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements of PRC Section 5024.1(g) shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historic Places, including the following:

i. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii. Is associated with the lives of persons important in our past;

iii. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

iv. Has yielded, or may be likely to yield, information important in prehistory or history.

2. Definition of "Substantial Adverse Change"

CCR Section 15064.5(b) defines a "substantial adverse change" as meaning the "physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings" such that the significance of the historical resource would be "material impaired." This term is further defined as being when a project, "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that" does any of the following:

(1) Conveys its historical significance and justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources.

(2) Accounts for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project established by a preponderance of evidence that the resource is not historically or culturally significant.

(3) Conveys its historical significance and justifies its eligibility for inclusion in the California Register of Historical Resources, as determined by a lead agency for the purposes of CEQA.

3. Definition of "Unique Archeological Resource"

PRC Section 21083.2(g) defines this as "an archeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality, such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Accordingly, CEQA Section 21083.2 specifies that if a project will cause damage to a unique archeological resource, the lead agency may "require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state." "Preservation in place" is when the relationship between artifacts and the archeological context of the site is kept intact. This can be accomplished by avoiding construction on the archeological site; incorporating a park, greenspace or other open space around or over the site; and deeding the resource site into a permanent conservation easement. Other forms of conservation are to be considered as well.

Section 15064.5(c) of the State CEQA Guidelines also establishes that if "maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction" of the historical resource is conducted "in a manner consistent with" the [U.S.] Secretary of the Interior's Standards for the Treatment of Historic Properties (Weeks and Grimmer, 1995), then the project's impact on the historical resource "shall generally be considered mitigated to below a level of significance."

Lastly, CCR Section 15126.4(b) specifies that when "data recovery through excavation is the only feasible mitigation," a data recovery plan shall be prepared and adopted prior to any excavation being undertaken. The data recovery plan is designed to provide for adequately recovering the scientifically consequential information from and about the historical resource using current industry standards in archeological methods. In Riverside County, the resultant study is deposited with the Eastern Information Center at UCR. Any human remains recovered shall be treated in accordance with the provisions of [HSC] Section 7050.5.

In terms of specific mitigation for archeological resources, PRC Section 21083.2 also specifies a variety of financial standards for funding such measures and limits the amount that can be required to be spent. In some cases, such as for significant historic resources, these limits do not apply.

D. County Ordinances, Regulations and Programs

1. Ordinance No. 578 - Establishment of Historic Preservation Districts

This ordinance is intended to facilitate the preservation of areas deemed historically important to the County of Riverside. The ordinance specifies that a Historic Preservation District may be established if the Riverside County Board of Supervisors adopts a resolution that includes the boundaries of the Historic Preservation District and finds that the proposed Historic Preservation District is in conformity with the Cultural and Paleontological section of the Multipurpose Open Space Element of the Riverside County General Plan. It must also find that, for the county, state or nation: the area exemplifies or reflects significant aspects of the cultural, political, economic or social history; the area is identified with historic personages or with important events in history; or, that the area embodies the distinguishing characteristics of a significant architectural period which is inherently valuable for the study of architecture unique to the history of the county, state or nation.

Under this ordinance, no building or structure within the boundaries of an adopted Historic Preservation District can be constructed or altered, except in strict compliance with the plans approved in conjunction with the issuance of a Historic District Alteration Permit by the Riverside County Planning Director. The ordinance also outlines how such certificates are to be reviewed and processed in order to preserve the "historical significance and related construction theme" of the Historic District.

2. Riverside County Historic Preservation Commission

The Riverside County Historical Commission was established in 2005 to advise the Board of Supervisors on historical preservation matters. It is tasked with working to discover and identify persons, events and places of historical importance within Riverside County, and to make recommendations relating to the preservation of appropriate historic sites and structures. To accomplish this, the Commission established criteria and procedures to identify and recognize historic landmarks in Riverside County. These criteria should be used when reviewing a potentially historically or culturally significant site that could be affected by the proposed development. Such resources are noted in the countywide list provided in Table 4.9-A.

3. Riverside County Planning Department Procedures

The Riverside County Archeologist reviews all proposed land use projects subject to CEQA and not otherwise deemed categorically exempt. The Riverside County Archeologist reviews various internal databases for information that might pertain to the age of any buildings found on site, grading permits, ground disturbance activities and building permits. Where buildings are 45 years or older, the project applicant is required to perform an architectural history evaluation to assess potential historic value as part of a Phase I Cultural Resources study. When the study is completed, and if historic-period resources were identified during a survey, a copy of the report is transmitted to the Riverside County Historic Preservation Officer (CHPO) for review and comment. The CHPO sends relevant comments back to the Riverside County Archeologist.

Vacant parcels within areas known to have prehistoric or historic resources trigger a Phase I Cultural Resources study. Similarly, any parcels with environmental, geomorphological or vegetative features known to increase the likelihood of cultural resources being present trigger a "Phase I" cultural resources study. Such studies are required to follow the reporting formula found on the Riverside County Planning Department's website which mirror the recommendations published by the SHPO in 1987.

The Riverside County Archeologist reviews all Phase I cultural resources studies for completeness and reasonable conclusions based on current industry standards in archeology. The Phase I study serves to advise the Riverside County Archeologist on matters relating to any identified prehistoric or historic resources, provide the requisite information to complete the project-related CEQA analysis and guide the Riverside County Archeologist in determining which land use conditions of approval and/or mitigation measures apply to the proposed project.

Copies of studies are provided to tribes, upon their request, as a confidential document. If a proposed project is subject to the requirements of the Traditional Tribal Places Act (commonly referred to as Senate Bill 18), a Phase 1 report is forwarded to tribes who request it as part of consultation under SB 18. Typically, official tribal consultations are scheduled after the report has been sent to the tribe(s) to maximize consultation efforts.

In order to ensure the review and protection of paleontological resources for projects subject to CEQA and not otherwise categorically exempt, the Riverside County Geologist performs an initial review of the County of Riverside's database and mapped information for the subject site. When existing information indicates that a site proposed for development has high paleontological sensitivity, a paleontological resource impact mitigation

program (PRIMP) is required for the project. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources. If the site warrants protection, then an "Environmental Constraint" is placed on the approved map for the project, stating that:

> *"This site, as delineated on this ECS map and as indicated in the county's General Plan, has been mapped as having a high potential for containing significant nonrenewable fossil material. The proposed project's potential to impact paleontological resources has been determined to be possible. Therefore, mitigation of this potential impact in the form of monitoring of all site earth-moving activities and collection/curation of all significant fossils unearthed is required unless proven unnecessary through comprehensive literature research and site inspection."*

When existing information indicates that a site proposed for development has low paleontological sensitivity, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the Riverside County Geologist must be notified and a paleontologist must be retained by the project proponent. The paleontologist documents the extent and potential significance of the paleontological resources on the site and establishes appropriate mitigation measures for further site development.

When existing information indicates that a site proposed for development has undetermined paleontological sensitivity, a report is filed with the Riverside County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources.

Listed below are the standardized conditions of approval pertaining to cultural and paleontological resources. Based on the foregoing information, the Riverside County Archeologist may tailor these conditions or apply additional conditions as the individual project-specific circumstances, Phase 1 cultural resources study and any "Phase II" archeological testing studies dictate. Testing is done to obtain additional information toward a significance evaluation for CEQA purposes.

4. General Conditions of Approval for Discretionary Actions

The following items are the generic Conditions of Approval typically applied to proposed development projects by the Riverside County Archeologist for cultural resources, as deemed warranted by site conditions and/or data. For the remaining items in this sub-section, the term "project" refers to the future development project for which the conditions would apply, not specifically to GPA No. 960.

a. General Conditions Applied for Cultural / Native American Resources

General Condition – If Human Remains Found: The developer/permit holder or any successor in interest shall comply with the following codes for the life of [the proposed] project:

If human remains are encountered, State [HSC] Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and their disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within the period specified by law.

Subsequently, the Native American Heritage Commission shall identify the "Most Likely Descendant." The Most Likely Descendant shall then make recommendations and engage in consultation with the County of Riverside and the property owner concerning the treatment of the remains as provided in Public Resources Code Section 5097.98. Human remains from other ethnic/cultural groups with recognized historical associations to the project area shall also be subject to consultation between appropriate representatives from that group and the Riverside County Planning Director.

General Conditions – Inadvertent Archeological Find: The developer/permit holder or any successor in interest shall comply with the following for the life of [the proposed] project:

If during ground disturbance activities, cultural resources are discovered that were not assessed by the archeological reports and/or environmental assessment conducted prior to [proposed] project approval, the following procedures shall be followed. A cultural resources site is defined, for this condition, as being three or more artifacts in close association with each other, but may include fewer artifacts if the area of the find is determined to be of significance due to its sacred or cultural importance.

a. All ground disturbance activities within 100 feet of the discovered cultural resource shall be halted until a meeting is convened between the [project's] developer, the project archeologist, the Native American tribal representative (or other appropriate ethic/cultural group representative) and the Planning Director to discuss the significance of the find.

b. At the meeting, the significance of the discoveries shall be discussed and after consultation with the Native American tribal (or other appropriate ethnic/cultural group) representative and the archeologist, a decision is made, with the concurrence of the Planning Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc) for the cultural resource.

c. Further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to the appropriate preservation or mitigation measures.

Prior to Grading Permit – Cultural Resources Professional: As a result of [description of the finding would be inserted here], prior to the issuance of grading permits, the developer/permit holder shall retain and enter into a monitoring and mitigation service contract with a qualified [(select appropriate position) Archeologist, Historic Archeologist, Architectural Historian, Historian or Prehistoric Archeologist] for services. This professional shall be known as the "Project Archeologist." The Project Archeologist shall be included in the pre-grade meeting to provide cultural/historical sensitivity training including the establishment of set guidelines for ground disturbance in sensitive areas with the grading contractors and special interest monitors. The Project Archeologist shall manage and oversee monitoring for all initial ground-disturbing activities and excavation of each portion of the project site including clearing, grubbing, tree removal, grading, trenching, stockpiling of material, rock crushing, structure demolition, etc. The Project Archeologist shall have the authority to temporarily divert, re-direct or halt the ground disturbance activities to allow identification, evaluation and potential recovery of cultural resources in coordination with any required tribal or special interest monitors.

The developer/permit holder shall submit a fully executed copy of the contract to the Riverside County Planning Department to ensure compliance with this condition of approval. Upon verification, the Planning Department shall clear this condition. Note:

- The Project Archeologist is responsible for implementing mitigation using standard professional practices for cultural resources. The Project Archeologist shall consult with the County of Riverside, developer/ permit holder and any tribal or required special interest group monitor throughout the process.

- The agreement shall not modify any approved condition of approval or mitigation measure.

Prior to Grading Permit – Special Interest Monitor: As a result of [add statement of finding], prior to the issuance of grading permits, the developer/permit holder shall enter into contract and retain a monitor(s) designated by the [name of the special interest group(s) who will be monitoring would be inserted here]. This [group's monitor(s)] shall be known as the Special Interest Monitor (SI Monitor) for [the] project. The contract shall address the treatment and ultimate disposition of cultural resources which may include repatriation and/or curation in Riverside County-approved curation facility.

The SI Monitor shall be on site during all initial ground-disturbing activities and excavation of each portion of the project site, including clearing, grubbing, tree removals, grading, trenching, stockpiling of materials, rock crushing, structure demolition, etc. The SI Monitor shall have the limited authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation and potential recovery of cultural resources in coordination with the Project Archeologist, which is the contracted cultural resource professional, such as an Archeologist, Historic Archeologist, Architectural Historian and/or Historian.

The developer/permit holder shall submit a fully executed copy of the contract with the SI Monitor to the Riverside County Planning Department to ensure compliance with this condition of approval. Upon verification, the Planning Department shall clear this condition. Note:

- The Project Archeologist is responsible for implementing mitigation and standard professional practices for cultural resources. The professional shall consult with the County of Riverside, developer/permit holder and the special interest group monitor throughout the process.

- Special interest monitoring does not replace any required cultural resource monitoring, but rather serves as a supplement for consultation and advisory purposes for the special interest groups only.

- This agreement shall not modify any approved condition of approval or mitigation measure.

- The developer/permit holder shall contact the Planning Director for consideration of this condition after forty-five (45) days, if an agreement with the special interest group(s) has not been [reached].

- Should repatriation be preferred, it shall not occur until after a "Phase IV" monitoring report has been submitted to the Riverside County Archeologist. Should curation be preferred, the development/permit holder is responsible for all costs.

Prior to Grading Permit – Tribal Monitoring: As a result of [add statement of finding], prior to the issuance of grading permits, the Developer/permit holder shall enter into an agreement and retain a monitor designated by the [provide the name of the Tribe(s) who will be monitoring]. This group['s monitor] shall be known as the Tribal Monitor(s) for [the] project. The agreement shall address the treatment and ultimate disposition of cultural resources which may include repatriation and/or curation in a Riverside County-approved curation facility. The Tribal Monitors shall be on site during all initial ground-disturbing activities and excavation of each portion of the project site including clearing, grubbing, tree removal, grading, trenching, stockpiling of materials, rock crushing, structure demolition, etc. The Tribal Monitor(s) shall have the limited authority to temporarily divert, redirect or halt ground disturbance activities to allow identification, evaluation, consultation and potential recovery of cultural resources in coordination with the Project Archeologist.

The developer/permit holder shall submit a fully-executed copy of the contract with the Tribal Monitors to the Riverside County Archeologist to ensure compliance with this condition of approval. Upon verification, the Riverside County Archeologist shall clear this condition. Note:

- The Project Archeologist is responsible for implementing mitigation and standard professional practices for cultural resources and shall consult with the County of Riverside, designated Tribal Monitor(s) and developer/permit holder throughout the process.
- Tribal monitoring does not replace any required cultural resources monitoring, but rather serves as a supplement for consultation and advisory purposes for Tribal interests only.
- This agreement shall not modify any approved condition of approval or mitigation measure.
- The developer/permit holder shall contact the Planning Director for consideration of this condition after 45 days, if an agreement with the Tribe has not been [reached]. The developer/permit holder has the burden of demonstrating a good-faith effort to secure the Tribal agreement.
- Should repatriation be preferred, it shall not occur until after a "Phase IV" monitoring report has been submitted to the Riverside County Planning Department. Should curation be preferred, the development/permit holder is responsible for all costs.

Prior to Building Final Inspection – Cultural Resources Report: Prior to final inspection of the first building permit, the development/permit holder shall submit two copies of a "Phase IV" cultural resource monitoring report that complies with the Riverside County Planning Department's requirements for such reports. The report shall be prepared by a Riverside County-certified professional archeologist. The report shall include evidence of the required cultural/historical sensitivity training for the construction staff held during the pre-grading meeting. The Riverside County Archeologist shall review the report to determine adequate mitigation compliance. Provided the report is adequate, the Riverside County Archeologist shall clear this condition.

b. General Conditions Applied by County Geologist for Paleontological Resources

Prior to Grading Permit Issuance – Paleontological PRIMP and Monitor: PDP [insert report number], prepared by [insert name of technical firm] for this [proposed] project, concluded the potential to impact significant paleontological resources is high or this site is mapped in Riverside County's General Plan as having a high potential for paleontological resources (fossils). Proposed project site grading/ earthmoving activities could potentially impact this resource. Hence, prior to issuance of grading permits:

a. The applicant shall retain a qualified paleontologist ("Project Paleontologist") approved by the County of Riverside to create and implement a project-specific plan for monitoring site grading/earthmoving activities.

b. The Project Paleontologist retained shall review the approved development plan and grading plan and shall conduct any pre-construction work necessary to render appropriate monitoring and mitigation requirements as appropriate. These requirements shall be documented by the Project Paleontologist in a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall be submitted to the Riverside County Geologist for review and approval prior to issuance of a grading permit [by the county].

c. Information to be contained in the PRIMP, at a minimum and in addition to other industry standard and Society of Vertebrate Paleontology standards, are as follows:

- Description of the proposed site and planned grading operations.
- Description of the level of monitoring required for all earthmoving activities in the project area.
- Identification (name) and qualifications of the qualified paleontological monitor to be employed for grading operations monitoring.
- Identification of personnel with authority and responsibility to temporarily halt or divert grading equipment to allow for recovery of large specimens.
- Direction for any fossil discoveries to be immediately reported to the property owner who in turn will immediately notify the Riverside County Geologist of the discovery.
- Means and methods to be employed by the paleontological monitor to quickly salvage fossils as they are unearthed to avoid construction delays.
- Sampling of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates.
- Procedures and protocol for collecting and processing of samples and specimens.
- Fossil identification and curation procedures to be employed.
- Identification of the permanent repository to receive any recovered fossil material. The County of Riverside must be consulted on the repository [or] museum to receive the fossil material and a written agreement between the property owner/developer and the repository must be in place prior to site grading.
- All pertinent exhibits, maps and references.
- Procedures for reporting of findings.
- Identification and acknowledgement of the developer for the content of the PRIMP as well as acceptance of financial responsibility for monitoring, reporting and curation fees.

All reports shall be signed by the Project Paleontologist and all other professionals responsible for the report's content as appropriate. Two wet-signed original copies of the report(s) shall be submitted to the office of the Riverside County Geologist along with a copy of this condition and the grading plan for appropriate case processing and tracking. These documents should not be submitted to the project Planner, the Plan Check staff, the Land Use Counter or any other county office. In addition, the applicant shall submit proof of hiring (i.e., copy of executed contract, retainer agreement, etc.) of a Project Paleontologist for the in-grading implementation of the PRIMP.

Prior to Grading Final – Paleontological Monitoring Report Requirement: The applicant shall submit to the Riverside County Geologist one wet-signed copy of the Paleontological Monitoring Report prepared for site grading operations at [the] site. The report shall be certified by the professionally qualified Project Paleontologist

responsible for the content of the report. The Project Paleontologist must be on Riverside County's Paleontology Consultant List. The report shall contain a report of findings made during all site grading activities and an appended itemized list of fossil specimens recovered during grading (if any) and proof of accession of fossil materials into the pre-approved museum [or other] repository. In addition, all appropriate fossil location information shall be submitted to the Western Information Center, the San Bernardino County Museum and the Los Angeles County Museum of Natural History, at a minimum, for incorporation into their Regional Locality Inventories.

Additional/Alternate Language for Small Disturbance Projects (accessory WECS, "mono-poles"/ "mono-pines"/etc. [i.e., cellular towers], minimal ground disturbance) to be Added for Projects Located in the "Undetermined" Potential Zone: [For use when] according to Riverside County's General Plan, [a proposed development] site has been mapped as having an "Undetermined Potential" for paleontological resources. [One of the two paragraphs below would be inserted into conditions, as applicable; the non-applicable one would be deleted.]

This category encompasses areas underlain by sedimentary rocks for which literature and unpublished studies are not available and, as such, have an undetermined potential for significant paleontological resources. However, due to the limited nature of the [proposed] project's earthmoving activity, it is unlikely significant impacts to paleontological resources would occur. Nevertheless, should fossil remains be encountered during site development, conditions 1 through 7, below must be met. *OR*

According to Riverside County's General Plan, [the] site has been mapped as having a "High Potential" for paleontological resources at depth. However, Paleontological Assessment Report No. [insert number] concluded a low potential for encountering fossil remains due, in part, to the limited earthmoving required to construct the project. As such, this project is not anticipated to require any direct mitigation for paleontological resources. However, should fossil remains be encountered during site development, conditions [*a* through *g*, below], must be met.

General Condition - Projects Located Completely within the Low Potential Zone: [Applies when] according to Riverside County's General Plan, [the] site has been mapped as having a "Low Potential" for paleontological resources. This category encompasses lands for which previous field surveys and documentation demonstrated a low potential for containing significant paleontological resources subject to adverse impacts. As such, [the] project [would] not [be] anticipated to require any direct mitigation for paleontological resources. However, should fossil remains be encountered during site development, the following conditions must be met:

a. All site earthmoving shall be ceased in the area of where the fossil remains are encountered. Earthmoving activities may be diverted to other areas of the site.

b. The owner of the property shall be immediately notified of the fossil discovery and shall in turn immediately notify the Riverside County Geologist of the discovery.

c. The applicant shall retain a qualified paleontologist approved by the County of Riverside.

d. The paleontologist shall determine the significance of the encountered fossil remains.

e. Paleontological monitoring of earthmoving activities will continue thereafter on an as-needed basis by the paleontologist during all earthmoving activities that may expose sensitive strata. Earthmoving activities in areas of the project area where previously undisturbed strata will be buried, but not otherwise disturbed, need not be monitored. The supervising paleontologist will have the authority to reduce

monitoring once he/she determines the probability of encountering any additional fossils has dropped below an acceptable level.

f. If fossil remains are encountered by earthmoving activities when the paleontologist is not on site, these activities will be diverted around the fossil site and the paleontologist called to the site immediately to recover the remains.

g. Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then will be curated (assigned and labeled with museum [or] repository fossil specimen numbers and corresponding fossil site numbers, as appropriate; placed in specimen trays or vials [along] with completed specimen data cards) and catalogued. Associated specimen data and corresponding geologic and geographic site data will be archived (specimen and site numbers, and corresponding data, entered into appropriate museum repository catalogs and computerized databases) at the museum [or] repository by a laboratory technician. The remains will then be accessioned into the museum [or] repository fossil collection, where they will be permanently stored, maintained and, along with associated specimen and site data, made available for future study by qualified scientific investigators. The County of Riverside must be consulted on the repository [or] museum to receive the fossil material prior to [its] being curated.

E. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and are not part of the proposed project, GPA No. 960. Rather, these existing policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their case-by-case application. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

1. Multi-Purpose Open Space (OS) Element Policies

Policy OS 19.2: The County of Riverside shall establish a cultural resources program in consultation with Tribes and the professional cultural resources consulting community. Such a program shall, at a minimum, address each of the following: application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation techniques and methods; and the descendant community consultation requirements of local, state and federal law.

Policy OS 19.3: Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.

Policy OS 19.4: To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state.

Policy OS 19.5: Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

Policy OS 19.6: Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as show on ~~Figure OS-7~~ *Figure OS-8*, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist *prior to site grading*. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

Policy OS 19.7: Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as show on ~~Figure OS-7~~ *Figure OS-8*, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

F. Proposed New or Revised Riverside County General Plan Policies

The following policy modifications are proposed under GPA No. 960 to correct a reference to a state code and clarify directives for paleontological curation.

1. Land Use (LU) Element Policies

Policy LU *4.5* (Previously LU 4.4): Permit historically significant buildings to vary from building and zoning codes in order to maintain the historical character of the county; providing that the variations do not endanger human life and buildings comply with the State Historic~~al~~ *Building* Code.

2. Open Space (OS) Element Policies

Policy OS 19.6: Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as show on ~~Figure OS-7~~ *Figure OS-8*, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist *prior to site grading*. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

Policy OS 19.8: Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on [General Plan] Figure ~~OS-7~~ *Figure OS-8*, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources *prior to approval of that department*.

***NEW* Policy OS 19.9:** *Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.*

4.9.4 Thresholds of Significance for Cultural and Paleontological Resources

The project would result in a significant impact on cultural resources if it would:

A. Cause a substantial adverse change in the significance of historical resource as defined in CCR Section 15064.5.

B. Cause a substantial adverse change in the significance of an archeological resource pursuant to CCR Section 15064.5.

C. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

D. Disturb any human remains, including those interred outside of formal cemeteries.

4.9.5 Effect of GPA No. 960 on the General Plan and on Cultural and Paleontological Resources

A. Proposed Changes to the General Plan

The proposed update to the General Plan (pursuant to General Plan Amendment No. 960) includes changes to land use overlays, land use designations amendments and policies that will allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in areas throughout Riverside County. As with the current General Plan, future development consistent with GPA No. 960 has the potential to adversely affect historic, archeological or paleontological resources, both known and previously unknown. In particular, GPA No. 960 contains policy changes that may facilitate the further development of specific areas or development at greater intensities or densities than that previously planned. These include the new Rural Village Land Use Overlays in Good Hope and Meadowbrook, as well as other new-proposed Policy Areas, such as Lakeland Village and the Northeast Business Park. Similar increases in potential for ground-disturbing development will also occur for lands in which their base General Plan land use Foundation has been changed from that of a lower intensity (such as "Rural" or "Open Space") to one allowing higher intensities (such as "Rural Community" or "Community Development"). A variety of individual parcels are proposed for this type of change under GPA No. 960. In some cases, the proposed changes may remove a barrier to potential future development by proposing a more logical, readily-implementable land use scenarios. ~~such as for Lakeland Village.~~

As part of the project review process, cultural and paleontological information within the General Plan was updated and associated polices reviewed and revised where necessary. The existing General Plan addresses such resources primarily in the Multipurpose Open Space Element and, to a minor degree, the Land Use Elements. Specifically, GPA No. 960 includes two policy updates. The first clarifies that historically significant buildings must comply with the State Historic Building Code. The second update directs found paleontological resources to a facility within Riverside County for curation. Text of the relevant revised General Plan policies is provided in Section 4.9.2.E above. Within the Land Use Element, the open space land use designation was updated to include cultural preservation within the Open Space Conservation category. Additionally, a Historic District Overlay was added to allow for specific protections, land uses, the application of the Historic Building Code and consideration for contributing elements to a prospective historic district.

B. Analysis of GPA No. 960 Effects on Cultural and Paleontological Resources

In all of these scenarios (changes leading to future development potential where none previously existed, as well as potential increases in density or intensity), the GPA No. 960 changes have the potential to result in increased areas of disturbance to both structures and artifacts on the site's surface, as well as any subsurface artifacts, paleontological or geological features. Particularly in rural or previously undisturbed areas, future development that ensues could lead to the discovery of archeological, historical or paleontological resources deemed significant, including the uncovering of human remains.

At the programmatic level addressed in this EIR, a variety of regulatory measures, including compliance with and implementation of federal, state and local regulations, as well as county ordinances and Riverside County General Plan polices, would serve to ensure potential impacts to cultural resources are reduced to the point where impacts are less than significant. (See full discussion on impacts and mitigation, below.) In addition, all future implementing projects (such as parcel and tract maps, conditional use permits, etc.) would be subject to further CEQA review focusing on the specifics of the proposed project – which cannot be foreseen at this time (since no specific development proposals are included in GPA No. 960).

County of Riverside procedures for project-specific CEQA review include applying all applicable regulatory measures, such as those outlined herein, and requiring consistency with all applicable General Plan policies and existing EIR No. 441 mitigation measures (as per EIR No. 441's Mitigation Monitoring and Reporting Program) and the internal Planning Department procedures also as presented herein. These regulatory measures, policy actions and Departmental procedures addressing project-specific significant impacts are included in a project's conditions of approval. The County of Riverside assigns these measures as required in compliance with CEQA in its discretionary capacity as Lead Agency. The conditions of approval, which are developed and issued by the County of Riverside, form the basis of the contractual obligations to which a project is subject in order to obtain the applied-for land use entitlement from the County of Riverside and provide the legal instrument through which all measures deemed necessary for CEQA purposes are implemented.

4.9.6 Cultural and Paleontological Resources – Impacts and Mitigation

A. Would the project cause a substantial adverse change in the significance of historical resource as defined in CCR Section 15064.5?

Impact 4.9.A - Adversely Change the Significance of Historical Resources: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting known and presently unknown historic resources. Compliance with existing laws, County Ordinance No. 578, General Plan policies and existing Mitigation Measure 4.7.1B from EIR No. 441 would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.9.A

As indicated in Table 4.9-A, Riverside County has a significant number of historic structures, sites and ruins, along with other historic resources that have yet to be identified. Many of these are located in cities and therefore not under the jurisdiction of this General Plan. It is expected that future development consistent with GPA No.

960 has the potential to result in impacts to four known, plus other presently unknown historic resources. Three of the four known sites are under preservation by a public or non-profit entity. The fourth site, Riverside Cement Co., is privately owned and could potentially be subject to future development. Future development could also result in the disturbance of vacant lands and possible conversion of existing agricultural lands to various developed uses. This development could cause the destruction or loss of a known or unknown historical resource, as defined in Section 15064.5 of the State CEQA Guidelines.

2. Regulatory Compliance for Impact 4.9.A

As detailed and explained below, compliance with existing laws, regulatory programs, General Plan policies, are sufficient to ensure that substantial adverse change in the significance of historical resources as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Historic properties and resources are protected under a wide variety of federal, state and county regulations including Riverside County Ordinance No. 578 and the state and federal programs outlined in Section 4.9.2 (Existing Setting – Cultural and Paleontological Resources), above, that would prevent substantial adverse change in the significance of historical resources. These programs afford preservation or mitigation to historic resources in a variety of ways.

National Historic Preservation Act (NHPA): NHPA, in particular Section 106, serves to ensure that public property meeting federal standards for listing or eligibility are identified and given appropriate environmental review under CEQA. This applies to both typical "historic" resources, such as buildings, structures and landscapes, as well as to archeological resources, such as those that may yield "important information in history or prehistory."

Native American Graves Protection and Repatriation Act (NAGPRA): Compliance with NAGPRA would ensure any human remains or funerary artifacts associated with a Native American descendant are handled appropriately. This includes protecting known burial sites from disturbance and carefully controlling the removal of any Native American human remains or related objects, as well as appropriate coordination between Riverside County and Tribes. Projects in Riverside County requiring federal action (e.g., issuance of a federal CWA Section 404 permit by the ACOE) also trigger these federal requirements.

In the case of General Plan Amendments and Specific Plans, adherence to California's Traditional Tribal Cultural Places Act, Section 65352.3 of the Government Code (Senate Bill 18) would be used to ensure that historic and prehistoric cultural resources are considered prior to project approval and that mitigation measures or conditions of approval appropriate to site conditions are applied to prevent significant impacts to cultural resources. Specifically, the law requires the County of Riverside to consult with Native American groups at the earliest point in the land use planning process regarding potential means to preserve Native American places of prehistoric, archeological, cultural, spiritual and ceremonial importance.

Actions by the U.S. Army Corps of Engineers: Appendix C of Title 33 CFR Section 325 establishes procedures to be followed by the U.S. Army Corps of Engineers (ACOE) to fulfill the requirements of the NHPA, as well as other applicable historic preservation laws and Presidential directives related to historic resources potentially affected by ACOE actions (including issuance of permits pursuant to the federal Clean Water Act [CWA]). It specifies that when a project's authorization requires a federal action (for example, issuance

of permit pursuant to Section 404 of the CWA), the project must comply with the requirements of Section 106 of the NHPA.

Traditional Tribal Cultural Places Act (Government Code Section 65352.3): This program ensures appropriate CEQA review of all discretionary projects. To that end, a Riverside County Archeologist reviews prospective cultural (including archeological) impacts of land use projects, implements explicit review procedures (as described in more detail above) and applies standard conditions of approval as required for projects with potential for disturbing or uncovering historical or archeological resources. These conditions include requirements for site monitoring during construction, actions to take if a resource is uncovered during grading/construction and also documentation and reporting requirements to verify compliance (see Section 4.9.2 above). They also establish specific protocols to be followed should Native American remains be discovered in order to ensure compliance with state laws, for example, PRC Section 5097, as well as for the discovery of any human remains, whether modern, historic or prehistoric. Above all, adherence to the Riverside County Planning Department's established cultural resources policies, procedures and conditions of approval would ensure historic and prehistoric cultural resources are considered prior to approval of projects subject to CEQA.

California Register of Historic Resources: The State's Office of Historic Preservation (OHP) manages and oversees the California Register of Historic Resources (CRHR), which is intended to serve as "an authoritative guide to the state's significant historical and archeological resources." This program serves as a resource to identify and convey the significance of sites that the State of California deems historic resources. Table 4.9-A identifies those resources within Riverside County.

Regulation of Cultural Resources (Public Resources Code Section 5097): This program outlines the requirements for cultural resource analysis prior to the commencement of any construction project on state lands and specifies that the unauthorized disturbance or removal of resources located on public lands (including those owned by counties) and prohibits the destruction of objects of antiquity without a permit on public lands. As indicated above, the County of Riverside employs an archeologist to review prospective cultural impacts of land use projects, implement explicit review procedures and apply standard conditions of approval as required for projects with potential for disturbing or uncovering historical or archeological resources.

California Environmental Quality Act: Compliance with this state law would ensure that future land use projects accommodated by GPA No. 960 would be reviewed with consistent standards for determining historic resources and their respective significance (CCR Section 15064.5 (a)). Further, CCR Section 15064.5(b)) provides guidance to the County of Riverside in determining the "substantial adverse change" that may occur as the result of a future site specific project. Section 15064.5(c) of the State CEQA Guidelines also establishes that if "maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction" of the historical resource is conducted "in a manner consistent with" the [U.S.] Secretary of the Interior's Standards for the Treatment of Historic Properties (Weeks and Grimmer, 1995), then the project's impact on the historical resource "shall generally be considered mitigated to below a level of significance."

Lastly, CCR Section 15126.4(b) specifies that when "data recovery through excavation is the only feasible mitigation," a data recovery plan shall be prepared and adopted prior to any excavation being undertaken. The data recovery plan is designed to provide for adequately recovering the scientifically consequential information from and about the historical resource using current industry standards in archeological methods. In Riverside County, the resultant study is deposited with the Eastern Information Center at UCR. Any human remains recovered shall be treated in accordance with the provisions of HSC Section 7050.5.

Riverside County Ordinance No. 578 – Historic Preservation Districts: Compliance with this ordinance prevents the construction or alteration of any building or structure within an adopted Historic Preservation

District, except in strict compliance with the plans approved in conjunction with the issuance of a Certificate of Historic Appropriateness by the Riverside County Planning Director. The ordinance also sets specific criteria to be used in determining how such certificates are to be used in order to preserve the "historical significance and related construction theme" of the Historic District. At the time of EIR No. 521's NOP release on April 13, 2009, there were no Historic Preservation Districts in Riverside County.

b. Compliance with Existing General Plan Policies and County Procedures

The following existing policies of the Riverside County General Plan would ensure that no substantial adverse changes in the significance of a historic resource would occur as a result of GPA No. 960. Further, the following existing Riverside County procedures and conditions of approval would also ensure that no substantial adverse changes in the significance of an archeological resource would occur as a result of GPA No. 960. See Section 4.9.3.E for full text of each of the policies, procedures and conditions of approval mentioned below.

Policies OS 19.2 - 19.5: Compliance with these policies would ensure that projects are adequately reviewed for historic resources prior to approval; that appropriate mitigation measures are developed and incorporated into project design and project conditions of approval; and ensure that projects are appropriately reviewed for archeological resources and conditioned to comply with applicable state and federal regulations.

Riverside County Planning Department Procedures: Compliance with the Planning Department procedures would further ensure that projects are adequately reviewed; additional information is collected where warranted; archeological resources are identified and, where significant, preserved; human remains are treated in accordance with applicable laws; and Tribal participation occurs pursuant to SB 18 guidance when applicable;

General Conditions of Approval for Cultural Resources: Project-level compliance with conditions of approval is enforceable by the County of Riverside. When the Riverside County Archeologist ascribes conditions to a land use project, these measures are implemented at the appropriate stages of the land use development process. Project applicants must satisfy the terms of their conditions of approval before they may be authorized to implement subsequent stages in their land use development process.

c. Compliance with Proposed New or Revised General Plan Policies

Revised Policy LU 4.5 of the Riverside County General Plan would contribute to ensuring that development impacts to historic resources would be less than significant. Utilization of this policy ensures that land use projects with historically significant structures have flexibility to vary from existing building and zoning codes to preserve such structures thereby facilitating preservation of historical buildings. See Section 4.9.3.F for full text of the policy.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, it was found that General Plan policies related to historic resources would "help reduce the effects of growth and development by requiring development proposals to be evaluated for the presence of historical resources; by protecting historic buildings from demolition; and providing capital for preservation of historic buildings." However, CEQA mitigation measures were developed to ensure that "future development within the county would not have any significant adverse impacts on historic resources." Because one measure (4.7.1B) applies to the entire General Plan area, it remains applicable to the currently proposed GPA No. 960. This existing mitigation measure would prevent substantial adverse change in the significance of historical resources and therefore reduces impacts to such resources to less than significant.

Existing Mitigation Measure 4.7.1B: Avoidance is the preferred treatment for cultural resources. Where feasible, project plans shall be developed to allow avoidance of cultural resources. Where avoidance of construction impacts is possible, capping of the cultural resource site and avoidance planting (e.g., planting of prickly pear cactus) shall be employed to ensure that indirect impacts from increased public availability to the site are avoided. Where avoidance is selected, cultural resource sites shall be placed within permanent conservation easements or dedicated open space.

3. Finding on Significance for Impact 4.9.A

Compliance with the above regulatory programs, General Plan policies and existing Mitigation Measure 4.7.1B from EIR No. 441, GPA No. 960 would prevent substantial adverse changes in the significance of historical resources. Additionally, the imposition of Riverside County regulations, programs and procedures discussed above would further avoid or reduce this insignificant impact.

B. Would the project cause a substantial adverse change in the significance of an archeological resource pursuant to CCR Section 15064.5?

Impact 4.9.B – Cause the Destruction of Known Archeological Resources: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, may adversely affect known or presently unknown archeological resources. Compliance with existing laws, General Plan policies, Planning Department procedures, project-level conditions of approval for cultural resources, existing Mitigation Measure 4.7.1B from EIR No. 441 and new Mitigation Measure 4.9.B-N1 would be sufficient to ensure that this impact is less than significant with mitigation.

1. Analysis of Impact 4.9.B

Future development consistent with General Plan changes arising from GPA No. 960 would result in the disturbance of vacant lands and possible conversion of existing structures and agricultural lands to various developed uses. This development could cause the destruction or loss of known or unknown archeological resource, as defined in Section 15064.5 of the State CEQA Guidelines.

Significant archeological resources exist within Riverside County, based on what is known from histories of local Native American and other descendant communities, and archeological and historic surveys conducted by archeologists and historians. Given the amount of undisturbed land that remains available for development, the distinct possibility exists that subsurface archeological resources may be disturbed through grading activities. Impacts on archeological resources could result from future development authorized pursuant to General Plan, as updated by GPA No. 960, in the form of individual private development and public works projects. Because the scope of GPA No. 960 is essentially countywide, site-specific investigation of archeological resources is beyond the scope of this EIR. Instead this section focuses on developing a strategy to assess risks to archeological resources and reduce any impacts to such resources.

2. Regulatory Compliance for Impact 4.9.B

As detailed and explained below, compliance with the following laws, programs and General Plan policies would lessen adverse changes in the significance of archeological resources.

a. Compliance with Federal and State Regulations

Compliance with the following state, federal and county regulations and programs would lessen adverse changes in the significance of an archeological resource as a result of GPA No. 960.

National Historic Preservation Act: For the reasons outlined under Impact 4.9.B, the National Historic Preservation Act, in particular Section 106, would ensure that project sites on public land or subject to federal permits are identified and assessed for archeological resources, such as those that may yield "important information in history or prehistory."

Native American Graves Protection and Repatriation Act: Compliance with NAGPRA would ensure that any human remains or funerary artifacts associated with a Native American descendant are handled appropriately. And, in the case of General Plan Amendments and Specific Plans, adherence to California's Traditional Tribal Cultural Places Act (Senate Bill 18) would ensure that archeological resources are considered prior to discretionary project approval and that mitigation measures appropriate to site conditions are applied to prevent significant impacts to cultural resources. Specifically, the law requires Riverside County to consult with Native American groups at the earliest point in the land use planning process regarding potential means to preserve Native American places of prehistoric, archeological, cultural, spiritual and ceremonial importance.

Actions by the U.S. Army Corps of Engineers: Appendix C of Title 33 CFR Section 325 establishes procedures to be followed by the ACOE to fulfill the requirements of the National Historic Preservation Act (NHPA), as well as other applicable historic preservation laws and Presidential directives related to historic resources potentially affected by ACOE actions (including issuance of permits pursuant to the federal Clean Water Act [CWA]). It specifies that when a project's authorization requires a federal action (for example, issuance of permit pursuant to Section 404 of the CWA), the project must comply with the requirements of Section 106 of the NHPA.

Traditional Tribal Cultural Places Act (Senate Bill 18): In response to Senate Bill 18 and to ensure appropriate CEQA review of land use projects not otherwise deemed categorically exempt, a Riverside County Archeologist reviews prospective cultural (historic and pre-historic) impacts of land use projects, implements explicit review procedures (described in Section 4.9.2 above) and applies conditions of approval to proposed projects with the potential for disturbing or uncovering historical or archeological resources. These conditions include requirements for site monitoring during construction, actions to take if a cultural resource is uncovered and also documentation and reporting requirements to verify compliance. They also establish the specific protocols to be followed should Native American remains be discovered, in order to ensure compliance with state laws (e.g., PRC Section 5097), as well as for the discovery of *any* human remains, whether modern, historic or prehistoric.

The Riverside County Archeologist serves as cultural liaison to the Tribes and their descendant groups to facilitate consultation. When consultation is conducted for a proposed project, conditions of approval may be negotiated with the Tribes. Adherence to the Riverside County Planning Department's established cultural resources policies, procedures and conditions of approval (identified in Section 4.9.2, above) would ensure that archeological resources are considered prior to approval of all projects subject to CEQA.

California Environmental Quality Act: Compliance with this state law would ensure that future land use projects accommodated by GPA No. 960 would be reviewed for determining whether any unique archeological resources (CCR Section 21083.2(g)) would be affected. Section 21083.2 also provides guidance to Riverside County in determining "reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state." Lastly, CCR Section 15126.4(b) specifies that when "data recovery through

excavation is the only feasible mitigation," a data recovery plan shall be prepared and adopted prior to any excavation being undertaken. The data recovery plan would be designed to ensure adequate recovery of scientifically consequential information from and about the historical resource using current industry standards in archeological methods. In Riverside County, the resultant study would be deposited with the EIC at UCR. And, as per above, any human remains uncovered would be treated in accordance with HSC Section 7050.5.

Ordinance No. 578 – Historic Preservation Districts: Compliance with this ordinance prevents the construction or alteration of any building or structure within an adopted Historic Preservation District, except in strict compliance with the plans approved in conjunction with the issuance of a Certificate of Historic Appropriateness by the Riverside County Planning Director. The ordinance also sets specific criteria to be used in determining how such certificates are to be used in order to preserve the "historical significance and related construction theme" of the historic district. At the time of EIR No. 521's NOP release on April 13, 2009, there were no Historic Preservation Districts adopted in Riverside County.

b. Compliance with Existing General Plan Policies and County Procedures

The following existing policies of the Riverside County General Plan would lessen substantial adverse changes in the significance of an archeological resource from occurring as a result of future implementation of a project pursuant to GPA No. 960. Further, the following existing Riverside County procedures and conditions of approval would also lessen substantial adverse changes in the significance of an archeological resource. See Section 4.9.3.E for full text of each of the policies, procedures and conditions of approval mentioned below.

Policies OS 19.2, 19.3, 19.4, 19.5: Compliance with these policies would ensure that proposals are adequately reviewed for archeological resources prior to approval; that appropriate mitigation measures are developed and incorporated into project design and/or conditions of approval; and, that all applicable state and federal regulations are applied as warranted.

Riverside County Planning Department Procedures: Compliance with the Planning Department procedures outlined in Section 4.9.3.D would further ensure that projects are adequately reviewed, additional information is collected where warranted, archeological resources are identified and, where significant, preserved, that any human remains uncovered are treated in accordance with applicable laws and, lastly, that Tribal participation occurs pursuant to SB 18 guidance when applicable.

General Conditions of Approval for Cultural Resources: Future development projects approved by Riverside County include a set of conditions of approval that are enforced by the County of Riverside. When the Riverside County Archeologist places conditions of approval on a land use project, the measures are implemented (and verified by the County of Riverside) at various stages of the land use development process. Project applicants must satisfy their conditions of approval before being authorized to implement subsequent stages of the development process (for example, requirements that must be met before a subdivision map can be recorded, before a grading permit, building permit or occupancy can be issued, etc.).

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, it was found that "although Riverside County and the General Plan [contains] policies to protect and minimize the effects of prospective growth on archeological resources, the potential exists for destruction of known archeological resources to occur if mitigation is not provided to protect such resources." (Final EIR No. 441, page 4.9-27) Mitigation Measure 4.7.1B was imposed to "ensure that future development in the county would not have any significant adverse impacts on historic

resources." Because 4.7.1B applies to the entire General Plan area, it remains applicable to the currently proposed GPA No. 960.

Existing Mitigation Measure 4.7.1B: (See Impact 4.9.A, above, for the full text of this measure.)

3. Additional Project-Specific Mitigation for Impact 4.9.B

Despite all of the above measures that lessen substantial adverse changes in the significance of an archeological resource impacts to archeological resources, additional project-specific mitigation measures are necessary to further avoid, reduce or minimize impacts. New Mitigation Measure 4.9.B-N1 would lessen the impact by providing for dialog with the appropriate ethnic or cultural group concerning the dispensation of cultural resources where it is infeasible for those resources to be avoided or preserved in place. Implementation of this mitigation measure will ensure that project impacts to archeological resources are mitigated to less than significant.

NEW **Mitigation Measure 4.9.B-N1:** If avoidance and/or preservation in place of cultural resources is not feasible, the following mitigation measures shall be initiated for each impacted site:

a. Discoveries shall be discussed with the Native American tribal (or other appropriate ethnic/ cultural group representative) and the Riverside County Archeologist, and a decision shall be made with the concurrence of the Planning Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) appropriate for the cultural resource.

b. Further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to appropriate preservation or mitigation measures.

4. Findings on Significance for Impact 4.9.B

For the reasons presented above, implementation and compliance with the above-listed existing regulations, General Plan policies, county programs and procedures and existing Mitigation Measure 4.7.1B from EIR No. 441, as well as new Mitigation Measure 4.9.B-N1, would ensure that development accommodated by GPA No. 960 would have less than significant impacts on archeological resources.

C. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact 4.9.C – Cause the Destruction of Unique Paleontological Resources or Sites: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County and could result directly or indirectly in destruction of unique paleontological resources or sites or unique geological features. Compliance with existing laws, General Plan policies, Planning Department procedures and project-level general conditions of approval for paleontological resources would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.9.C

Future development within vacant areas of unincorporated Riverside County would result in the disturbance of vacant lands, including subsurface soils or unique geological features potentially containing paleontological resources. Significant paleontological resources, including fossilized large mammal remains, are known to exist

within Riverside County, based on past scientific studies, as well as from fossils and other resources that have already been recovered from various sites. Given the amount of undisturbed land still available for development, there remains the possibility that paleontological resources would be disturbed through grading activities. Impacts on paleontological resources would result from future development consistent with the General Plan, as updated pursuant to GPA No. 960, in the form of individual private development and public works projects.

For the purposes of this section, paleontological resources are defined as including fossilized remains of vertebrate and invertebrate organisms, fossil tracks and track ways and plant fossils. Because the scope of GPA No. 960 is essentially countywide, site-specific investigation of paleontological resources is beyond the scope of this EIR. Instead, this section focuses on developing a strategy to assess risks to paleontological resources and avoid or minimize any impacts to such resources.

At the countywide level, based on existing studies and geological data, Figure 4.9.3 shows areas within Riverside County that have the potential to contain paleontological resources. The figure indicates there are areas within Riverside County containing high or undetermined potential for paleontological resources. Changes to the General Plan resulting from GPA No. 960 could result in the future authorization of development within areas that contain high sensitivity for paleontological resources, resulting directly or indirectly in the destruction of a unique paleontological or geologic resource or site.

However, less than 19% of the land proposed for development under GPA No. 960 is considered to be in areas of high paleontological sensitivity. Approximately 76% of the land proposed for development under GPA No. 960 is considered to be in areas with low paleontological sensitivity and only 6% is considered to be of undetermined paleontological value. Future development could result in the disturbance of vacant lands and possible conversion of existing agricultural lands to various developed uses. This development could directly or indirectly cause the destruction of unique paleontological resources. Because the scope of GPA No. 960 is essentially countywide, site-specific investigation of paleontological resources is beyond the scope of this EIR. Instead this section focuses on developing a strategy to assess risks to paleontological resources and reduce any impacts to such resources.

2. Regulatory Compliance for Impact 4.9.C

As detailed and explained below, compliance with existing laws, regulatory programs, General Plan policies, Planning Department procedures, and general project-level conditions of approval are sufficient to ensure that impacts to paleontological resources or sites or unique geologic features as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following state, federal and county regulations would prevent significant impacts to paleontological resources or sites or unique geologic features.

Paleontological Resources Preservation Act (PRPA): The PRPA was specifically intended to codify the generally accepted practice of limiting collection on public (federal) land of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who obtain a permit from the appropriate state or federal agency and agree to donate any materials recovered to recognized public institutions where they will remain accessible to the public and to other researchers.

PRPA specifies that a permit is require for collecting paleontological resources from public land and also establishes conditions for the appropriate collection and curation processes such resources are subject to; in order to ensure preserve the scientific value of such materials. Federal regulations require that projects within the county needing federal action (e.g., issuance of a federal Clean Water Act Section 404 permit by the ACOE) also trigger application of these federal standards.

Actions by the U.S. Army Corps of Engineers: Appendix C of Title 33 CFR, Section 325, establishes procedures to be followed by the ACOE to fulfill the requirements of NHPA, as well as other applicable historic preservation laws and Presidential directives related to historic resources potentially affected by ACOE actions (including issuance of permits pursuant to the federal CWA). It specifies that when a project's authorization requires a federal action (for example, issuance of permit pursuant to Section 404 of the CWA), the project must comply with the requirements of Section 106 of NHPA.

Regulation of Paleontological Resources Pursuant to California's Public Resources Code: PRC Section 5097 specifies that the unauthorized disturbance or removal of archeological, historical or paleontological resources located on public lands (including those owned by counties, cities, etc.) is a misdemeanor. It also prohibits the knowing destruction of objects of antiquity without a permit (i.e., express permission) on public lands and provides for criminal sanctions for violators. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury and defacement of any paleontological feature on public lands (lands under state, county, city, district or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

b. Compliance with Existing Riverside County General Plan

The following existing policies of the Riverside County General Plan would prevent significant impacts to paleontological resources or unique geologic features. See Section 4.9.3.E for full text of each policy.

Policies OS 19.7: Compliance with this policy ensures projects with low paleontological sensitivity are adequately reviewed should fossils be encountered during site development and that projects are appropriately conditioned to comply with applicable state and federal regulations.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new policies of the Riverside County General Plan would further prevent significant impacts to paleontological resources or unique geological features. See Section 4.9.3.F for the full text of each of these policies.

Policies OS 19.6 and 19.8: Compliance with these policies ensures projects are adequately reviewed for paleontological resources prior to approval; that appropriate mitigation measures are developed and incorporated into project design and project conditions of approval; and that projects are appropriately conditioned to comply with applicable state and federal regulations.

Policy OS 19.9: By ensuring that the Riverside County Geologist directs newly found paleontological resources to a facility within Riverside County for their curation, this policy would further ensure preservation.

3. Finding on Significance for Impact 4.9.C

With implementation of the above-listed existing regulations, General Plan policies, Riverside County Planning Department procedures and project-level general conditions of approval, GPA No. 960 would have a less than significant impact on paleontological resources or sites or unique geologic features.

D. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Impact 4.9.D - Result in the Disturbance of Human Remains: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, adversely affecting human remains, including those interred outside formal cemeteries. Compliance with existing laws, regulatory programs, General Plan policies, Planning Department procedures, project-level general conditions of approval for cultural resources, and existing Mitigation Measures 4.7.1A and 4.7.1B would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.9.D

Future development consistent with GPA No. 960 would result in disturbance of vacant lands. This has the potential to disturb buried cultural resources and human remains, including those interred outside of formal cemeteries, in both known and previously unknown locations.

Policies in the current General Plan and Riverside County Planning Department procedures require site-specific cultural resources surveys be conducted prior to development occurring. A cultural resources survey, which includes a records search of both the archeological repository at the Eastern Information Center at UCR, as well as appropriate historical reference materials, can identify the existence of known above-surface human remains, archeological and historic resources, and also indicate the likelihood for buried cultural resources, including human remains. However, the survey cannot determine with certainty whether buried cultural resources or human remains would be found until the surface soil is disturbed, such as during grading activities. Destruction or disturbance of such surface or buried cultural resources during construction of individual private development or public works projects can occur if appropriate regulatory measures are not strictly adhered to, particularly state laws regarding the discovery of human remains.

2. Regulatory Compliance for Impact 4.9.D

As detailed and explained below, compliance with existing laws, regulatory programs, General Plan policies, Planning Department procedures, project-specific mitigation measures, project-level general conditions of approval for cultural resources and existing Mitigation Measures 4.7.1A and 4.7.1B from EIR No. 441 are sufficient to ensure that disturbances to human remains, including those outside formal cemeteries, would be less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following state, federal and county regulations would prevent significant disturbances to human remains, including those outside formal cemeteries. The full text for the following regulations can be found in Section 4.9.3 of this EIR.

Because most uncovered human remains and/or associated burial artifacts are of historical or prehistoric eras, they tend to be handled in a manner similar to archeological resources. In this aspect, the regulatory measures outlined for impacts to historical and archeological resources for Impacts 4.9.1 and 4.9.2, above, also apply for buried human remains. At the federal level, this includes the NHPA and, in particular, NAGPRA, which would ensure that any human remains or funerary artifacts associated with a Native American descendant, are handled appropriately. This includes protecting known burial sites from disturbance and ensuring careful control over the removal of any Native American human remains or related objects, as well as appropriate coordination between Riverside County and Tribes. Projects within Riverside County needing federal action (such as, issuance of a federal Clean Water Act Section 404 permit by the ACOE), would trigger application of these federal standards.

As human remains uncovered are most likely to be associated with prehistoric Native Americans, adherence to California's Traditional Tribal Places Act (Senate Bill 18) would help ensure that historic and prehistoric cultural resources are considered prior to discretionary project approval and that mitigation measures appropriate to site conditions are applied to prevent significant impacts to cultural resources. Specifically, the law requires Riverside County to consult with Native American groups at the earliest point in the land use planning process for certain types of projects regarding preservation of Native American places of prehistoric, archeological, cultural, spiritual and ceremonial importance.

Additionally, for every project subject to CEQA not otherwise categorically exempt, the County of Riverside reviews said project and implements conditions of approval (see Section 4.9.3 above). The project conditions are designed specifically to address land use projects with potential for disturbing or uncovering historical or archeological resources associated with Native American history or prehistory. These conditions include requirements for site monitoring during construction, actions for uncovering of a resource and also documentation and reporting requirements to verify compliance. Riverside County's conditions of approval establish the specific protocols to be followed should Native American remains be discovered in order to ensure compliance with state laws, for example, PRC Section 5097, as well as for the discovery of *any* human remains, whether modern, historic or prehistoric. Treatment for human remains can vary from leaving them in place to coordinating a relocation effort with the approval of the "Most Likely Descendant" from either a Native American Tribe or appropriate ethnic/cultural group.

Lastly, since uncovered human remains can also be of modern origins, and hence potentially part of a crime scene, specific County of Riverside regulations require contacting the Riverside County Coroner's Office for initial assessment of any uncovered human remains. Specifically, HSC Section 7050.5(b) states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to their treatment and disposition has been made. If the remains are determined not to be modern, subsequent treatment of the discovery is handled in coordination with the Tribe determined by the State of California to be the "Most Likely Descendant," see Existing Mitigation Measure 4.9.1A, below for additional details.

b. Compliance with County General Plan Policies and Procedures

The following existing policies of the Riverside County General Plan would contribute to ensuring that potential impacts to human remains and any associated artifacts resulting from future development accommodated by GPA No. 960 are less than significant. See Section 4.9.3.E for the text of each policy.

Policies OS 19.2 - 19.5: These policies ensure projects are adequately reviewed for cultural resources prior to approval; that appropriate mitigation measures are developed and incorporated into project design and/or conditions of approval; sites are avoided or conserved when possible; and, all efforts involve Native American

Tribes as dictated by SB 18 and Section 15064.5(d) of the State CEQA Guidelines. Policy OS 19.5 requires compliance with all applicable laws related to human remains.

Planning Department Procedures: Compliance with department procedures would further ensure projects are adequately reviewed; additional information is collected where warranted; archeological resources are identified and, where significant, preserved; human remains are treated in accordance with applicable laws; and Tribal participation occurs pursuant to SB 18 guidance when applicable.

General Conditions of Approval for Cultural Resources: Future development project-level compliance with conditions of approval is enforceable by the County of Riverside. When the Riverside County Archeologist ascribes conditions to a land use project, these measures are implemented at the appropriate stages of the land use development process. Project applicants must satisfy the terms of their conditions of approval before they may be authorized to implement subsequent stages in their land use development process. Specifically, a general condition concerning the finding of human remains is applied to each land use project by the Riverside County Archeologist. It requires that, if human remains are encountered, no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and their disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the NAHC shall be contacted within the period specified by law.

Subsequently, the NAHC shall identify the "Most Likely Descendant." The Most Likely Descendant shall then make recommendations and engage in consultation with Riverside County and the property owner concerning the treatment of the remains as provided in PRC Section 5097.98. Human remains from other ethnic/cultural groups with recognized historical associations to the project area shall also be subject to consultation between appropriate representatives from that group and the Riverside County Planning Director.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.7.1A and 4.7.1B were imposed to reduce impacts related to human remains. These measures remain applicable to this project and would lessen impacts to human remains, including those not in formal cemeteries, by ensuring that development which encounters human remains follow HSC directives and requiring avoidance as the preferred treatment of cultural resource sites. Because existing Mitigation Measures 4.7.1A and 4.7.1B apply countywide, they remain applicable to proposed GPA No. 960 as well.

Existing Mitigation Measure 4.7.1A: If human remains are encountered during a public or private construction activity, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The Riverside County Coroner must be notified within 24 hours. If the Coroner determines that the burial is not historic, but prehistoric, the State Native American Heritage Commission (NAHC) must be contacted to determine the most likely descendant (MLD) for this area. The MLD may become involved with the disposition of the burial following scientific analysis.

Existing Mitigation Measure 4.7.1B: (See Impact 4.9.A, above, for the full text of this measure.)

3. Finding on Significance for Impact 4.9.D

With implementation of, and compliance with, the above-listed existing laws, regulatory programs, General Plan policies, Riverside County Planning Department procedures and existing Mitigation Measures 4.7.1A and 4.7.1B from EIR No. 441, GPA No. 960 would have less than significant impacts on human remains and related artifacts, including those interred outside formal cemeteries.

4.9.7 Significance After Mitigation for Cultural and Paleontological Resources

Development and implementation activities resulting from the proposed project, General Plan Amendment No. 960, would be subject to a number of existing state and federal laws, General Plan policies, Riverside County Ordinance; Planning Department procedures, standard and tailored conditions of approval and existing Mitigation Measures 4.7.1A and 4.7.1B from EIR No. 441, as well as new Mitigation Measure 4.9.1-N1, as identified above. Collectively, these regulatory compliance and mitigation measures would reduce to below the level of significance any potential adverse changes in the significance of either archeological or historical resources, as they are defined in CCR Section 15064.5. The measures herein would also ensure that future impacts would neither directly nor indirectly destroy a unique paleontological resource or site, or unique geological feature. And, lastly, these measures would ensure that any impacts associated with the disturbance of any human remains, including those interred outside of formal cemeteries, would be less than significant. In total, these measures ensure that any significant adverse impacts to cultural resources resulting from future development accommodated by GPA No. 960 would be mitigated to below the level of significance.

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Section 4.10

Energy Resources

Section 4.10 Energy Resources

4.10.1 Introduction

Due to a number of convergent trends in California, including unprecedented growth and increasing energy costs, there has never been a more important time for a dialogue on energy issues and energy efficiency in Riverside County. As required by State CEQA Guidelines, Appendix F, this section assesses the potential impacts on energy resources, specifically electricity and natural gas consumption, as a result of the construction and operation of future development accommodated by the proposed project, General Plan Amendment No. 960 (GPA No. 960), as the Riverside County General Plan builds out over the next 50 or so years. Related information, particularly associated with energy conservation, is also presented in Section 4.7 (Greenhouse Gases).

A. Background on Energy

Most simply, "energy" refers to the force that enables "work" to be done. "Power," though often used interchangeably when referring to utilities, properly denotes the rate at which energy is generated and consumed. As an example, when a light bulb with a power rating of 100 watts (W) is turned on for one hour, the energy used (consumed) is 100 watt-hours (Wh) or one kilowatt-hour (kWh). By comparison, one kilowatt is also equal to approximately 1.34 horsepower.

For the purposes of this analysis, these terms are used to focus specifically on the types of energy and power associated with development and growth within Riverside County. In particular, energy refers to electric power used to run the myriad machines and equipment that serve modern life, such as for lighting, heating, communications, entertainment and computation, to name but a few. Energy sources can also refer to the fossil fuels and to the other ("alternative") sources of energy that either directly provide a service or utility (for example, using natural gas in a stove to cook a meal or heat a home) or provide them indirectly by generating electricity instead (i.e., solar arrays and hydroelectric dams). A third type of energy source, fuel, encompasses all energy used to power transportation systems – that is, "mobile sources," such as cars, trucks, buses, trains and airplanes. However, fuel is not discussed in this section; see Section 4.7 instead.

Energy efficiency involves the creation and use of technology to produce the same end product using less energy. For example, an "energy-efficient" air conditioner produces the same level of cooling capability while using less electricity than the average air conditioner on the market. Standards for energy efficiency are continually changing as technological innovations make better use of energy. For example, an air conditioner that was considered "energy efficient" 30 years ago is probably not energy efficient by today's standards.

Energy conservation, though often confused with energy efficiency, is a separate issue. While both involve reducing overall energy use, they achieve this goal in different ways. Conservation involves cutting waste of

energy whereas energy efficiency does not. Specifically, "conservation," as used herein refers to the use of *less* energy through various means. For the purposes of this section, energy conservation is defined in terms of:

- Decreased reliance on natural gas and electricity.
- Decreased per-capita energy consumption.
- Increased use of renewable energy sources.

Conservation can be achieved through a variety of proactive means involving forethought in design and conscientious application of behaviors to operations. For example, replacing an old air conditioner with an energy efficient one would still waste energy if it is run even when the building is empty. The equipment is "energy efficient," but it is the practice and mode of its operation (by humans) that ensures that its use "conserves" energy. In fact, in this example, it may even have been more economical (saving electricity and money) to simply shut off the a/c on weekends than to buy a new unit.

In addition to explicitly addressing a variety of adverse environmental impacts, Appendix F of the State CEQA Guidelines specifies a variety of information and issues related to energy conservation that should be included in an EIR. The energy conservation issues included throughout this section are intended to comply with the State CEQA Guidelines.

B. Data Sources

Data on electricity annual usage in unincorporated Riverside County for 2008 (the most recent year of complete data available) was collected from Southern California Edison (SCE) and the Imperial Irrigation District (IID), the two main power suppliers in Riverside County, as part of the Greenhouse Gas Technical Report for Riverside County, dated May 2011, prepared by Atkins for the project (see Appendix EIR-6). The study also provided natural gas consumption data for Riverside County from the Southern California Gas Company (SCGC). Any other countywide data on electricity or natural gas consumption used in this section came from the GHG Technical Report or directly from filings with the California Energy Commission (CEC), as noted. As per currently accepted standards, the energy consumption calculations developed for this project use factors published in the Southern California Air Quality Management District (SCAQMD) "CEQA Air Quality Handbook," as noted in the applicable sections below. Background information and energy sector forecasts were collected from a number of reports issued by the CEC and California Public Utilities Commission (CPUC), which regulate these utilities, as well as the providers themselves. These various reports are indicated in the text and bibliography. Any other information sources used in this section are noted where they occur. See References (Section 7.3 of this EIR) for full listings of all sources and citations.

4.10.2 Existing Environmental Setting – Energy Resources

Provision of adequate power and energy is a significant component of public services in Riverside County. The following section describes the current power and energy resources serving unincorporated Riverside County, including electricity, natural gas and alternative energy sources. For a map of the types and locations of alternative energy sources and generating facilities in Riverside County, see Figure 4.10.2.

A. Electricity Sources

Electricity can be generated from a variety of sources. These include non-renewable fossil-fuel dependent sources, such as oil, coal or natural gas-fired steam generation facilities. Because they require fossil fuel combustion, such facilities have an associated array of air pollutant emissions; as discussed in Section 4.6 (Air Quality) and Section 4.7 (Greenhouse Gases). Electricity production from steam generation can also be achieved using other (alternative), non-fossil heat sources, such as nuclear and solar energy. Waterways can include dams with hydroelectric stations which convert the kinetic energy of falling water to electricity with zero operational emissions. Similarly, another "renewable" source, wind turbines, convert the kinetic energy of moving air into electricity, also with zero emissions.

Table 4.10-A (Summary of Electrical Production Facilities in Riverside County), below, provides a summary of all electrical energy generating facilities in Riverside County producing 0.10 megawatts (MW) and greater, as reported by the CEC. Within Riverside County, there are a total of 13 electricity generating facilities that operate on fossil fuels (chiefly natural gas). This includes at least five facilities located within and operated by municipalities (Palm Springs, Riverside and Corona), as well as several private generators (for example, powering country clubs in Indian Wells and Palm Desert). In total, these 13 generators produce a total of 1,382.466 MW of online power within Riverside County; nearly three times the production of the next largest source of power generation (wind facilities). According to the CEC, all of the fossil-fuel powered electrical generators in Riverside County use natural gas as the "primary fuel" in their "oil/gas" type facilities. Some of the generating facilities located outside Riverside County that provide electricity for use in Riverside County use other fossil fuels, including diesel and coal, in addition to natural gas, as well as a variety of alternate (renewable) energy sources. The CEC tracks usage of renewable energy resources which include: biomass and waste, geothermal, solar, wind and "small hydroelectric," which the CEC defines as facilities generating under 30 MW.

1. Biomass / Bio-gas Energy (Waste-to-Energy)

'Waste-to-energy' facilities utilize biomass and bio-gas as fuels (energy sources) derived from organic waste, including consumer, industrial and green wastes, such as dead trees, tree branches, yard clippings, leftover crops, wood chips, bark, sawdust, tires and livestock manure, as well as gas produced by the decomposition of waste buried at landfills. Using biomass/bio-gas to generate energy (heat and/or electricity) is a reasonable supplement to fossil fuels since California alone produces more than 60 million tons of suitable wastes each year. If all of it was utilized, California could generate close to 2,000 MW of electricity, which is enough energy for about two million homes.

According to the State of California, Riverside County is home to three facilities in which electricity is generated via biomass or bio-gas. The El Sobrante Landfill generates 4.05 MW from landfill gas and Riverside County's Badlands Landfill generates 1.20 MW. In Mecca, the Colmac Energy facility generates 54.15 MW of electricity from biomass, specifically agricultural and wood wastes. In total, as shown in Table 4.10-A, biomass/bio-gas facilities in Riverside County generate 59.50 MW.

Table 4.10-A: Summary of Electrical Production Facilities in Riverside County

Plant Name[1]	Primary Fuel	Online Generation[1]	Agency Served	Plant Location	Plant Owner
HYDROELECTRIC					
Corona Small Conduit	Water	2.85 MW	CCDW	Corona	MWD
Whitewater Hydroelectric Plant - DWA	Water	1.38 MW	SCE	Whitewater	DWA
Lake Hemet MWD – North Fork	Water	0.65 MW	SCE	Hemet	LHMWD
Lake Mathews Hydro Recovery Plant	Water	4.90 MW	SCE	Riverside	MWD

Plant Name[1]	Primary Fuel	Online Generation[1]	Agency Served	Plant Location	Plant Owner
Perris Small Conduit	Water	7.94 MW	SCE	Perris	MWD
San Gorgonio Energy	*Water*	*0.73 MW*	*SCE*	*Banning*	*City of Banning*
~~San Gorgonio 1~~	~~Water~~	~~1.50 MW~~	~~BAN~~	~~Banning~~	~~SCE~~
~~San Gorgonio 2~~	~~Water~~	~~0.70 MW~~	~~BAN~~	~~Banning~~	~~SCE~~
San Gorgonio Upper	Water	0.41 MW	SCE	Beaumont	City of Banning
Temescal Small Conduit	Water	2.85 MW	CCDW	Corona	MWD
Diamond Valley Lake	Water	39.60 MW	SCE	Winchester	MWD
Snow Creek	*Water*	*0.30 MW*	*SCE*	*Palm Springs*	*DWA*
Subtotal (Hydroelectric)		***61.61 MW***			
FOSSIL FUEL					
Clear Cogen- Clearwater Project	*Oil / Gas*	*32.00 MW*	*CCDW*	*Corona*	*City of Colton*
Blythe Combined Cycle	*Oil / Gas*	*520.00 MW*	*SCE*	*Blythe*	*FPL Energy*
Coachella	*Oil / Gas*	*92,40 MW*	*IID*	*Coachella*	*IID*
City of Riverside Water Quality Control Plant	*Oil / Gas*	*1.20 MW*	*CoR*	*Riverside*	*City of Riverside*
Springs Generation	*Oil / Gas*	*40.00 MW*	*CoR*	*Riverside*	*City of Riverside*
Inland Empire Energy Center	*Oil / Gas*	*400.00 MW*	*SCE*	*Romoland*	*IEEC*
Riverside Energy Resource Center Units 3 & 4	*Oil / Gas*	*99.00 MW*	*CoR*	*Riverside*	*City of Riverside*
Riverside Energy Resource Center Units 1 & 2	*Oil / Gas*	*96.00 MW*	*CoR*	*Riverside*	*City of Riverside*
Windflower – Indigo	*Oil / Gas*	*135.00 MW*	*SCE*	*North Palm Springs*	*Intergen*
Sentinel Energy	*Oil / Gas*	*850.00 MW*	*SCE*	*Palm Springs*	*Competitive Power Ventures*
Corona Cogen	*Oil / Gas*	*47.00 MW*	*SCE*	*Corona*	*Corona Energy Partners*
CES Energy Alberhill	*Oil / Gas*	*0.56 MW*	*SCE*	*Elsinore*	*CES Alberhill, LTD*
CES Energy Corona – Pacific Clay	*Oil / Gas*	*0.60 MW*	*SCE*	*Corona*	*Pacific Clay Products*
Municipal Cogen	*Oil / Gas*	*1.30 MW*	*SCE*	*Palm Springs*	*City of Palm Springs*
City of Palm Springs- Sunrise Plaza	*Oil / Gas*	*0.64 MW*	*SCE*	*Palm Springs*	*City of Palm Springs*
EUA/FRCII – Monterey CC	*Oil / Gas*	*0.12 MW*	*SCE*	*Palm Desert*	*Monterey Country Club*
EUA/FRCII – Palm Valley CC	*Oil / Gas*	*0.41 MW*	*SCE*	*Palm Desert*	*Palm Valley CC*
EUA/FRCII – Vintage CC	*Oil / Gas*	*0.60 MW*	*SCE*	*Indian Wells*	*Ridgewood Power Corp.*
Subtotal (Fossil Fuel)		***2316.83 MW***			
WIND					
Mountain View III	*Wind*	*22.44 MW*	*SCE*	*North Palm Springs*	*PPM Energy, INC.*
Enxco IV	*Wind*	*18.70 MW*	*SCE*	*Cabazon*	*Enxco*
Alta Mesa- Phase III	*Wind*	*9.50 MW*	*SCE*	*Palm Springs*	*Tenderland Power Company*
Whitewater Hill	*Wind*	*61.50 MW*	*SCE*	*North Palm Springs*	*Shell Wind Energy, INC.*
Dillon Wind Area 5	*Wind*	*15.00 MW*	*SCE*	*Desert Hot Springs*	*Dillon Wind LLC*
Dillon Wind Area 3	*Wind*	*15.00 MW*	*SCE*	*Desert Hot Springs*	*Dillon Wind LLC*
Dillon Wind Area 1	*Wind*	*15.00 MW*	*SCE*	*Desert Hot Springs*	*Dillon Wind LLC*
San Gorgonio Farms Wind Farm	*Wind*	*31.00 MW*	*SCE*	*Whitewater*	*San Gorgonio Wind Farms, INC.*
Edom Hills Project 1	*Wind*	*21.10 MW*	*SCE*	*Cathedral City*	*AE Power Services LLC*
Difwind II	*Wind*	*5.50 MW*	*SCE*	*Palm Springs*	*Enxco*
Difwind I	*Wind*	*7.30 MW*	*SCE*	*Palm Springs*	*Enxco*
Difwind V	*Wind*	*11.70 MW*	*SCE*	*North Palm Springs*	*Enexco*
Robertson's Ready Mix	*Wind*	*2.00 MW*	*SCE*	*Cabazon*	*Foundation CA Fund V, LLC*
Nestle Waters	*Wind*	*3.20 MW*	*SCE*	*Cabazon*	*Foundation CA Fund V, LLC*
Wagner Wind, LLC	*Wind*	*6.00 MW*	*SCE*	*Palm Springs*	*WKN Wagner LLC*
Mountain View IV	*Wind*	*48.00 MW*	*SCE*	*Palm Springs*	*AES Corporation*

Plant Name[1]	Primary Fuel	Online Generation[1]	Agency Served	Plant Location	Plant Owner
Wintec Energy #2-A	*Wind*	*1.32 MW*	*SCE*	*North Palm Springs*	*Wintec Energy, LTD*
Cabazon Power Partners, LLC	*Wind*	*41.00 MW*	*SCE*	*Cabazon*	*FPL Energy Cabazon Wind*
Green Power 1	*Wind*	*8.00 MW*	*SCE*	*San Gorgonio*	*Green Power Partners I, LLC*
LG&E Power, INC – 6030	*Wind*	*13.50 MW*	*SCE*	*San Gorgonio*	*Fred Noble*
LG&E Power, INC - 6035	*Wind*	*5.01 MW*	*SCE*	*San Gorgonio*	*San Gorgonio Wind Farms, INC.*
LG&E Power, INC - 6098	*Wind*	*9.35 MW*	*SCE*	*San Gorgonio*	*Wind Power Partners*
Euiph Wind Farm	*Wind*	*25.40 MW*	*SCE*	*Desert Hot Springs*	*EUI Management PH, INC*
Sunbelt 1 & 2	*Wind*	*11.00 MW*	*SCE*	*Desert Hot Springs*	*Seawest Energy Group*
Painted Hills Wind Developers	*Wind*	*19.20 MW*	*SCE*	*North Palm Springs*	*Desert Power Associates*
LG&E Power, INC. – 6118	*Wind*	*6.20 MW*	*SCE*	*North Palm Springs*	*Sigmund J. Lichter*
Wintec Energy, LTD	*Wind*	*5.93 MW*	*SCE*	*Palm Springs*	*Wintec Energy, LTD*
Mesa Wind Power Corp	*Wind*	*29.90 MW*	*SCE*	*Whitewater*	*Brookfield Renewable Power Group*
Foras Energy, INC. – 6088	*Wind*	*14.15 MW*	*SCE*	*North Palm Springs*	*Energy Conversion*
Foras Energy, INC. – 6090	*Wind*	*24.57 MW*	*SCE*	*North Palm Springs*	*Mark Technologies Co.*
Pheonix Wind	*Wind*	*2.10 MW*	*SCE*	*North Palm Springs*	*PPM Manzana LLC/ Iberdrola Renewables, INC.*
Foras Energy, INC. - 6053	*Wind*	*11.72 MW*	*SCE*	*North Palm Springs*	*Difwind Partners*
San Gorgonio Westwinds II, LLC	*Wind*	*43.00 MW*	*SCE*	*North Palm Springs*	*Terra-Gen Power*
Karen Avenue Wind Project	*Wind*	*11.70 MW*	*SCE*	*North Palm Springs*	*EUI Management PH, INC.*
NAWP INC. - 6087	*Wind*	*35.00 MW*	*SCE*	*North Palm Springs*	*Altech Energy, INC.*
Altech III	*Wind*	*25.10 MW*	*SCE*	*North Palm Springs*	*AES Wind Generation*
Subtotal (Wind)		***639.09 MW***			
BIOMASS / BIO-GAS					
Colmac Energy- *Mecca Plant*	WTE-1[2]	54.15 MW	IID	Mecca	Colmac Energy
El Sobrante Landfill Gas Generation	WTE-2[2]	4.05 MW	SCE	Corona	WM Energy Solutions
RCWMD – Badlands Power Plant[3]	WTE-3[2]	1.20 MW	SCE	Moreno Valley	RCWMD
Subtotal (Biomass / Bio-gas)		***59.40 MW***			
GRAND TOTAL		***3076.93 MW***			

Key: CCDW = City of Corona Dept. of Water
IEEC = Inland Empire Energy Center
LHMWD = Lake Hemet Municipal Water District
RCWMD = Riverside County Waste Management Dept.
CoR= City of Riverside
DWA = Desert Water Agency
IID = Imperial Irrigation District
SCE = Southern California Edison
MWD = Metropolitan Water District of So. California

Footnotes:
1. Table lists all facilities producing 0.10 MW or greater.
2. WTE = Waste-to-energy. WTE facilities use the following fuel sources: WTE-1: biomass, agricultural and wood waste; WTE-2: landfill gas; WTE-3: landfill gas and mixed solid waste.
3. Generation data per correspondence from Riverside County Waste Management Department, dated February 8, 2013.

Source: CEC, California Energy Almanac. 2010.

2. Hydroelectric Power

Hydroelectric power uses the kinetic energy of moving water to make electricity. The water from a river or reservoir can be sent through a hydroelectric power plant or powerhouse. This method is one of the largest producers of renewable energy in the world. In California, about 15% of all electricity comes from hydroelectric means. Currently, California law limits the types of hydroelectric power that can be considered "renewable

energy" due to growing concerns about the effects on fish and other wildlife. Hydroelectric facilities must be smaller than 30 MW and typically consist of hydrogenerators placed in water aqueducts.

A total of 11 hydroelectric facilities are located in Riverside County, including at least four that are within municipalities to serve those cities (Corona and Banning). All but one are "small hydroelectric facilities," that is, producing under 30 MW. The sole "large" facility is operated by the Metropolitan Water District of Southern California (MWD) at Diamond Valley Reservoir near Hemet, with an online capacity of 39.6 MW. By comparison, the next-largest facility in Riverside County, the Perris Small Conduit, only produces 7.9 MW. None of the ten "small" facilities individually reach even 10 MW. Most of these smaller facilities consist of inline or conduit-based turbines and similar such facilities. Other than two facilities operated by SCE in the San Gorgonio area, one each operated by Lake Hemet Municipal Water District and the Desert Water Agency, all facilities are operated by MWD. In total, as shown in Table 4.10-A, hydroelectric facilities located within Riverside County generate 63.508 MW.

3. Solar / Photovoltaic Energy

California's "Renewable Energy Portfolio" standard, which is discussed in more detail below, requires electric utility companies to obtain 20% of their power from renewable energy sources by 2010 and 33% by 2020. A main source of renewable power for the portfolio will be solar energy. Sunlight can be changed directly into electricity using solar cells, also known as photovoltaic cells. Photovoltaic cells can be found on many small appliances, such as calculators. However, they were first developed for use on space satellites. Electrical energy from solar cells can be used directly in a home or business for lights and appliances. Throughout Southern California, many homes and businesses utilize private solar cells (rooftop units, for example) for their individual sites' electricity needs.

On a commercial/industrial basis, large-scale solar arrays, including photovoltaic, as well as other types, such as "concentrated solar power" (heliostats, etc.), are used to provide electricity directly into the regional grid. The largest solar facility in the world, the Solar Energy Generating Systems, is located in the Mojave Desert north of Riverside County and consists of nine parabolic solar units (nearly a million mirrors spread across 1,600 acres) generating 354 MW of electricity annually.

Within Riverside County itself, no large-scale solar projects were in operation at the time the NOP was issued in April 2009. However, a number of large solar projects have been proposed on federal Bureau of Land Management (BLM) land in the desert of eastern Riverside County. The "Desert Sunlight Solar Farm," an approximately 4,144-acre, 550-megawatt project just east of Palm Springs was approved by BLM in August of 2011 *and as of 2014 is still in construction with hopes of coming on-line in 2015*. BLM has right-of-way requests encompassing more than 300,000 acres for development of 34 large solar thermal power plants totaling approximately 24,000 MW. Not all of these projects, however, have reached the CEC or CPUC application stage. In Riverside County, a huge (10-square mile) parabolic solar facility was approved by the U.S. Department of Interior and CEC in 2010 for construction on public (BLM) lands near Blythe. Once built, the facility will provide upwards of 1,000 MW. Other CEC-approved projects in Riverside County include Genesis Solar, a 250-MW solar trough project, the 500-MW solar trough Palen Solar Power Project and the 150-MW solar tower Rice Solar Energy Project. It should be noted that these projects will add additional electricity to the Western Grid, rather than Riverside County directly.

4. Wind Energy

The kinetic energy of the wind can be changed into other forms of energy, namely mechanical or electrical energy. Blowing wind spins the blades on a wind turbine which in turn rotate a shaft that turns a generator to make electricity. This method can be used on both a large and small scale; one turbine could produce enough electricity to power a school or a home. In addition, there are wind "farms" where turbines are grouped together in the windiest areas. About 11% of the world's wind-powered electricity is generated in California, with one of the three most prominently windy areas occurring in the San Gorgonio Pass of Riverside County (the other two areas are Altamont Pass east of San Francisco and the Tehachapi Pass south of Bakersfield). Together these three areas make enough electricity to supply an entire city the size of San Francisco.

Of the "alternative" energy-generating facilities located in Riverside County, wind-energy conversion systems (WECS) are the largest contributor by far. With 504.044 MW from 28 wind facilities in Riverside County, this is nearly ten times the amount generated by either biomass/bio-gas or hydroelectric sources. Riverside County's 28 WECS facilities are located entirely within the San Gorgonio Pass/Palm Springs region and the northern end of the Coachella Valley.

5. Geothermal

According to PRC Section 6903, geothermal resources are defined as:

> *"The natural heat of the earth, the energy in whatever form, below the surface of the earth present in, resulting from or created by, or which may be extracted from such products obtained from naturally heated fluids, brines, associated gases and steam, in whatever form, found below the surface of the earth, but excluding oil, hydrocarbon gas or other hydrocarbon substances."*

Over the years, numerous studies have been performed to determine the nature of geothermal resources in the Salton Trough, including studies of temperatures and temperature gradients, ground levels and slopes, seismicity, groundwater and hydrology of underlying waters, etc. In particular, the University of California at Riverside conducted an extensive study of Imperial Valley between 1965 and 1970. Together, this data has facilitated the development of economically efficient geothermal power plants in the Imperial County portion of the basin, south of the southern end of the Salton Sea.

Under the Federal Geothermal Steam Act, the U.S. Geological Survey (USGS) mapped 13 areas as "Known Geothermal Resources Areas" within California; none occur within Riverside County (though nine occur in Imperial County). There are, however, a number of locations with hot springs and other localized geothermal heat sources in Riverside County. In particular, there are mapped geothermal resources around the Salton Sea region, predominantly at the southeast end of the sea (in Imperial County, which addresses this resource through a Geothermal/Alternative Energy and Transmission Element in their General Plan). While there are four geothermal plants operating in Imperial County (generating nearly 1,800 MW of electricity), there are none within Riverside County. Though not used for commercial energy generation, geothermal water is used by fish farms in the Salton Sea area to accelerate growth rates and increase yields of farmed fish. Thermal waters are obtained from onsite wells at these farms.

B. Electricity Providers Serving Riverside County

Three companies provide the majority of the electricity serving unincorporated Riverside County: the largest, by far, is investor-owned Southern California Edison, which serves unincorporated western Riverside County. The

public providers, Imperial Irrigation District (IID) and Anza Electric Cooperative (AEC), provide the balance. IID serves the eastern desert portion of Riverside County and AEC serves the central mountainous region (the San Jacinto Mountains located between eastern and western Riverside County). Figure 4.10.1 (Electricity Providers Serving Riverside County) shows the electricity providers serving Riverside County. In addition to these providers, the cities of Banning, Corona, Moreno Valley and Riverside also provide electrical service to local customers; but only within their city boundaries for the most part. In 2009, the State of California reports these four cities provided a total of 2,386 gigawatts (GWh) of electricity to their customers (one gigawatt equals 1,000 megawatts [MW]). However, since they do not serve customers within unincorporated Riverside County, these municipal providers are not discussed further in this section.

1. Southern California Edison

SCE provides electrical service to customers within a 50,000-square mile area covering nearly 14 million people in 11 counties in the southern half of California, including western Riverside County. It provides electricity to users via 16 utility interconnections and nearly 5,000 different transmission and distribution circuits. SCE facilities include hydropower, nuclear and coal-powered facilities: the Big Creek Hydroelectric System (a collection of six major reservoirs, 27 dams and nine power plants in the Central Sierra Nevada Mountains northeast of Fresno), the San Onofre Nuclear Generating Station (SONGS) in Orange County near San Clemente and the Mojave Generating Station in the eastern high desert north of Riverside County. SCE also maintains and operates transmission and distribution infrastructure to provide purchased power to end users throughout its service area.

California law requires all energy providers to furnish their electricity customers with a power content label, with information about the energy resources used to generate their electricity. These percentages are based on electricity sold to California consumers during the previous year, as reported to the CEC. For ~~the second quarter of 2009~~ *2012,* SCE projected their power mix to consist of: ~~16~~*20*% from eligible renewable sources (including *1* ~~2~~% biomass and waste, 9% geothermal, 1% small hydroelectric, 1% solar and *8*~~3~~% wind), plus *21*~~51~~% from natural gas, *7*~~10~~% from coal, ~~4~~*5*% from large hydroelectric, *7*~~18~~% from nuclear and less than *4*1% from "other." In total, SCE reported a total energy consumption of approximately *86,558*~~85,850~~ GWh in *2012*~~2009~~, the most recent year for which data is available from the CEC. An additional ~~4,531~~ *5,445* GWh were also "self-generated" within the SCE's planning area in *2012* ~~2009~~.

SCE has declared itself the nation's largest purchaser of renewable energy, buying and delivering approximately 13.6 million MWh in 2009. This includes electricity generated from wind (3.5 million MWh in *2009*), solar (845,000 MWh), biomass (899,000 MWh), geothermal (7.785 million MWh, 57% of its total renewables portfolio) and small hydroelectric suppliers (561,000 MWh). In total, in 2009 renewable sources provided nearly 17% of SCE's total energy delivery. This amount will increase with the completion of the "nation's largest wind transmission project," the Tehachapi Renewable Transmission Project (in Kern County, north of Los Angeles) currently under construction. When complete, this project will be capable of delivering 4,500 MW of electricity from wind farms and other generators in the region. Another 66.6 MW will be obtained from AES Mountainview via a wind farm in the San Gorgonio Pass region of Riverside County. SCE also contracts with a number of smaller (under 20 MW) renewable electricity generators. SCE also has a number of upgrades and expansions planned or underway for the region. Among these are various projects in or affecting Riverside County, as listed in Table 4.10-B (SCE Electricity System Projects), below.

Table 4.10-B: SCE Electricity System Projects

Project Name (In-Service Date)*	Location / Areas Served	New Services or Facilities	Status
Alberhill System Project (2014)	Lake Elsinore, Wildomar, Menifee and portions of unincorp. Riv. Co. (Temescal Valley area)	New 500/115 kV substation, two 500-kV and one 115-kv transmission lines plus modify existing lines	Under regulatory review
Devers-Palo Verde No. 2 Project (2013)	Riverside County (approx. along I-10 I-215, approx. between Blythe and Menifee)	New 500/220 kV Colorado River substation near Blythe, two new 500-kv transmission lines, one 111-miles long and one 42-miles long	~~Under regulatory review; Construction to begin mid 2011~~ *Completed*
Devers-Mirage (mid 2011)	Palm Springs, Rancho Mirage, Palm Desert, Indian Wells, Cathedral City and surrounding unincorp. areas, (including Thousand Palms)	Split existing 115-kV (Devers) sub-transmission system into two, with new 115-kV sub-transmission line and upgrades to existing lines and equipment	~~Construction to begin in 2011~~ *Completed*
El Casco System Project (mid 2012)	Banning, Beaumont, Cherry Valley, Yucaipa and adjacent unincorp. Riverside County	New substation and 115-kV transmission line, upgrade 15.4 miles of existing lines and equipment	~~Construction began in 2009~~ *Completed*
Valley-Ivy Glen Sub-transmission Line & Fogarty Substation Project (~~2012~~*2016*)	Lake Elsinore, Perris and unincorporated areas of southwest Riverside County	New 115/12 kV substation (Fogarty) and new 115-kV sub-transmission lines	Construction to begin in ~~2011~~*2015*
Lakeview Substation Project (late 2013)	Lakeview, Nuevo and unincorp. areas of western Riverside County	New 115/12 kV substation and 115-kV sub-transmission lines plus upgrades to existing equipment	Under regulatory review
Red Bluff Substation Project (mid 2013)	Desert Center and eastern unincorporated Riverside County	New 500/200 kV substation and two new transmission lines plus upgrades to existing equipment	Application filed with the CPUC (November 2010)
Triton Substation Proj. (Approx. 2012)	Temecula, Murrieta and southwestern Riv. Co.	New 115/12 kV substation and 12-kV sub-transmission line segment	~~Approved by CPUC in September 2010~~ *Complete*
Circle City Sub-Station and Mira Loma-Jefferson Sub-Transmission Line Project (2016)	*Corona, Chino, Norco, Eastvale, and Ontario.*	*New Sub-Station and Source Lines, plus 66Kv Sub-Transmission Line*	*Currently in Siting Phase*
West of Devers Upgrade Project (2020)	*Banning, Beaumont, Calimesa, unincorporated Riverside County, San Bernardino County*	*Replacement of 48 Miles of 220kV line with new double circuit 220 kV line.*	*Under Review by CPUC*
Valley South Sub-Transmission Project (2019)	*Menifee, Temecula, Murrieta, Wildomar, and unincorporated Riverside County*	*3.4 miles of 115kV Lines, Improvements to Valley Station*	*Developing Permit to Construct*

* Date proposed for completion of project and its placement into service.

Source: Southern California Edison website, URL: www.sce.com/PowerandEnvironment/Transmission/Projects ByCounty/RiversideCounty/default.htm. Accessed March 8, 2011*/ Updated October 27, 2014*.

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Data Source: California Energy Commission (2010)

- Anza Electric Cooperative, Inc.
- City of Riverside
- Colton Electric Utility Department
- Imperial Irrigation District (IID)
- San Diego Gas & Electric (SDG&E)
- Southern California Edison (SCE)
- All Others

*Agencies serving primarily municipal customers.

Figure 4.10.1

December 16, 2013

ELECTRICITY PROVIDERS SERVING RIVERSIDE COUNTY

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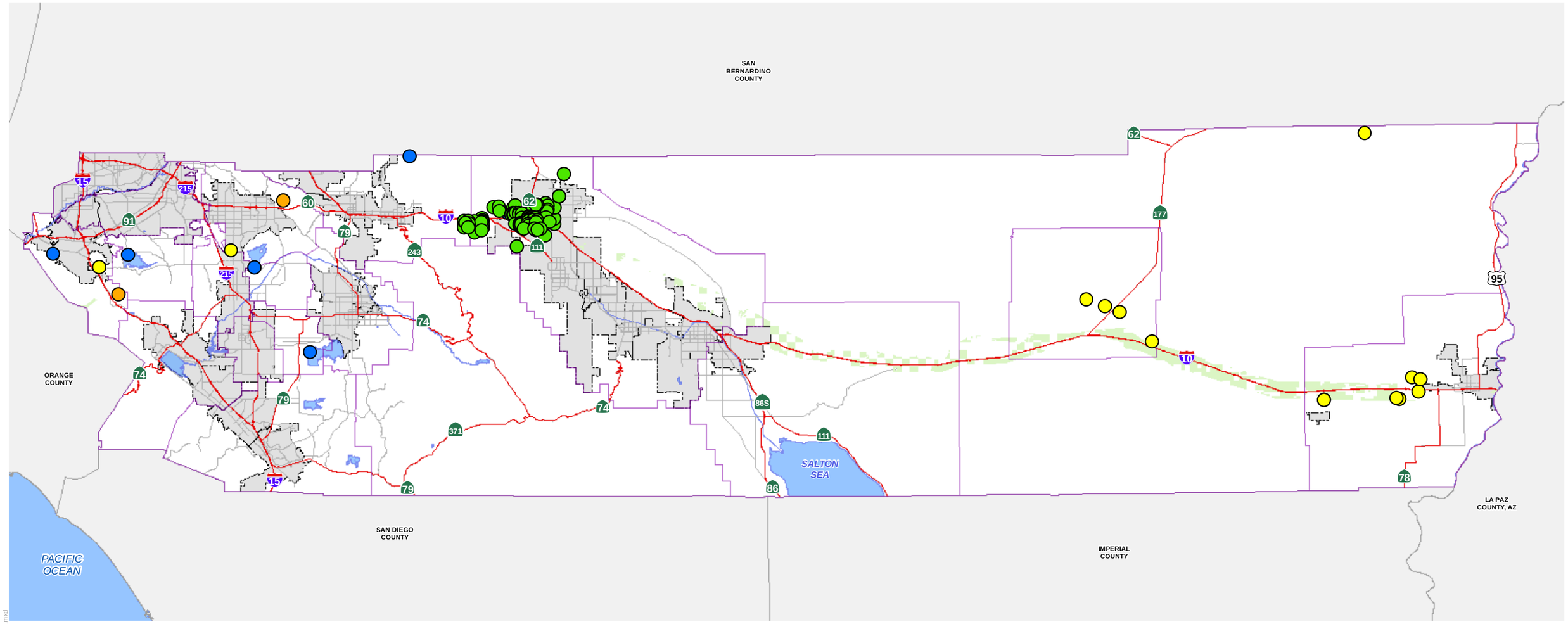

Data Source: California Department of Conservation (2013) and Riverside County (2013)

Renewable Energy Facilities

- Biomass
- Hydro
- Solar
- Wind
- Energy Right-of-Way Corridors

- Area Plan Boundary
- City Boundary
- Waterbodies
- Highways

Figure 4.10.2

December 16, 2013

Miles

0 10 20

ACIT GEOGRAPHIC INFORMATION SERVICES

RIVERSIDE COUNTY PLANNING DEPARTMENT

BOARD OF SUPERVISORS Riverside County California

RENEWABLE ENERGY RESOURCES

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2. Imperial Irrigation District

A publicly-owned power utility, IID provides electrical service to the southeastern end of the Coachella Valley, all of Imperial County and parts of San Diego County. The sixth-largest electrical utility in California, IID serves more than 145,000 customers and controls more than 1,100 MW of energy. Roughly 30% of its power is produced locally via hydroelectric facilities along the All-American Canal. Steam-generation facilities and several natural gas turbines provide the balance.

According to filings with the CEC, in ~~2010~~*2013* IID had a projected power mix of *34.27*~~7.86~~% from eligible renewable sources (including *11.46*~~0.02~~% biomass and waste, *6.23*~~0.20~~% geothermal, *7.69*~~41~~% small hydroelectric, *4.83*~~0.23~~% wind and ~~less than 0.01~~*4.83*% solar), plus *34.59*~~47.46~~% from natural gas, *12.28* ~~29.48~~% from coal, *3.72*~~10.34~~% from large hydroelectric, *2.88*~~4.63~~% from nuclear and *0.01*~~0.23~~% from "other." Altogether, IID reported a total energy consumption of approximately *3,398*~~3,314~~ GWh in *2012*~~2009~~, the most recent year for which CEC data was available. An additional *21.52* ~~8.85~~ GWh were "self-generated" within the IID's planning area in *2012* ~~2009~~.

By *2016* ~~2014~~, IID will generate almost 25% of its annual energy requirements from renewable energy sources. Currently, generation sources used by IID include hydroelectric resources on the All-American Canal system (totaling approximately 250,000 MWh), plus natural gas and diesel-fuel generation facilities within or near IID's service territory. IID has entitlement to 3,679 MWh per month from the Parker-Davis Hydroelectric Project on the Colorado River in western Arizona. Also, as a member of the Southern California Public Power Agency, the IID participates in two projects: the San Juan Generating Station Unit 3, a 1,800-MW coal-fired plant in New Mexico that provides IID with up to 106 MW per hour, and the Palo Verde Nuclear Generation Station near Phoenix, Arizona. IID receives a small amount of energy (approximately 14 MW) from this nuclear station. IID also obtains energy and "ancillary services" from the Yuma Axis Steam Plant in Arizona and, rarely, up to 19.7 MW from an associated small gas-fired turbine also in Yuma. In terms of renewable energy sources, IID expects to have 103 MW online by 2016. IID has a number of upgrades and expansions planned or underway for the region. Among these are the following projects in or affecting Riverside County:

Table 4.10-C: Imperial Irrigation District Electricity System Projects

Project Name (In-Service Date)*	Location / Areas Served	New Services or Facilities	Status
Greenhunter Mesquite Biomass Generation Facility (2011)	District-wide	Enter into a power purchase agreement for 18 MW of biomass electricity generation	For 2011 delivery
Ice Bear Thermal Energy Storage Plant (2011)	District-wide	To provide 10 MW of load shifting & interruptible loads to achieve 50 MW of demand-side management	For 2011 delivery
El Centro Steam Plant Unit No. 3 (2012)	El Centro / District-wide	New 140-MW combined cycle generation facility at the existing El Centro Steam Plant	~~Under construction~~ *Completed*
Geothermal Generation (2014)	District-wide	Enter into a power purchase agreement for 50 MW of geothermal generation	For delivery by 2013
Geothermal Generation (2014)	District-wide	Enter into a power purchase agreement for 17 MW of geothermal generation with other So. Cal. Public Power Agency members	For delivery by 2014
SunPeak Niland Solar Electricity Gen. (2014)	District-wide	Enter into a power purchase agreement for 20 MW of solar thermal electricity generation	For delivery by 2014
Path 42 Transmission & New Lines (2016)	District-wide	New 500-kV transmission line and upgrades to Path 42 transmission lines	To be completed by 2016
Midway to Bannister Transmission Project (mid 2011)	Coachella Valley to Imperial County	New 35-mile 230-kV transmission line to connect the Midway and Bannister substations to geothermal resources in the Salton Sea region	Phase I completed early 2011

Project Name (In-Service Date)*	Location / Areas Served	New Services or Facilities	Status
Dixieland IV Transmission Project (2010)	District-wide	New 8-mile line to connect Imperial Valley and Dixieland substations	Portion completed in 2008
Ave 58 Substation (mid 2011)	District-wide	Add a new 161/92 kV transformer to existing Ave 58 substation	Under construction
PV-North Gila Transmission Project (2014)	Palo Verde and Imperial County, also Yuma, AZ	Participate in development of new 117-mile long 500-kV transmission line between Palo Verde and Yuma, AZ	MOU approved for Phase I
Multi-Substation Transmission Line Project (n/s)	Coachella Valley, Imperial County	New 500 kV line connecting the Imperial Valley, Midway and Coachella Valley substations plus upgrades to existing equipment	Planned project

* Date proposed for completion of project and its placement into service.
Source: Imperial Irrigation District, Integrated Resource Plan, 2010.

3. *Anza Electric Cooperative*

Located west of IID is the Anza Electric Cooperative (AEC), which is classed by the State of California as a rural electric cooperative. AEC provides electricity to a large portion of desert and mountainous central Riverside County (much of the region covered by REMAP [Riverside Extended Mountainous Area Plan], including Anza, Garner Valley, Pinyon Pines and parts of Aguanga). In total, AEC serves nearly 4,000 customers over a 500-square mile area.

AEC's main power supplier is the Arizona Electric Power Cooperative (AEPC), which generates and transmits electricity out of its Apache Generating Station east of Benson, Arizona. The facility consists of two coal-fired steam units each producing 195 MW of power, plus several gas turbines. In total, the station's gross rated output is 602 MW. In addition, two of its steam units have dual fuel capacity and can burn either coal or natural gas. Due to restructuring, power from the AEPC is transmitted to the AEC via a transmission system owned and operated by a separate entity, the Southwest Transmission Cooperative (SWTC). Their facilities include a 500-kV transmission line connecting the Palo Verde area to the Pinal West Switchyard located near Mobile, Arizona.

In total, according to CEC filings, AEC's electricity portfolio for ~~2009~~ *2012* consisted of ~~92~~*85*% coal and ~~7~~*4*% natural gas (from the Apache Generating Station), ~~plus~~ ~~1~~*6*% from large hydroelectric sources*, and 6% from unspecified sources*. None of these sources qualify as "eligible renewable sources" under California reporting standards. In total, AEC provided *47.85*~~45.01~~ GWh of electricity to their customers in *2012*~~2009~~, the most recent year in which data was available from the CEC.

C. Electricity Transmission

Essential to the region's energy supply are the high-voltage electric transmission connections to other energy markets. The transmission system provides a number of functions including: 1) enabling wholesale market transactions that help to stabilize electric prices; 2) improving system reliability and stability; 3) creating opportunities for establishing new electric generation stations; and 4) providing additional voltage support when needed. Although publicly available information is presented here, it should be noted that federal energy security requirements actually prevent energy providers from providing too much detail on transmission projects and locations.

Because of its importance at the regional, state and national levels, utility corridor planning occurs at all three of these levels, in addition to local. At the federal level, a multi-agency group (including the Bureau of Land Management, Departments of Energy and Defense, and the U.S. Forest Service) developed a West-wide Energy Corridor Plan designating energy corridors on federal lands in eleven states within the western U.S. pursuant to

Section 368 of the Energy Policy Act of 2005 (Public Law 109-58). Specifically, this law directed the various federal agencies to designate under their respective land management authorities corridors on federal lands for oil, gas and hydrogen pipelines, in addition to electricity transmission and distribution facilities (collectively known as "energy corridors"). In conjunction with the West-wide Energy Corridor plan, the agencies prepared and issued in 2008 a Final Programmatic Environmental Impact Statement for the same. In July of 2009, multiple organizations filed a complaint against the U.S. Department of the Interior, *et al.*, challenging various aspects of the agencies' Records of Decision, including charges of Endangered Species Act violations. In 2012, a settlement agreement was reached establishing "specific actions to mutually resolve the challenges in the Complaint" (per the West-wide Energy Corridor Programmatic EIS Information Center website). See *Wilderness Society, et al. v. United States Department of the Interior, et al., No. 3:09-cv-03048-JW (N.D. Cal.).* Figure 4.10.3 (Energy Transmission Corridors and Lines) shows the Section 368 utility corridor-designated federal lands occurring within Riverside County.

At the state level, regional and intrastate transmission line planning is undertaken by a number of agencies (see discussion under Section 4.10.3, Policies and Regulations). Through a variety of programs, including the Renewable Energy Transmission Initiative (RETI), the State of California has identified existing and future transmission system improvements planned to ensure the additional energy resources developed within the state to meet the state's renewable energy portfolio targets can be efficiently transmitted to the needed regions. RETI plans affecting Riverside County are also shown in Figure 4.10.3.

The specific transmission lines crossing the state are owned and operated by individual energy providers, both public and private. Two public utilities, SCE and IID, operate major electricity transmission lines in Riverside County. Major electricity transmission lines are those that carry a minimum of 220 kilovolts (kV) of power. SCE operates a 500-kV transmission line extending east-west through most of Riverside County. The 500-kV line follows the I-10 corridor from the Arizona border west to the San Gorgonio Pass area, veers south of I-10 toward Perris and then extends west from Perris into Orange County. From the San Gorgonio Pass area, multiple 220-kV lines run north of I-10 and follow San Timoteo Canyon into Redlands in San Bernardino County. Portions of the SCE 220-kV transmission lines also pass through the northwest corner of Riverside County.

The IID's transmission system consists of 500-kV, 230-kV, 161-kV and 92-kV transmission lines that run from northwestern San Bernardino County to Imperial County in the southeastern-most corner of California and further east into Arizona as well. The 500-kV line connects the Palo Verde Substation to the Northern Gila 500/69 kV substation near Yuma, Arizona, and the Imperial Valley 500/230 kV substation near El Centro. The system contains two major circuits, one of which connects with the SCE system at SCE's Devers and Mirage substations. Several other substations are also connected into the collector system with SCE. IID operates a 220-kV transmission line that extends from its Hinds water pumping plant located along I-10 west of Desert Center to its Iron Mountain pumping plant, in San Bernardino County, north of the intersection of State Route 62 (SR-62) and SR-177. In addition, energy from the San Juan Generating Station is transmitted via Western Area Power Administration's 500-kV substation near Palo Verde and delivered ultimately to IID's Blythe Substation.

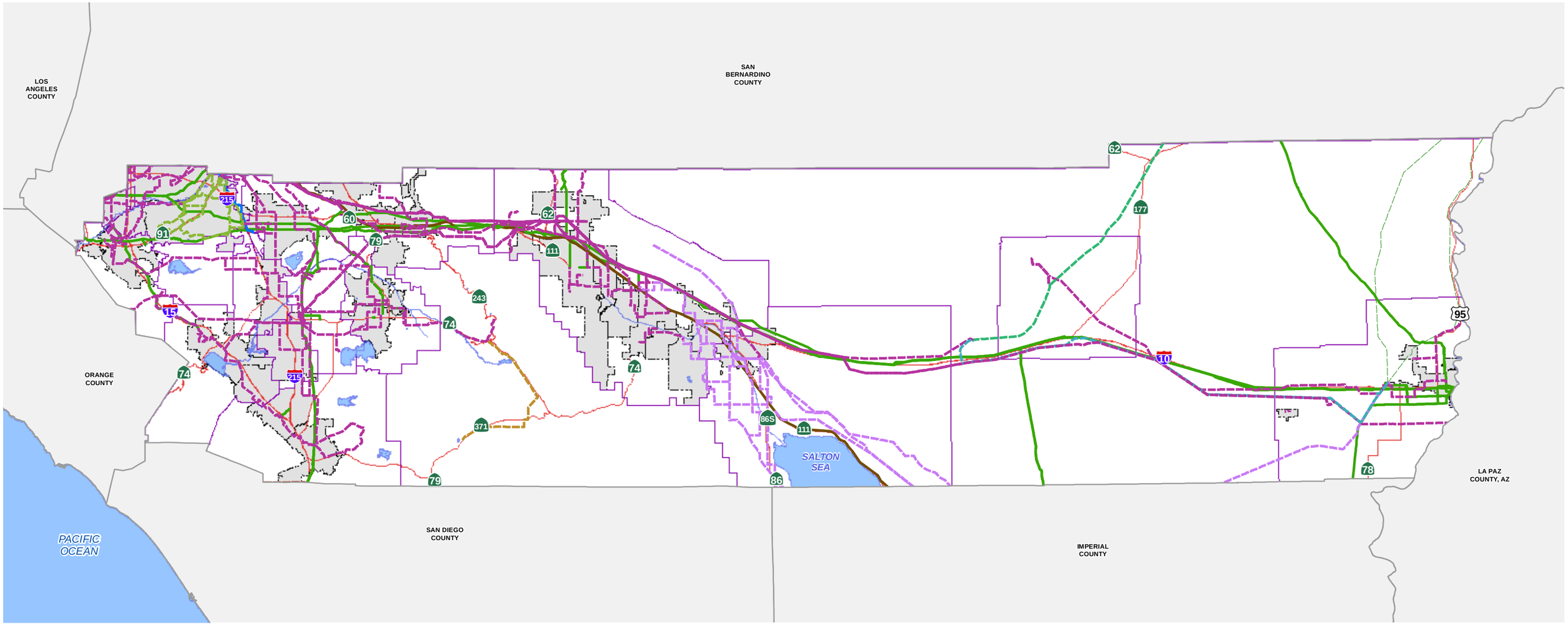
D. Electricity Consumption

Electricity consumption has increased in every decade of the 20th century, although at a decelerating rate. In recent decades, average annual growth was 5% during the 1970s, 3.9% during the 1980s and 2.5% in the 1990s. During the energy crisis years of 2001 and 2002, electricity usage fell significantly. However, demand has rebounded since 2002, with growth averaging 2.7% per year between 2002 and 2005. More recently, economic stagnation has once again triggered a slight leveling off of consumption.

It was estimated that for 2009, unincorporated Riverside County plus the cities served by SCE consumed a total of approximately 95,942.80 GWh, according to data from the California Energy Consumption Data Management System. As shown in Table 4.10-D (Electricity Consumption in Riverside County by Major Energy Provider), below, the commercial buildings sector and residential sectors were the two largest consumers of electricity, together accounting for over two-thirds of all electricity used. The majority (89.4%) of electricity provided to unincorporated Riverside County was delivered by SCE, with lesser usage by self-generators in the SCE Planning Area (4.7%) and the two largest wholesale water providers in the region, IID and MWD, using 3.5% and 2.3% respectively, of the total energy consumed. Lastly, AEC represented only a small fraction of use, 0.04%, while self-generators in the Riverside County portion of IID's planning area used the smallest fraction (less than 0.01%).

According to the most recent available assessment of publicly owned utility adequacy performed by the CEC (2009c), there are several major trends in energy procurement that could affect long-range resource availability and planning for energy providers within the state, including:

- Utilities are forecasting slow growth in the amount of energy required to meeting customer demand, with a 9% increase in ten years (less than 1% per year growth).
- Energy supply from utility fossil resources is expected to remain relatively unchanged with total share reducing slightly from 63% in 2010 to 57% in 2018.
- As long-term contracts for coal-fired generation expire over the next 10-12 years, use of coal resources is expected to decrease roughly 37% between 2010 and 2022.
- Contracts for renewable energy supplies are expected to account for the largest increases in energy supplies utilized by Riverside County providers as additional facilities come online over the next 10 years in response to California State initiatives.
- Wind will be the fastest-growing source of alternative energy generation.
- Geothermal energy, particularly in Riverside County and through IID, will continue to grow.
- Solar will also be a major energy source, but will gain market share more slowly as large solar facilities come online.
- Energy generated from biomass will more than double within the state, with the majority derived from landfill gas capture and utilization.
- Energy self-generation rates are expected to continue to increase as the State Solar Roof initiative and other alternative energy programs continue to be implemented.
- By 2018, the CEC projects roughly 31% of all retail energy from publicly owned utilities will be from renewable sources, a 175% increase by volume over 2008 levels.



Electrical Transmission Lines

- ANZA
- APUD
- BLYTHE ENERGY
- BVES
- IID
- LADWP
- MWD
- RPU
- SCE
- SDG&E
- WAPA

Gas Products

- Crude Oil
- Multi-Products
- Natural Gas
- Unleaded Gasoline

- Highways
- Area Plan Boundary
- City Boundary

Data Source: California Energy Commission (2013)

Required State Disclaimer:

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Figure 4.10.3

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

MAJOR ELECTRICAL AND NATURAL GAS LINES

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Table 4.10-D: Electricity Consumption in Riverside County by Major Energy Provider

Name[1]	Utility Type	Ag & Pump Water	Com-mercial Build.s	Com-merc. Other	Industry	Mining & Const.	Resi-dential	Street-lights	Total Usage (GWh)[2]
Southern Calif Edison Co.	Investor Owned	3,302.5	33,546.7	4,327.2	21,136.0	1,960.6	30,046.6	529.1	**85,848.8**
Imperial Irrigation District	Publicly Owned	258.0	1,072.8	173.1	181.2	59.0	1,570.2	0	**3,314.2**
Anza Electric Cooperative	Rural Electric Coop.	1.4	10.2	0	0	0	33.5	0	**45.0**
Metropolitan Water District	Publicly Owned	2,194.5	0	0	0	0	0	0	**2,194.5**
Self -Generators	In IID Planning Area	0.1	7.6	0.3	0	0	0.9	0	**8.9**
Self-Generators	In SCE Planning Area	9.1	511.5	284.4	2,821.7	862.5	42.2	0	**4,531.4**
Non-Municipal Subtotal		***5,765.6***	***35,148.9***	***4,784.9***	***15,138.9***	***2,882.1***	***31,693.3***	***529.1***	***95,952.8***
City of Banning	Publicly Owned	5.7	59.1	0	0	0	68.1	3.6	**136.4**
City of Corona	Publicly Owned	2.3	41.6	14.7	3.3	12.6	3.7	0	**78.1**
City of Riverside	Publicly Owned	17.5	1,067.5	64.0	203.0	13.7	696.8	21.8	**2,084.2**
City of Moreno Valley	Publicly Owned	0.1	51.0	0.3	1.3	0.6	33.7	0.8	**87.6**
Municipal Subtotal[1]		***25.5***	***1,219.1***	***79.0***	***207.6***	***26.8***	***802.3***	***26.2***	***2,386.4***
Grand Total (gWh)		**5,791.0**	**36,368.0**	**4,863.9**	**15,346.5**	**2,908.9**	**32,495.6**	**555.3**	**98,329.2**

Footnotes:
1. All cities in Riverside County, other than those listed above, utilize SCE and thus are included in the Non-Municipal subtotal, in addition to all of unincorporated Riverside County.
2. All data in gigawatt-hours (gWh) and rounded to nearest tenth (totals may not sum precisely due to rounding).

Source: California Energy Commission, California Energy Consumption Data Management System, 2009.

Data filed with the CEC (Forms 1.1a and 1.2), as reported in "California Energy Demand 2010-2020 Staff Energy Demand Forecast" (December 2009), indicates that by 2020 electricity consumption demand in SCE's service area is forecast to increase to 112,964 GWh, a 1.16% annual usage increase.

The CEC (2009c) states that annual peak-hour capacity for IID is expected to increase 17% from 1,095 MW in 2010 to 1,276 MW in 2018. IID forecasts a capacity surplus of 57 MW in 2018, due in part to short-term and spot market energy purchases of 125 MW. In total, the CEC report indicates IID has scheduled additions to its electric supply (through additional facilities or contracts) of 73% between 2010 and 2018. In addition, the CEC reports that IID has submitted an Energy Balance table showing an additional potential energy surplus averaging 3,615 GWh per year, but because such energy is generated from fossil-fuel sources and would only be generated if total energy requirements increased within IID, it was not included in CEC totals (nor shown in Table 4.10-D).

The CEC also found that as of 2008, AEC had adequate energy capacity and supplies to serve its customers. According to projections extrapolated from CEC data (2009c), with a total growth rate of approximately 7.7% for the next ten years (2008 – 2018), the projected energy demand for 2018 within AEC's service area would grow by approximately 3.78 GWh. AEC maintains a planning reserve margin of 12%; this is the amount of generation capacity that exceeds its forecasted peak demand, expressed as a percentage of the peak demand. Thus, even without additional supply or contract procurements, AEC would have sufficient power to meet forecast 10-year growth demand increases.

E. Natural Gas

Natural gas is a colorless, odorless gas composed mainly of methane with other heavier hydrocarbon gases plus non-combustible gases, such as nitrogen and carbon dioxide. Natural gas accumulates underground in formations, such as dry gas reservoirs (which contain primarily methane), associated reservoirs (where natural gas is produced along with oil) and unconventional resources (such as coal bed methane, tight sands and shale). After production, natural gas is processed to ensure that the quality meets pipeline quality specifications and is then transported via long interstate pipelines for distribution to retail customers. During transportation and distribution of natural gas, a small amount of mercaptans (sulfur compounds with a strong, pungent odor) are added to make sure that any gas leak is immediately identified.

Natural gas is produced in the U.S., Canada and Mexico in varying amounts depending on the region and source reservoir type. The major gas-producing regions in the U.S. are located in the Gulf of Mexico (both on- and offshore), Rocky Mountains, San Juan Basin, Permian Basin, Anadarko Basin, Michigan Basin and the Appalachian region.

California produces about 15% (historically about 1 billion cubic feet per day [Bcfd]) of the total natural gas consumed in the state. The other 85% comes from the San Juan and Rocky Mountains basin and Canada's Western Sedimentary basin. These supplies reach California via large interstate pipelines. According to the CPUC (2006), overall U.S. natural gas production ranges between 60 to 70 Bcfd, with California's consumption ranging between 5.5 to 6.5 Bcfd. With the recent drop in production levels in California, total domestic production has dropped to about 0.85 to 0.90 Bcfd. Nearly half *of* the natural gas produced in the state is distributed by utility companies to end users. The other half is directly provided to industry and electricity generation customers for their use.

The CPUC regulates natural gas utility service for the 10.5 million customers that receive natural gas from SCGC, Pacific Gas and Electric Company, San Diego Gas and Electric Company, Southwest Gas and two other natural gas utilities. Most of California's natural gas customers are residential and small commercial customers (referred to as "core" customers), who accounted for approximately 40% of the natural gas delivered by California utilities. Large consumers like electric generators and industrial customers (referred to as "non-core" customers) account for the remaining 60%.

In addition to regulating California utilities' natural gas rates and services, the CPUC also regulates its in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing. SCGC owns and operates two natural gas storage fields in Southern California. These storage fields help meet peak seasonal demand and allow Southern California customers to secure natural gas supplies more efficiently. SCGC also owns and operates four underground storage facilities located around Southern California (none in Riverside County). According to the most recent available data (from the 2010 California Gas Report), these facilities provide SCGC with a total of 133.1 Bcf of storage capacity, of which 80 Bcf is allocated to their core residential, commercial and small industrial customers. About 4 Bcf is used for 'system balancing' and the remaining capacity is available to other customers. The 2008 completion of the Costa Azul liquefied natural gas terminal in Baja California, Mexico, has also expanded the supply of natural gas available to Southern California.

Together with its sister firm, San Diego Gas and Electric, SCGC serves all of Southern California, a total of over 20,000 square miles including Riverside County. Both are regulated subsidiaries of Sempra Energy, a publicly traded utility company. SCGC provides natural gas to Riverside County through three major natural gas pipelines traversing Riverside County from east to west. Most of the major natural gas transmission pipelines in Riverside County are operated by SCGC.

Main natural gas pipelines follow Interstate 10 through most of Riverside County. Dual pipelines branch off these main lines near Desert Center and extend southward into Imperial County. Another set of dual lines branch off the main pipelines near Gilman Springs Road at State Route 60 and extend southward into San Diego County. Near the Interstate 215 (I-215) interchange, one pipeline veers to the south and extends west across Riverside County following State Route 91. Another veers to the north and follows the I-215 before extending west across Riverside County through the City of Riverside and community of Pedley. SCGC pipelines also extend north-south through the western portion of Riverside County, providing system connectivity to west San Bernardino Valley and the upper desert region in San Bernardino County.

Delivery of natural gas via pipelines is not available to all residents in unincorporated Riverside County, especially in some rural, mountainous and desert areas. Residents of such areas generally use propane or other fuel sources for heating and cooking purposes. Propane is stored in above-ground tanks on individual properties and is provided by private gas purveyors, which supply the tanks via truck.

F. Natural Gas Consumption

California relies heavily on imported natural gas. According to the CEC (2005), only about 15% of the natural gas supply can be met from in-state sources. Almost half of California's natural gas is imported from the southwest United States, a little over one quarter from Canada and the remainder from the Rocky Mountain states, which only began supplying natural gas to California in 1992. Overall natural gas supply in the state is projected to increase 14% between 2003 and 2013, with most of the growth from imports from the Rocky Mountain region.

According to the CEC (2005), California's total natural gas supply increased from 1,980 Bcf in 1990 to 2,422 Bcf in 2001. Indigenous natural gas production was low in the mid-1990s, but production has increased over the past few years. Service by SCGC was forecast to reach 890.4 Bcf by 2010. Data from the GHG Analysis (see Appendix EIR-6) prepared for this project indicates that annual natural gas usage for Riverside County in 2008 was 9.28 Bcf (approximately 96 million therms). The CPUC (2006) has established California as having an average natural gas usage rate of 0.06 cf per capita per day.

SCGC plans and designs its gas delivery systems to provide continuous service to its core (retail) customers under an extreme peak day event. The extreme peak day design criteria is defined as a 1-in-35 likelihood event for each utility's service area. Temperature also affects the likelihood of an extreme peak day event, since gases expand when heated. Demand on an extreme peak day is met through a combination of withdrawals from underground storage facilities and flowing pipeline supplies. SCGC is approved by the CPUC to hold a firm storage withdrawal amount of 2.225 Bcfd to serve the core portfolio of SCGC's retail core customers. Firm withdrawal plus firm pipeline supplies must be sufficient to meet peak day operating requirements.

In terms of growth, SCGC (2010) has forecast an average increase in "active meters" of 1.2% annually from 2009 through 2030. Across all of its market sectors, however, SCGC predicts an overall contraction in gas demand of approximately 0.21% annually between 2010 and 2030. Driving this contraction is the continued slump in the housing market, reduced employment forecasts, higher gas prices and aggressive energy-efficiency savings goals. In particular, the State-mandated push to alternative energy generation through non-fossil fuel means is expected to greatly reduce the amount of natural gas used for electricity generation in the state over the next two decades.

4.10.3 Policies and Regulations Addressing Energy Resources

A. State and Federal Regulations

The Federal Energy Regulatory Commission is an independent agency that regulates the transmission and sale of electricity, natural gas and oil; licenses and inspects hydropower projects; reviews proposals to build liquefied natural gas terminals; and oversees related environmental matters.

The California Public Utilities Commission (CPUC) regulates privately owned (i.e., investor-owned) electric power and natural gas utility companies in the State of California, as well as telecommunications, water, railroad, rail transit and passenger transportation utilities. Assembly Bill 1890, enacted in 1996, deregulated the power generation industry, allowing customers to purchase electricity on the open market. Under deregulation, the production and distribution of power that was under the control of investor-owned utilities (e.g., Southern California Edison) was decoupled. For these utilities, the CPUC regulates the design, installation and management of California's public electric, natural gas, water, transportation and telecommunications. The CPUC also provides consumer programs and information, such as energy efficiency, low income programs, demand response and California solar initiative for California's energy consumers.

California Energy Code (CCR Title 24, Part 6): Title 24, Part 6 of the California Code of Regulations (CCR), forms the California Energy Code, (often referred to simply as "Title 24," for short). Also known as "California's Energy Efficiency Standards for Residential and Nonresidential Buildings," this code was established in 1978 in response to a legislative mandate to reduce California's energy consumption. These standards are updated periodically by the CEC to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Since the adoption of Part 6 of Title 24, California has led the nation in reducing per-capita energy use by funding energy efficiency programs administered by the state's electric and gas utilities. These include establishment of the California Renewable Energy Portfolio Standards, California Solar Initiative and others. In 2008, the CPUC adopted the state's first "Long-Term Energy Efficiency Strategic Plan," to provide a "roadmap" to achieving maximum energy savings across the various major energy uses and sectors in California.

California Green Building Standards Code (CCR Title 24, Part 11): Periodically, the State of California updates Title 24 regulations to ensure they continue to serve as appropriate standards for energy efficiency and conservation. In 2008, the State of California adopted Part 11 into CCR Title 24 to establish the "California Green Building Standards Code," (CGBSC) as well as a variety of related changes throughout the other parts of Title 24. These changes were adopted, effective August 1, 2009, for several reasons:

- To provide California with an adequate, reasonably priced and environmentally sound supply of energy.
- To respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020.
- To pursue California energy policy, which states that energy efficiency is the resource of first choice for meeting California's energy needs.
- To act on the findings of California's Integrated Energy Policy Report (IEPR) that concludes that the Title 24 standards are the most cost-effective means to achieve energy efficiency. The IEPR also calls for the standards to continue to be upgraded over time to reduce electricity needs and peak demand, and

recognizes the role of the standards in reducing energy used for meeting California's water needs and in reducing GHG emissions.

- To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.

- To meet the Governor's Executive Order No. S-20-04 for the Green Building Initiative to improve the energy efficiency of non-residential building through aggressive standards.

As outlined by the California Building Standards Commission in Section 101.1 of the 2008 CGBSC: "The California Green Building Standards Code is Part 11 of twelve parts of the official compilation and publication of the adoption, amendment and repeal of building regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code." The purpose of this code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings" through "sustainable construction practices" in several categories, including planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency and environmental air quality (2008 CGBSC, Section 101.2). These standards apply to essentially all "building structures throughout the State of California" (including their "design, operation, construction, replacement, use and occupancy, location, maintenance, removal and demolition"). (2008 CGBSC Section 101.3)

Section 202 of the code defines a "green building" as "a holistic approach to design, construction and demolition that minimizes the building's impact on the environment, the occupants and the community." The code contains both mandatory and voluntary green building measures. Among other standards, the CGBSC establishes two "tiers" of energy performance for green buildings: Tier 1, in which the California Energy Code (i.e., CCR Title 24, Part 6) requirements for energy efficiency are exceeded by 15%; and, Tier 2, in which the requirements are exceeded by 30%. See CGBS Section 503.1. The CGBSC also introduces additional standards for water conservation and efficiency (see EIR Section 4.19 (Water Resources) for details).

Senate Bill 1078: California's Renewables Portfolio Standard (RPS) was established in 2002 by Senate Bill 1078. It requires the state's retail sellers of electricity, that is, investor-owned utilities, electric service providers and community choice aggregators, to procure at least 20% of their retail electricity sales from eligible sources of renewable energy by 2017. California's energy agencies subsequently committed to achieving the 20% target by 2010, seven years earlier than the original target. This 20% target was codified in 2006 by the enactment of Senate Bill 107, which took effect on January 1, 2007. A higher, more ambitious goal of 33% renewables by 2017 was initially set by the CEC and CPUC in their joint "Energy Action Plan." However, Governor Schwarzenegger's November 2008 Executive Order No. S-14-01 set the goal at 33% by 2020. In creating the RPS, the legislature underscored the importance of increasing the diversity, reliability, public health and environmental benefits of the energy mix.

Other State Actions and Programs: As part of its overall effort to address greenhouse gases (GHGs) and global climate change, the State of California has promulgated a number of regulations and programs that address energy conservation both directly and indirectly. These are discussed in Section 4.7 (Greenhouse Gases) of this EIR.

Regulation and Authorities for Electrical Transmission Lines: There are several agencies which have regulatory authority over the siting and permitting of electrical transmission power lines in California. Each agency has specific areas of oversight or circumstances when oversight occurs, as listed below. However, in all cases, power electrical transmission lines must undergo environmental review prior to a siting decision being made. If the line is intrastate and does not cross federal lands, then the proposed line must undergo

environmental review according to CEQA. Depending on the type of operator (municipal versus investor-owned utility), the agency responsible for environmental oversight can change. If the transmission line is wholly within federal lands, then the responsible federal agency must prepare an environmental review of the project as pursuant to the National Environmental Policy Act (NEPA). If a project crosses both state and federal lands in California, then a joint document is usually prepared. Typically, the agency with the greatest extent of affected land (often measured linearly) serves as the lead agency in the preparation of the environmental document. The agencies with regulatory and environmental oversight are as follows:

- **California Energy Commission (CEC):** Electrical transmission lines that are part of a power generation facility over 50 MW in size from the facility to the first point of interconnection.

- **Federal Energy Commission (FERC):** Interstate electrical transmission lines where the primary intent of the line is to service interstate power interest and where there are no formal state environmental guidelines and where federal lands may also be affected.

- **California Public Utilities Commission (CPUC):** Transmission lines that are sited and developed by an Investor Owned Utility (IOU), part of a rate decision and/or interconnected with an IOU transmission line. Subject to a variety of rules and reviews pursuant to PUC General Order 131(d), "Rules Relating to the Planning and Construction of Electrical Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California," and Rules 17.1 and 17.3 (the CPUC's "Rules of Practice and Procedure") which require the CPUC to conduct CEQA reviews for transmission line applications. These rules apply to any project initiated by an IOU in the State of California on public or private land.

- **Other Federal Agencies (BLM, U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Bureau of Indian Affairs, Department of Defense, etc.):** Lines that are within federal lands and not being developed primarily for interstate transmission of electrical power.

- **California State Lands Commission:** Lines that are primarily or exclusively within the boundaries of lands owned by the State of California.

- **Municipal Utilities (Including Irrigation Districts and Water Authorities):** Agencies that act as their own regulatory entities for the siting and permitting of electrical transmission lines (typically under authorities delegated by the State of California); for example, the Imperial Irrigation District. Municipal utilities must follow CEQA guidelines with respect to siting decisions. However, they are not subject to other extra-territorial review and oversight, assuming none of the conditions for other agencies (as per above) apply.

Renewable Energy Transmission Initiative (RETI): RETI is a statewide initiative to help "identify the transmission projects needed to accommodate [the State's recently adopted] renewable energy goals, support future energy policy and facilitate transmission corridor designation, and transmission and generation siting and permitting." The principal aim of RETI is to "identify those [competitive renewable energy] zones that can be developed in the most cost effective and environmentally benign manner" and "prepare detailed transmission plans for those zones identified for development."

B. County Regulations

In addition to complying with state regulations, Riverside County has engaged in a series of local activities that will further California's long-term energy efficiency goals by off-setting demand for energy, especially natural gas and electricity. Some of these County of Riverside activities include the following:

Wind Implementation Monitoring Program (WIMP): Under this County of Riverside program, wind energy conversion systems (WECS), the wind turbines used to generate electricity, are monitored through the planning, installation and operational phases to ensure environmental compliance, particularly with regard to noise and vibration.

Board of Supervisors (BOS) Policy H-29 (Sustainable Building Policy): Adopted in February 2009, this policy establishes a series of sustainable building practices to be used "in the design of [Riverside] County capital improvement project in order to reduce pollution, protect natural resources, enhance asset value, optimize building performance and create healthier workplaces for [Riverside] County employees." Among other things, use of "green" building practices include both design changes and engineering equipment features designed to reduce operating costs associated with heating, ventilation and air conditioning (HVAC) systems and lighting systems by using "as little energy as possible." Specifically, the policy states that all Riverside County building projects exceeding 5,000 square feet initiated on or after March 1, 2009, must meet the criteria for LEED™ certification under the LEED™ rating system or a Riverside County-approved equivalent. For renovations to existing buildings, the Board encourages the use of LEED™ existing building (LEED-EB) criteria. The policy also sets forth a number of performance targets and goals that "should be met or exceeded."

BOS Policy H-4 (Conservation of Energy in County Facilities): This policy was originally adopted by the Board in 1975, revised once in 1979 and then several times between 2001 and present, most recently in August 2010. First and foremost, the policy states that "all County [of Riverside] departments are responsible for conserving energy." It outlines an extensive list of actions to be taken by the Riverside County Economic Development Agency (EDA) in its role of managing and operating County of Riverside facilities. Areas covered by EDA directives include building heating and cooling systems (i.e., reducing A/C use), lighting (i.e., increasing use of fluorescent bulbs and reducing lighting use), building controls (that is, building automation systems set and monitored to only operate lighting, equipment and other electricity use only during a building's operational hours), water conservation, energy conservation programs developed in conjunction with local providers and energy efficiency programs which specify that rebates and incentives obtained for various conservation activities or purchases be used to further fund such measures. Less detailed directives applicable to all Riverside County departments are also included.

County Weatherization Program: This program has been offered by the Community Action Partnership of Riverside County since 1979. The services are available at no cost to low-income homeowners and renters living in Riverside County who meet the income guidelines. Priority is given to families with the lowest incomes and highest energy burden, to people age 60 and over, those permanently disabled and to families with children under five years of age. Weatherization or weatherproofing is the practice of protecting a building and its interior from the elements, particularly from sunlight and wind, in order to reduce energy consumption and optimize energy efficiency. The program works through a process of pre-inspection, in which needed weatherization measures are identified, improvement installation and then post-inspection of the work, in which a weatherization inspector verifies the work was performed as authorized. Funding is provided by federal LIHEAP and the Department of Energy.

Low Income Energy Assistance Program: Also offered by the Community Action Partnership, this program provides credits for payments to utilities for energy-related expenses (specifically, electricity, gas, wood, oil and

propane). Qualification for the program is based on household income, priority points and energy burden. The assistance is offered on a once-per-year basis.

C. Existing County General Plan Policies

The General Plan includes policies that reduce or minimize the effects of addition demand and consumption of energy resources, especially electricity and natural gas, associated with prospective growth within Riverside County. The following existing General Plan policies directly or indirectly address the issue of energy resources and their conservation:

1. Open Space (OS) Element Policies

Policy OS 10.1: Provide for orderly and efficient wind energy development in a manner that maximizes beneficial uses of the wind resource and minimizes detrimental effects to the residents and the environment of the county.

Policy OS 10.2: Continue the County's Wind Implementation Monitoring Program (WIMP) in order to study the evolution of wind energy technology, identify means to solve environmental and community impacts, and provide for an ability to respond with changes in the County's regulatory structure.

Policy OS 11.1: Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources.

Policy OS 11.2: Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments.

Policy OS 11.3: Permit and encourage the use of passive solar devices and other state-of-the-art energy resources.

Policy OS 12.1: Allow for the development of non-electrical, direct heat uses of geothermal heat and fluids for space, agricultural, and industrial heating in situations and localities where naturally occurring hydrothermal features will not be degraded.

Policy OS 12.2: Base all geothermal decisions on appropriate data relating to anticipated environmental, cultural, aesthetic, archaeological and social impacts.

Policy OS 12.3: Weigh the benefits of geothermal as a viable energy source against the protection of hot springs, geysers, thermal pools, and other thermal features for their ecological, educational, and recreational values.

Policy OS 12.4: Permit geothermal heat utilization for space heating in buildings.

Policy OS 16.2: Specify energy efficient materials and systems, including shade design technologies, for County buildings.

Policy OS 16.3: Implement public transportation systems that utilize alternative fuels when possible, as well as associated urban design measures that support alternatives to private automobile use.

Policy OS 16.4: Undertake proper maintenance of County physical facilities to ensure that optimum energy conservation is achieved.

Policy OS 16.5: Utilize federal, state, and utility company programs that encourage energy conservation.

Policy OS 16.6: Assist public buildings and institutions in converting asphalt to greenspace to address the heat island effect.

Policy OS 16.7: Promote purchasing of energy-efficient equipment based on a fair return on investment, and use energy-savings estimates as one basis for purchasing decisions for major energy-using devices.

Policy OS 16.8: Promote coordination of new public facilities with mass transit service and other alternative transportation services, including bicycles, and design structures to enhance mass transit, bicycle and pedestrian use.

Policy OS 16.9: Encourage increased use of passive, solar design and day-lighting in existing and new structures.

Policy OS 16.10: Encourage installation and use of cogenerating systems where they are cost-effective and appropriate.

2. Air Quality (AQ) Element Policies

Policy AQ 5.2: Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments.

Policy AQ 5.3: Update, when necessary, the County's Policy Manual for Energy Conservation to reflect revisions to the County Energy Conservation Program.

Policy AQ 5.4: Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Policy AQ 13.1: Manage the County of Riverside transportation fleet fueling standards to achieve an appropriate alternate fuel fleet mix.

D. Proposed New or Revised County General Plan Policies

GPA No. 960 includes the following proposed policies and plans related to electricity and natural gas use, as well as energy conservation:

1. Open Space (OS) Element Policies

NEW **Policy OS 11.4:** *Encourage site-planning and building design that maximizes solar energy use/ potential in future development applications.*

Policy OS 16.1: Continue to implement Title 24 of the ~~State Building Code~~ *California Code of Regulations (the "California Building Standards Code"), particularly Part 6 (the California Energy Code) and Part 11 (the California Green Building Standards Code), as amended and adopted pursuant to County ordinance.* Establish mechanisms and incentives to encourage architects and builders to exceed the energy efficiency standards ~~of~~ *within* CCR Title 24.

NEW **Policy OS 16.11:** *Provide incentives such as transfer of development rights and clustering to private developments that provide energy-efficient site design.*

NEW **Policy OS 16.12:** *Consider energy-efficient site design and construction techniques in renovation, construction or procurement of leased spaces.*

NEW **Policy OS 16.13:** *Encourage installation and use of new technology at existing facilities or the establishment of new waste/waste reduction facilities, where cost-effective and appropriate, to ensure that optimum energy conservation is achieved.*

NEW **Policy OS 16.14:** *Coordinate energy conservation activities with the County Climate Action Plan (CAP) as decreasing energy usage also helps reduce carbon emissions.*

2. Air Quality (AQ) Element Policies

Policy AQ 4.1: *Require* ~~Encourage~~ the use of *all feasible* building materials/methods which reduce emissions.

Policy AQ 4.2: *Require* ~~Encourage~~ the use of *all feasible* efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

Policy AQ 4.3: *Require* ~~Encourage~~ centrally heated facilities to utilize automated time clocks or occupant sensors to control heating *where feasible.*

Policy AQ 4.4: Require residential building construction to comply with energy use guidelines detailed in *Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of* Title 24 of the California ~~Administrative~~ Code *of Regulations.*

NEW **Policy AQ 18.1:** *Baseline emissions inventory and forecast. Riverside County CAP has included baseline emissions inventory with data on County's CO2e emissions for specific sectors and specific years. The carbon inventory greatly aids the process of determining the type, scope and number of GHG reduction policies needed. It also facilitates the tracking of policy implementation and effectiveness. The carbon inventory for the County consists of two distinct components; one inventory is for the County as a whole, as defined by its geographical borders and the other inventory is for the emissions resulting from the County's municipal operations.*

NEW **Policy AQ 18.2:** *Adopt GHG emissions reduction targets. Pursuant to the results of the Carbon Inventory and Greenhouse Gas Analysis for Riverside County, future development proposed as a discretionary project pursuant to the General Plan shall achieve a greenhouse gas emissions reduction of 25% compared to Business As Usual (BAU) project in order to be found consistent with the County's Climate Action Plan (CAP).*

NEW **Policy AQ 18.3:** *Develop a Climate Action Plan for reducing GHG emissions. The Riverside County CAP has been developed to formalize the measures necessary to achieve County GHG emissions reduction targets. The CAP includes both the policies necessary to meet stated targets and objectives. These targets, objectives and Implementation Measures may be refined, superseded or supplemented as warranted in the future.*

NEW **Policy AQ 18.4:** *Implement policies and measures to achieve reduction targets. The County shall implement the greenhouse gas reduction policies and measures established under the County Climate Action Plan for all new discretionary development proposals.*

NEW **Policy AQ 18.5:** *Monitor and verify results. The County shall monitor and verify the progress and results of the CAP periodically. When necessary, the CAP's "feedback" provisions shall be used to ensure that any changes needed to stay "on target" with stated goals are accomplished.*

NEW **Policy AQ 19.3:** *Require new development projects subject to County discretionary approval to achieve the GHG reduction targets established in the CAP either through:*

a. *Garnishing 100 points through the Implementation Measures found in the County's CAP; or*

b. *Requiring quantification of project-specific GHG emissions and reduction of GHG emissions to, at minimum, the applicable GHG reduction threshold established in the CAP.*

NEW **Policy AQ 20.10:** *Reduce energy consumption of new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design.*

NEW **Policy AQ 20.11:** *Increase energy efficiency of new developments through efficient use of utilities (water, electricity, natural gas) and infrastructure design. Also, increase energy efficiency through use of energy-efficient mechanical systems and equipment.*

NEW **Policy AQ 20.12:** *Support programs to assist in retrofitting older affordable housing units to improve their energy efficiency, particularly residential units built prior to 1978 when CCR Title 24 energy efficiency requirements went into effect.*

NEW **Policy AQ 20.18:** *Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc).*

NEW **Policy AQ 20.19:** *Facilitate development and sitting of renewable energy facilities and transmission lines in appropriate locations.*

NEW **Policy AQ 20.21:** *Provide homeowner education programs on the various voluntary ways in which they may reduce their homes' GHG emissions, e.g., improving home insulation, adding solar energy and providing information on energy-saving landscaping techniques.*

NEW **Policy AQ 20.27:** *Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel through fleet transitioning programs. Also reduce total vehicle miles traveled by County employees, both commuting to work sites and travel for the conduction of County activities.*

NEW **Policy AQ 20.28:** *Increase the energy efficiency of all existing and new County buildings and infrastructure operation (roads, water, waste disposal and treatment, etc.). Also decrease energy use through incorporating renewable energy facilities (such as, solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.*

NEW **Policy AQ 23.2:** *For discretionary actions, land use-related greenhouse gas reduction objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for individual future projects. County programs shall also be developed and implemented to address land use-related reductions for County operations and voluntary community efforts.*

NEW **Policy AQ 24.1:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions achieved through improving energy efficiency and increasing energy conservation:*

a. *Require new development (residential, commercial and industrial) to reduce energy consumption through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design. Passive solar design addressed the innate heating and cooling effects achieved through building design, such as selective use of deep eaves for shading, operable windows for cross-ventilation, reflective surfaces for heat reduction and expanses of brick for thermal mass (passive radiant heating).*

b. Require new development (residential, commercial and industrial) to design energy efficiency into the project through efficient use of utilities (water, electricity, natural gas) and infrastructure design.

c. Require new development (residential, commercial and industrial) to reduce energy consumption through use of energy efficient mechanical systems and equipment.

d. Establish or support programs to assist in the retrofitting of older affordable housing units.

e. Actively seek out existing or develop new programs to achieve energy efficiency for existing structures, particularly residential units built prior to 1978 when CCR Title 24 energy efficiency requirements went into effect.

f. Balance additional upfront costs for energy efficiency and affordable housing economic considerations by providing or supporting programs to finance energy-efficient housing.

***NEW* Policy AQ 24.2:** *For discretionary actions, energy efficiency and conservation objectives shall be achieved through development and implementation of the appropriate Implementation Measures of the Climate Action Plan for all new development approvals. County programs shall also be developed and implemented to address energy efficiency and conservation efforts for County operations and the community.*

***NEW* Policy AQ 26.1:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions derived from energy generation:*

a. Encourage the installation of solar panels and other energy-efficient improvements.

b. Facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).

c. Facilitate development of renewable energy facilities and transmission lines in appropriate locations.

d. Facilitate renewable energy facilities and transmission line siting.

e. Provide incentives for development of local green technology businesses and locally produced green products.

f. Provide incentives for investment in residential and commercial energy efficiency improvements.

g. Identify lands suitable for wind power generation or geothermal production and encourage development of these alternative energy sources.

***NEW* Policy AQ 26.2:** *For discretionary actions, the objectives for greenhouse gas reduction through increased use of alternative energy sources shall be achieved through development and implementation of the applicable Implementation Measures of the Climate Action Plan. County programs shall also be developed and implemented to address use of alternative energy for County operations and within the community.*

***NEW* Policy AQ 29.1:** *The County shall implement programs and requirements to achieve the following Objectives related to reducing greenhouse gas emissions from County transportation, such as fleet composition, construction equipment, employee commuting and travel on County business:*

a. Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel.

b. Increase use of alternative and lower carbon fuels in the County vehicle fleet.

c. Reduce total vehicle miles traveled by County employees, both commuting to work sites and travelling for the conduction of County activities.

NEW **Policy AQ 29.2:** *The County shall implement programs and requirements to achieve the following objectives related to reducing greenhouse gas emissions through improving energy efficiency for County facilities and operations:*

a. Improve the energy efficiency of all existing and new County buildings.

b. Improve the energy efficiency of County infrastructure operation (roads, water, waste disposal and treatment, buildings, etc.)

c. Decrease energy use through incorporating renewable energy facilities (such as, solar array installations, individual wind energy generators, geothermal heat sources) on County facilities where feasible and appropriate.

4.10.4 Thresholds of Significance for Energy Resources

The proposed project would result in a significant impact to energy resources if it would:

A. Require or result in substantial adverse physical impacts associated with the provision of new or physically altered utilities, such as electricity production or transmission facilities, the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

B. Require or result in substantial adverse physical impacts associated with the provision of new or physically altered utilities, such as natural gas production or transmission facilities, the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

C. Result in an inefficient, wasteful or unnecessary consumption of energy.

4.10.5 Effect of GPA No. 960 on the General Plan and Energy Resources

A. Proposed Changes to the General Plan

As part of the project review process, energy resource data in the General Plan was updated and energy-related policies reviewed and revised where necessary. Energy resources are addressed directly in the General Plan's Multipurpose Open Space Element and in various locations throughout the Land Use Element. The General Plan includes the following updates under GPA No. 960.

Energy Efficiency: Text was added and policies updated or added in the OS Element and elsewhere to increase emphasis on energy efficiency for new development. New Policies OS 11.4, 16.11, 16.12 and 16.13 were revised as part of this.

Greenhouse Gas Emissions Reductions: As part of GPA No. 960, new text and policy was added to the existing Air Quality (AQ) Element to address greenhouse gas reduction within Riverside County. A major emphasis for greenhouse gas reductions is increasing energy efficiency and alternate energy usage, which results in less fossil fuel emissions from traditional electricity generators. New AQ Element policies that address energy efficiency, either directly or indirectly were added, including: AQ 18.3, 18.4, 18.5, 19.3, 20.10, 20.11, 20.12, 20.18, 20.19, 20.21, 20.27 and 20.28.

In addition to these changes, a variety of LUD and policy area changes are proposed, as per the descriptions in Section 3.0 (Project Description) of this EIR and associated Figure 3-1 (and corresponding maps within each Area Plan) that may indirectly affect energy resources. Such changes would lead to either an increase or decrease in development potential (density or intensity); the demand for electricity and natural gas generated by new residents, visitors and workers would also be altered correspondingly.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies, as others as described in Section 3.0 of the EIR. Similarly, new maps for trails and Riverside County roads (GP Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements will be determined based on site assessment of opportunities and constraints to determine environmentally preferred alignments to minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines, and such, are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans.

Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need. As such, the specific locations and timing of future electricity and natural gas transmission and service lines are not presently foreseeable beyond the master utility corridor level already depicted in the General Plan and addressed previously in EIR No. 441. Rather, they will require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation would be assessed programmatically pursuant to the performance standards outlined in Section 4.10.6 herein, as well as elsewhere throughout this EIR, with project-specific analysis and mitigation developed at the later individual project stage.

B. Analysis of GPA No. 960 Effects on Energy Resources

For changes from the current (baseline) uses of energy, an analysis was prepared to assess this project's potential contribution to future energy demands. Specifically, energy analyses were made of the existing and proposed land uses for which the land use, policy area or other land use-related change included in GPA No. 960 could be associated with a specific location or area. Other land use changes associated with the project are expected but cannot be reasonably foreseen at the programmatic level; they are assessed instead under the growth and cumulative impact analyses in Section 5.0 (Additional Required CEQA Topics).

The energy resource analyses prepared for this section use the baseline and project build out scenarios prepared for this EIR as outlined in Section 4.1 (EIR Assumptions and Methodology) and Section 4.2 (Land Use), and as presented in Tables 4.2-F and 4.2-G, in particular. The population and developed use intensities derived from these two scenarios were then combined with various energy use factors to develop theoretical energy demand predictions, specifically for electricity and for natural gas. The same factors were used for both scenarios, which allows for a valid comparison between the two scenarios. The baseline results represent the existing levels of

energy use occurring at various foreseeable locations across Riverside County, and project build out results represent the potential future energy demand that could occur if all of the changes proposed by GPA No. 960 were to be implemented on those same sites. By controlling these variables, valid comparison between the two is possible.

These data should not be construed as the actual energy usage for a given location, a specific existing use or its future development. Privacy laws protect such information from being publicly released for private properties. Further, specific information is typically provided by the associated utility provider when an implementing development is proposed. Each utility provider has developed its own methods, formulae and factors for projecting future demand, which are not available or practicable for calculating for this programmatic EIR. In general, however, where the proposed project is consistent with regional (Southern California Association of Governments [SCAG]) and county growth projections, it is assumed long-range planning undertaken by individual utilities and service providers would be sufficient to meet future needs, since they also reference these same SCAG and county projections.

The results of the energy modeling (electricity and natural gas, the only two energy sources for which sufficient information was available for accurate modeling) for the existing baseline condition and proposed project build out conditions are summed up in Tables 4.10-E, 4.10-F, 4.10-G and 4.10-H. These tables' totals are ascribed to the specific (direct) uses listed. Indirect energy uses, such as by water providers, are addressed separately at the regional scale (see Section 4.7 (Greenhouse Gases)). Because energy use depends on the technology, generation source, service area size and a number of other factors, specific indirect energy use projections are not feasible as part of this programmatic EIR. The significance of these effects, their impacts, as well as any mitigation applicable or needed, are discussed in the subsequent section. Again, it should also be noted that the two modeled outcomes represent the changes that are reasonably foreseeable at this time at the programmatic level of this EIR. Other future development that may occur as a result of this project will have to undergo additional project-specific, focused CEQA review once sufficient details are known.

Table 4.10-E: Theoretical Annual Electricity Demand for Existing Uses of Land

Existing Use of Land	Electricity Duty Factor[1]	Area[2]	Dwelling Units or Square Feet[3]	Theoretical Electricity Use
Residential Uses				
Rural, West[4]	6.133 MWh/du	8,080 ac	3,160 du	19,370 MWh
Single-Family, West[4]	5.010 MWh/du	760 ac	1,380 du	6,910 MWh
Multi-Family, Mobile Home Parks and Apartments, West[4]	3.403 MWh/du	100 ac	120 du	410 MWh
Rural, East[4]	8.578 MWh/du	110 ac	40 du	350 MWh
Single-Family, East[4]	7.361 MWh/du	150 ac	380 du	2,770 MWh
Multi-Family, Mobile Home Parks and Apartments, East[4]	4.557 MWh/du	5 ac	5 du	20 MWh
Subtotal		**9,200 ac**	**5,850 du**	**29,790 MWh**
Employment Uses				
Commercial: Retail-Office and Tourist	0.0132 MWh/SF	70 ac	579,600 sf	7,650 MWh
Industrial: Heavy and Light	0.0105 MWh/SF	160 ac	2,108,000 sf	22,130 MWh
Industrial: Mining	NA[5]	80 ac	---	---
Public Facilities[6]	NA[5]	1,580 ac	---	---
Subtotal		***1,880 ac***	**---**	***29,790 MWh***
Agricultural and Recreational Uses				
Agriculture[7]	0.075 MWh/ac	9,590 ac	---	720 MWh
Ranch / Equestrian	0.075 MWh/ac	1,220 ac	---	90 MWh
Recreation / Parks	0.075 MWh/ac	80 ac	---	6 MWh
Subtotal		***10,890 ac***	**---**	***820 MWh***

Existing Use of Land	Electricity Duty Factor[1]	Area[2]	Dwelling Units or Square Feet[3]	Theoretical Electricity Use
Open Space and Vacant Land				
Open Space and Vacant Land[8]	NA[8]	89,460 ac	---	---
Subtotal		***89,460 ac***	***---***	***---***
Grand Total		**111,440 ac**	**5,860 du & 2,687,580 sf**	**60,430 MWh**

Abbreviations: MWh = megaWatt-hour ac = Acre du = Dwelling Unit sf = Square Feet --- = Not Applicable

Footnotes:

1. Residential duty factors from JBS Energy, Inc., Economic and Demographic Factors Affecting Residential California Energy Use, 2002. All others from SCAQMD CEQA Air Quality Handbook, 1993, except for the agriculture/recreation factor, which was extrapolated from Atkins, Greenhouse Gas Study, prepared for this EIR.
2. All acreages and results rounded to nearest 10; or nearest 1 if less than 10. Thus, totals may not sum precisely due to rounding.
3. Actual number of dwelling units onsite estimated from Riverside County Assessor's records and/or inspection of aerial site photos. Business square footage estimates per proposed General Plan Appendix E-1 methods, factors and assumptions.
4. Project items divided into west and east to accommodate the differing residential electricity usage factors available for two separate SCE Climate Zones (east county is hotter in summer).
5. No duty values available. Also, these land use categories vary too greatly to be accurately estimated.
6. Encompasses Public Facilities - Transportation (i.e., roadways), Utilities, Schools, Services and Other.
7. Residences associated with these uses were separated out and included under "Residential."
8. Encompasses Open Space-Water and Vacant lands. No energy use assigned because no associated development on these lands.

Source: Riverside County Planning and GIS Depts., Project Data and GIS Analysis, 2011. Electricity duty factors as per Footnote 1.

Table 4.10-F: Theoretical Annual Electricity Demand for Proposed Land Use Build Out

Proposed General Plan Land Use Designation	Electricity Duty Factor[1]	Area[2]	Dwelling Units or Square Feet[3]	Theoretical Electricity Use
Residential Uses[4]				
Rural Resi., West[5]	6.133 MWh/du	74,460 ac	9,650 du	59,180 MWh
Single-Family Resi., West[5]	5.010 MWh/du	1,450 ac	2,600 du	13,010 MWh
Multi-Family Resi., West[5]	3.403 MWh/du	60 ac	620 du	2,100 MWh
Rural Resi., East[5]	8.578 MWh/du	3,890 ac	470 du	4,090 MWh
Single-Family Resi., East[5]	7.361 MWh/du	340 ac	1,690 du	12,410 MWh
Multi-Family Resi., East[5]	4.557 MWh/du	0 ac	0 du	0 MWh
Resi. on Private Wells[8], East[5]	11.578 MWh/du	790 ac	20 du	220 MWh
Subtotal		***74,660 ac***	***12,860 du***	***91,010 MWh***
Employment Uses				
Commercial: CR (40%)[6], CT	0.0132 MWh/SF	130 ac	1,014,850 SF	13,400 MWh
Industrial: LI, HI, BP	0.0105 MWh/SF	370 ac	4,042,680 SF	42,450 MWh
Mining: OS-MIN	NA[7]	0 ac	---	---
Public Facilities: PF, FWY; TRIBES	NA[7]	1,810 ac	---	---
Subtotal		***2,310 ac***	***5,057,530 SF***	***55,840 MWh***
Agricultural & Recreational Uses				
Agriculture: AG[8]	0.075 MWh/ac	6,000 ac	---	450 MWh
Parks and Recreation: OS-REC	0.075 MWh/ac	110 ac	---	10 MWh
Subtotal		***6,110 ac***	***---***	***460 MWh***
Open Space				
Open Space: OS-C, OS-CH, OS-W	NA[9]	28,020 ac	---	---
Subtotal		***28,020 ac***	***---***	***---***
Grand Totals		**111,440 ac**	**15,040 du & 5,057,530 sf**	**147,310 MWh**

Abbreviations: MWh = megaWatt-hour ac = Acre du = Dwelling Unit sf = Square Feet --- = Not Applicable

Footnotes:

1. Residential duty factors from JBS Energy, Inc., Economic and Demographic Factors Affecting Residential California Energy Use, 2002. All others from SCAQMD CEQA Air Quality Handbook, 1993, except for the agriculture/recreation factor, which was extrapolated from Atkins, Greenhouse Gas Study, prepared for this EIR.
2. All acreages and results rounded to nearest 10; or nearest 1 if less than 10. Thus, totals may not sum precisely due to rounding.
3. Projected dwelling units and business square footage on site calculated per factors in proposed General Plan Appendix E-1.
4. Rural residential LUDs include: AG, OS-RUR, RR, RM, RD, EDR-RC, VLDR-RC and LDR-RC. Single-family residential uses encompass Community Development LUDs: EDR, VLDR, LDR, MDR (including 60% of CR per Footnote 6) and MHDR. Multi-family residential LUDs include: HDR, VHDR, HHDR, CC and MUPA.

5. Project items divided into west and east to accommodate the differing residential electricity usage factors available for two separate SCE Climate Zones (east county is hotter in summer).
6. Per General Plan Policy LU 29.2, 60% of CR may be built as residential (MDR).
7. No duty values available. Also, these land use categories vary too greatly to be accurately estimated.
8. Residences associated with these uses were separated out and included under Rural Residential.
9. No energy use assigned because no associated development on these lands.

Source: Riverside County Planning and GIS Depts., Project Data and GIS Analysis, 2011. Electricity duty factors as per Footnote 1.

Table 4.10-G: Theoretical Annual Natural Gas Demand for Existing Uses of Land

Existing Use of Land	Natural Gas Duty Factor[1]	Area[2]	Dwelling Units or Square Feet[3]	Theoretical Natural Gas Use
Residential Uses				
Rural Residential	79.980 kcf/du	8,190 ac	4,000 du	255,860 kcf
Single-Family Residential	79.980 kcf/du	910 ac	1,760 du	140,440 kcf
Multi-Family Resi., Mobile Home Parks and Apartments	79.980 kcf/du	100 ac	130 du	9,990 kcf
Subtotal		***9,200 ac***	***5,850 du***	***406,290 kcf***
Employment Uses				
Commercial: Retail-Office and Tourist	34.8 kcf/kSF	70 ac	579,600 sf	20,170 kcf
Industrial: Heavy and Light	27.6 kcf/kSF	160 ac	2,108,000 sf	58,180 kcf
Industrial: Mining	NA[4]	80 ac	---	---
Public Facilities	NA[4]	1,580 ac	---	---
Subtotal		***1,880 ac***	**---**	***78,350 kcf***
Other Uses				
Agriculture[5]	NA[4]	9,590 ac	---	---
Ranch / Equestrian	NA[4]	1,220 ac	---	---
Recreation / Parks	NA[4]	80 ac	---	---
Open Space & Vacant Land	NA[6]	89,460 ac	---	---
Subtotal		***89,460 ac***	**---**	**---**
Grand Total		**111,440 ac**	**5,860 du & 2,687,580 sf**	**484,600 kcf**

Abbreviations: ac = Acre; du = Dwelling Unit; --- = Not Calculated; kcf = Thousand Cubic Feet; kSF = Thousand Square Feet; NA = Not Applicable

Footnotes:
1. Natural gas duty factors from SCAQMD CEQA Handbook, 1993.
2. All acreages and results rounded to nearest 10; or nearest 1 if less than 10. Thus, totals may not sum precisely due to rounding.
3. Actual number of dwelling units on site estimated from Riverside County Assessor's records and/or inspection of aerial site photos. Business square footage estimates per proposed General Plan Appendix E-1 methods, factors and assumptions.
4. No duty values available. Also, these land use categories vary too greatly to be accurately estimated.
5. Residences associated with these uses were separated out and included under "Residential."
6. No development assumed and thus no energy use associated with either Open Space or Vacant lands.

Source: Riverside County Planning and GIS Depts., Project Data and GIS Analysis, 2011. Duty factors as per Footnote 1.

As indicated in Section 4.19 (Water Resources), the proposed project includes roughly 40,600 acres of land outside of established public water agencies. When a retail water supplier is not available, development is generally required to "self-serve," meaning pump water from directly on site or arrange to obtain water from a nearby private source. The JBS Energy study (Economic and Demographic Factors Affecting Residential California Energy Use, 2002) found that in desert climate zones, residences using onsite pumps to provide water had a substantially different electricity usage rate compared to homes receiving municipal water. In Table 4.10-F, electricity usage for potential residential units within the east Riverside County areas outside of existing water provider service areas was calculated separately.

Table 4.10-H: Theoretical Natural Gas Demand for Proposed Land Use Build Out

Proposed General Plan Land Use Designation	Natural Gas Duty Factor[1]	Area[2]	Dwelling Units or Square Feet[3]	Theoretical Natural Gas Use
Residential Uses				
Rural: RR, RM, RD, OS-RUR, RC:EDR, RC:VLDR, RC:LDR	79.980 kcf/du	73,130 ac	9,840 du	811,470 kcf
SFR: EDR, VLDR, LDR, MDR, MHDR, CR (60%)[4],	79.980 kcf/du	1,800ac	4,280 du	342,547 kcf
MFR: HDR, VHDR, HHDR, CC & MUPA	79.980 kcf/du	60 ac	620 du	49,256 kcf
Subtotal		***74,980 ac***	***14,740 du***	***1,203,270 kcf***
Employment Uses				
Commercial: CR (40%)[4], CT	34.8 kcf/kSF	130 ac	1,014,850 SF	35,320 kcf
Industrial: LI, HI, BP	27.6 kcf/kSF	370 ac	4,042,680 SF	111,580 kcf
Mining: OS-MIN	NA[5]	0 ac	---	---
Public Facilities: PF, FWY; TRIBES	NA[5]	1,270 ac	---	---
Subtotal		***2,310 ac***	***5,057,530 SF***	***146,890 kcf***
Other Uses				
Agriculture: AG	NA[6]	6,000 ac	---	---
Parks and Recreation: OS-REC	NA[6]	110 ac	---	---
Open Space: OS-C, OS-CH, OS-W	NA[6]	28,020 ac	---	---
Subtotal		***28,020 ac***	***---***	***---***
Grand Totals		**111,440 ac**	**14,740 du & 5,057,530 sf**	**1,350,160 kcf**

Abbreviations: ac = Acre; du = Dwelling Unit; --- = Not Calculated; kcf = Thousand Cubic Feet; kSF = Thousand Square Feet; NA = Not Applicable

Footnotes:
1. Natural gas duty factors from SCAQMD CEQA Handbook, 1993.
2. All acreages and results rounded to nearest 10. Thus, totals may not sum precisely due to rounding.
3. Projected dwelling units and business square footage on site calculated per factors in proposed General Plan Appendix E-1.
4. Per General Plan Policy LU 29.2, 60% of CR may be built as residential (MDR).
5. No duty values available. Also, these land use categories vary too greatly to be accurately estimated.
6. No development assumed and thus no energy use associated with either Open Space or Vacant lands.

Source: Riverside County Planning and GIS Depts., Project Data and GIS Analysis, 2011. Duty factors as per Footnote 1.

Similarly, these calculations also assume that natural gas supplied by SCGC would be used to serve all of these land uses' demands, as a worst-case scenario. In reality, remote locations, such as vacation homes on large desert parcels, would likely not be served by direct connection to SCGC supplies. Rather, they would be either all-electric service or supplied by individual above-ground storage tanks for propane or fuel oil. Unlike the division of homes potentially using well water in eastern Riverside County, it was not possible within the scope of this programmatic EIR to determine the future residences (particularly vacation units) that would be using natural gas versus all-electrical due to the numerous factors that affect such a determination. Rather, the calculations in these tables assume all residences are occupied year-round; likely an overestimate (i.e., 'worst-case' scenario) since in actuality many existing and proposed residences would be used as vacation homes and only occupied part of the year (particularly in the east desert). See the footnotes for the individual energy tables for additional notes on the various assumptions and calculations made for each data set assuming year-round use represents the 'worst case' scenario for utility usage. See the footnotes for the individual energy tables for additional notes on the various assumptions and calculations made for each data set.

4.10.6 Energy Resources - Impacts and Mitigation

A. Would the project require or result in substantial adverse physical impacts associated with the provision of new or physically altered utilities, such as electricity production or transmission facilities, the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact 4.10.A – Increase Demand for Electricity: Future development accommodated by the proposed project, GPA No. 960, would be less intense than that currently planned in the existing General Plan. Thus, on a relative basis, the project would not increase demand for electricity over current plans. Site-specific foreseeable land use changes proposed under the project, however, do have the potential to introduce new development or intensify existing development on previously vacant or less-developed lands. Analysis of energy demands associated with these changes indicates project demands would be insignificant compared to existing baseline levels and forecast Riverside County growth rates. For these reasons, the proposed project would not have a significant impact on existing electricity supplies, production or transmission facilities. The project would not trigger the need for new or altered facilities nor result in substantial environmental impacts due to the construction of such facilities. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce the already insignificant impact associated with project-related electricity demand and service.

1. Analysis of Impact 4.10.A

In general, the introduction of new development into an area brings with it an attendant new demand for energy resources, electricity in particular. The energy provider serving the area in which the new development is located is normally responsible for supplying electricity service to the site. The proponent of the new development, however, is typically required to bear the responsibility and/or cost associated with constructing the infrastructure necessary to provide such service (for example, transmission lines from the utility's substation to the development site). In addition, the site developer is also responsible for constructing or installing the necessary equipment and facilities for providing electricity within the development itself (for example, power lines running from the transmission lines to the homes and businesses within the new development, as well as the wiring and electrical outlets within the structures themselves and so on).

It is the utility provider that is responsible for providing the energy resource, in this case, electricity, to be used at new development sites. When a project's demand for electricity exceeds that which the provider can supply, it would trigger the need for additional (new) or upgraded resources, such as electricity-generating facilities. Such facilities may be provided directly by the project applicant (e.g., through solar panels installed within the development), directly by the utility provider (e.g., through construction of a new hydroelectric dam or power plant) or indirectly by the utility provider (e.g., through purchase of electricity from another energy provider who has excess supply or has built new facilities to increase supply). Often times, a combination of these approaches may be used. Nevertheless, when new supply is needed, the construction of the facilities to provide the needed new supply, either within the local area, region or elsewhere, must be evaluated for their potential to result in their own significant environmental effects. As noted in the question above, when triggered by a project, either directly (specifically to meet project demand) or indirectly (through a substantial cumulative contribution), the environmental effects of such improvements are attributable to the project and must be disclosed and mitigated.

Towards this end, the potential future contributions that could be attributable to the proposed project were evaluated in terms of demand for electricity. First, the proposed land use-related changes of GPA No. 960 that could be tied spatially to specific future development potential were evaluated relative to their sites' existing environmental baselines to determine their effect on electricity demand. As outlined in Section 4.10.3 and, in particular, Tables 4.10.E and 4.10.F, it was found that build out of new development associated with GPA No. 960 changes would increase annual demand for electricity by 86.9 GWh compared to the 2008 baseline demand. Since the build out horizon for the proposed project and the Riverside County General Plan itself is approximately 2060, this means that the increased demand for electricity would occur incrementally over 50 years. Thus, on a simple incremental basis, the proposed project's direct effect on future electricity demands would result in approximately 1.7 GWh of increased demand each year. This represents an annual growth rate of 2.8%. Thus, electricity demand resulting from future development accommodated by the proposed project would increase incrementally the annual need for electricity service above existing conditions.

The project uses RCP-08 forecasts issued by Riverside County's Center for Demographic Research (CCDR), which includes a 2.6% growth rate between 2007 and 2008 in its 2008 Riverside County Progress Report and a 1.4% growth rate for Riverside County between 2008 and 2009 in its 2009 Riverside County Progress Report. The long-term growth rate forecast by the CCDR for the next 25 years, however, calls for housing to grow at 3.6% per year between 2010 and 2035 (the furthest year forecast in RCP-10). As such, the project-associated annual increase of 2.8% does not represent an increase in excess of what is already being forecast by the County of Riverside for the future. Further, since the project is consistent with Riverside County growth projections, to the extent the utility providers utilize such projections, the project would not significantly affect them.

The electricity demand estimated for future project development is based on a worst-case (business-as-usual) scenario that does not take into account any of the energy efficiency and other conservation standards of the County of Riverside or State of California. As outlined in Section 4.7, implementation of specific building energy-efficiency standards outlined in the proposed Climate Action Plan and other energy-related measures affecting electricity supplies are documented to reduce 2020 electricity demands by roughly 47.8% (yielding an annual electricity growth rate of roughly 0.53%). A full discussion of these measures, including their relationship to existing and proposed energy conservation efforts of both the State of California and the County of Riverside, is provided in Section 4.7.

Analysis released by SCE in 2007 indicates that it currently anticipates and plans for a 1.2% annual growth increase in electricity demand, while AEC forecasts 7.7% growth over the next 10 years. (No IID growth rate was available; see Section 4.10.2.) As such, a project-associated annual increase of roughly 0.53% would be within the range of increasing demand planned for and accommodated by the electricity providers within the county that would serve any such future development.

For all of the above reasons, the electricity demands associated with project changes are considered well-within the range of that planned for by the utility providers. Thus, meeting the energy demand generated by the proposed project would not result in a significant environmental impact.

Although the proposed project would create minor additional demands on electricity supplies and the associated distribution infrastructure necessary for its transmission, these energy needs are expected to be well within the service capabilities of the local providers, SCE, IID and AEC. All electrical lines and other system improvements would be installed, in whole or in part, at the expense of the future development project proponents as a Condition of Approval for their projects. This would serve to avoid adverse impacts to the electricity distribution system. Likewise, compared to that of Riverside County as a whole, the project would contribute an insignificant incremental amount to the long-term need for additional new or upgraded facilities. For all of these reasons, the project would not result in a significant impact on existing or future electricity providers or infrastructure.

There is also the matter of electricity demand that would be associated with future development arising from project implementation that is expected to occur, but cannot be tied to a specific location or point in time. In such instances, specific environmental impacts tied to specific locations cannot be ascertained, but the effects can be described on a programmatic level. In this case, two statistics are relevant. First, build out of the proposed project, as implemented through the amended General Plan, is forecast to result in fewer homes, people and jobs than currently forecast for the existing General Plan (roughly 2.0%, 1.4% and 5.6%, respectively). It may be reasonably assumed that associated future electricity demand would be similarly reduced. Since public utilities use municipal and County General Plans as part of their long-range planning processes, this means that the project's future needs are in line with (and in fact, less than) those previously disclosed to the utilities.

Further, for regional planning, service providers for Riverside County also use projections issued by SCAG. The current adopted SCAG plan is the 2008 Regional Transportation Plan (RTP-08). For unincorporated Riverside County, for the Year 2035, it forecasts population, housing and employment figures that are significantly higher than what the General Plan, as amended by the proposed project, would call for. Specifically, compared to RTP-08, the proposed project would yield a 25.4% decrease in housing units, 22.1% decrease in population and 15.4% decrease in jobs. A decrease in energy demand, compared to that necessary to serve RTP-08 development levels, could also be assumed. For these reasons, the proposed project's long-range effect on long-term electricity demand and provision of electric service and related infrastructure would be less than significant.

Lastly, where future development consistent with the proposed project is constructed, there could be environmental impacts related to the provision of services to the individual sites, such as electricity transmission lines. In general, these types of transmission lines and pipelines can be constructed within the rights-of-way of existing roads or beneath roads being constructed as part of a project. In such cases, environmental impacts are typically temporary and readily mitigated. Other than the areas served by AEC or IID, all of unincorporated Riverside County is served by SCE. In unincorporated western Riverside County, served by SCE, much of the area is urbanized and existing infrastructure networks are present. As such, additional connects to such networks would be feasible without extensive new transmission lines. The same holds for the Coachella Valley region, which is served by IID. In the Aguanga and Anza areas, served by AEC, additional transmission lines may be needed for development in the more remote portions of the area. However, at the lower densities/intensities proposed under GPA No. 960, such additional lines could be accommodated within or along existing roadways, without significant new environmental effects.

2. Regulatory Compliance for Impact 4.10.A

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, programs, policies and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

a. Compliance with Federal, State and County Regulations

Compliance with a variety of state and county regulations and programs that address energy conservation either directly or indirectly as part of greenhouse gas reduction plans would further prevent already insignificant impacts associated with electricity demand. These regulations and programs are described in detail in Section 4.10.3 of this EIR and also discussed in Section 4.7 (Greenhouse Gases).

b. Compliance with Existing General Plan Policies

Within the Riverside County General Plan, existing Multipurpose Open Space (OS) Element Policies OS 10.1, 10.2, 11.2, 11.3, 12.1-12.4 and 16.1-16.10, and Air Quality (AQ) Element Policies AQ 5.2-5.4 would further reduce the already insignificant impact on electricity utilities. See Section 4.10.3.C for full text of each of these policies.

c. Compliance with Proposed New or Revised General Plan Policies

In addition to existing policies, new and revised policies from the General Plan's OS Element (Policies OS 11.4 and 16.11-16.13) and AQ Element (AQ Policies 4.2-4.4, 20.10-20.12, 20.18-20.21 and 20.28) would further reduce the already insignificant impacts associated with electricity demand. See Section 4.10.3.C for full text of each of these policies.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, certified for the 2003 RCIP General Plan, Mitigation Measures 4.8.1A and 4.8.1B were imposed to further minimize impacts due to additional demand and consumption of electricity and ensure they were less than significant. Although the potential impacts of this project (GPA No. 960) are already less than significant, these measures are programmatic in nature and thus remain applicable.

Existing Mitigation Measure 4.8.1A: The County [of Riverside] shall review all development proposals prior to the approval of development plans to guarantee that sufficient energy resources and facilities are available to supply adequate energy to the proposed project and associated uses.

Existing Mitigation Measure 4.8.1B: The County [of Riverside] shall review all development plans prior to approval to guarantee that energy conservation and efficiency standards of Title 24 are met and are incorporated into the design of the future proposed project.

3. Finding on Significance for Impact 4.10.A

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on demand and consumption of electricity, as well as on the infrastructure and facilities that supply the electricity. In addition, compliance with the above-listed existing regulatory programs and General Plan policies, as well as existing EIR No. 441 Mitigation Measures 4.8.1A and 4.8.1B, would further reduce or avoid these already insignificant project impacts to electricity resources and infrastructure.

B. Would the project require or result in substantial adverse physical impacts associated with the provision of new or physically altered utilities, such as natural gas production or transmission facilities, the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact 4.10.B – Increase Demand for Natural Gas: Future development consistent with the proposed project, GPA No. 960, would be less intense than that currently planned in the existing General Plan. Thus, on a

relative basis, the project would not increase demand for natural gas over current plans and would not trigger new additional environmental impacts. Site-specific land use changes proposed in GPA No. 960, however, do have the potential to introduce new development or intensify existing development on previously vacant or less-developed lands. Analysis of energy demands associated with these changes indicate project demands would be insignificant compared to existing baseline levels and are in line with expected growth rates. For these reasons, the proposed project would not have a significant impact on existing natural gas supplies, production or transmission facilities. The project would not trigger the need for new or altered facilities nor result in substantial environmental impacts due to the construction of such facilities. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce already insignificant impacts associated with project-related natural gas demand and service.

1. Analysis of Impact 4.10.B

In general, the introduction of new development into an area brings with it an attendant new demand for energy resources, including natural gas. The Southern California Gas Company (SCGC) is the natural gas provider for Riverside County and would provide gas to new developments within its service zones. Where SCGC cannot provide service, individual homes and other uses would have to either rely solely on electricity or provide their own onsite gas, typically propane or fuel oil stored in small, aboveground storage tanks.

Regardless of the source, the proponent of the new development, however, is typically required to bear the responsibility and/or cost associated with constructing the infrastructure necessary to provide such service (for example, pipelines connecting to SCGC's delivery system). In addition, the site developer is also responsible for constructing or installing the necessary equipment and facilities for providing natural gas within the development itself (for example, pipelines running from the SCGC's transmission point to the homes and businesses within the new development, as well as the piping and connections within the structures themselves, and so on).

When a project's demand for energy exceeds that which the provider can supply, it would trigger the need for additional (new) or upgraded resources, such as natural gas production and storage facilities, as well as pipelines. Such facilities may be provided directly by the project applicant (e.g., through individual above-ground storage tanks for propane or fuel oil installed within the development), by SCGC directly (e.g., through construction of a new facility) or indirectly (e.g., through purchase of gas from another provider with excess supply or new facilities to increase supply). Occasionally, a combination of these approaches may be used. Nevertheless, when new supply is needed, the construction of the facilities to provide the needed new supply, either within the local area, region or elsewhere, must be evaluated for their potential to result in their own significant environmental effects. As noted in the question above, when triggered by a project, either directly (specifically to meet project demand) or indirectly (through a substantial cumulative contribution), the environmental effects of such improvements are attributable to the project and must be addressed.

Towards this end, the potential future contributions of the areas proposed to change as a result of the project were evaluated for natural gas demand. First, the proposed land use-related changes of GPA No. 960 that could be tied spatially to specific future development potential were evaluated relative to their sites' existing environmental baseline to determine their effect on natural gas demand. As outlined in Section 4.10.3 and, in particular, Tables 4.10.G and 4.10.H, it was found that build out of foreseeable new development resulting from GPA No. 960, without any mitigation or reduction policies applied (that is, the "business-as-usual" scenario), would increase annual demand for natural gas by 865,530 kcf (8.95 million therms) compared to the 2008 baseline demand.

Since the build out horizon for the project and the Riverside County General Plan itself is approximately 2060, this means that the increased demand for natural gas would occur incrementally over 50 years. Thus, on a simple

incremental basis, the proposed project's direct effect on future natural gas demand would result in approximately 16,645 kcf of increased demand each year. When compared to the baseline (2008) natural gas demand for unincorporated Riverside County, this represents an annual increase of 3.4%. Thus, natural gas demand resulting from the reasonably foreseeable future development that could be authorized pursuant to the project would annually increase incrementally the need for natural gas service above existing conditions, assuming all development uses natural gas from SCGC.

The project uses RCP-08 forecasts issued by Riverside County's Center for Demographic Research (CCDR), which includes a 2.6% growth rate between 2007 and 2008 in its 2008 Riverside County Progress Report and a 1.4% growth rate for Riverside County between 2008 and 2009 in its 2009 Riverside County Progress Report. The long-term growth rate forecast by the CCDR for the next 25 years, however, calls for housing to grow at 3.6% per year between 2010 and 2035 (the furthest year forecast in RCP-10). As such, the project-associated annual increase of 3.4% does not represent an increase in excess of what is already being forecast by the County of Riverside for the future. Further, since the project is consistent with Riverside County growth projections, to the extent the utility providers utilize such projections, the project would not significantly affect them.

The natural gas demand estimated for future project development is based on a worst-case (business-as-usual) scenario that does not take into account any of the energy efficiency and other conservation standards of the County of Riverside or State of California. Implementation of specific building energy-efficiency standards outlined in the proposed Climate Action Plan and other energy-related measures affecting natural gas use are documented to reduce 2020 demands by 47.8% (yielding an annual growth rate for natural gas use of roughly 0.87%). A full discussion of these measures, including their relationship to the energy conservation efforts of both the State of California and the County of Riverside, is provided in Section 4.7.

Analysis released by the CEC in 2009 indicated that SCGC currently anticipates and plans for an overall demand growth rate of 0.8% between 2010 and 2020. The project-associated annual increase of 0.87% is near to the anticipated increasing demand planned for and accommodated by SCGC. Thus, meeting the natural gas demand generated by the proposed project would not result in a significant environmental impact.

For all of the above reasons, the natural gas demands associated with project changes are considered well-within the range of that planned for by the utility providers. Thus, meeting the energy demand generated by the proposed project would not result in a significant environmental impact.

Although the proposed project would create small additional demands on natural gas supplies and the associated distribution infrastructure necessary for its delivery, at an annual growth rate of 0.87%, energy needs are expected to be within the service capabilities of SCGC. In terms of construction, all necessary gas pipelines, meters and other system improvements would be installed, in whole or in part, at the expense of the future development project proponents as a Condition of Approval for their projects. This would serve to avoid adverse impacts to gas distribution systems. Likewise, with such a small average rate of change compared to that of unincorporated Riverside County as a whole, the project would contribute an insignificant incremental amount to the long-term need for additional new or upgraded facilities. For all of these reasons, the project would not result in a significant impact on existing or future natural gas providers or infrastructure.

There is also the matter of natural gas demand that would be associated with future development arising from project implementation that is expected to occur, but cannot be tied to a specific location or point in time. In such instances, specific environmental impacts tied to specific locations cannot be ascertained, but the effects can be described on a programmatic level. In this case, two statistics are relevant. First, build out of the proposed project, as implemented through the amended General Plan, is forecast to result in fewer homes, people and jobs than currently forecast for the existing General Plan (roughly 2.0%, 1.4% and 5.6%, respectively). It may be

reasonably assumed that associated future natural gas demand would be similarly reduced. Since public utilities use municipal and County General Plans as part of their long-range planning processes, this means that the project's future needs are in line with (and in fact, less than) those previously disclosed to the utilities.

Further, for regional planning, service providers for Riverside County also use projections issued by SCAG. The current adopted SCAG plan is the 2008 Regional Transportation Plan (RTP-08). For unincorporated Riverside County, for the Year 2035, it forecasts population, housing and employment figures that are significantly higher than what the Riverside County General Plan, as amended by the proposed project, would call for. Specifically, compared to RTP-08, the proposed project would yield a 25.4% decrease in housing, 22.1% decrease in population and 15.4% decrease in jobs. A decrease in energy demand, compared to that necessary to serve RTP-08 development levels, would also be assumed. Thus, for all of these reasons, the proposed project's long-range effects on long-term natural gas demand, its provision and its related infrastructure would be less than significant.

Lastly, where future development consistent with the proposed project is constructed, there could be environmental impacts related to the provision of services to the individual sites, such as gas pipelines. In general, these types of transmission pipelines can be constructed within the rights-of-way of existing roads or beneath roads being constructed as part of a project. In such cases, environmental impacts are typically temporary and readily mitigated. In terms of natural gas, all of unincorporated Riverside County is supplied by the Southern California Gas Company.

In unincorporated western Riverside County, much of the area is urbanized and existing infrastructure networks are present. As such, additional connections to such networks would be feasible without extensive new pipelines. The same holds for the Coachella Valley region. In the more rural portions of Riverside County, such as the Aguanga and Anza areas, and the desert east of Coachella Valley, additional transmission lines may be needed for development in the more remote portions of the area. However, at the lower densities/intensities proposed under GPA No. 960, such additional pipelines could be accommodated within or along existing roadways without significant new environmental effects. For development in remote areas where natural gas service cannot be readily extended, homes (the principal use proposed for such remote areas) can be designed and constructed to utilize only electricity for heating and cooking, or can include onsite propane, natural gas or fuel oil tanks supplying the individual residents. In such cases, tanks are filled through services the occupant contracts for directly through a third-party provider.

2. Regulatory Compliance for Impact 4.10.B

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, General Plan policies and existing mitigation measures from EIR No. 441 would further minimize this already insignificant impact.

a. Compliance with Federal, State and County Regulations

Compliance with a variety of state and county regulations and programs that address energy conservation either directly, or indirectly as part of greenhouse gas reduction plans, would further prevent already insignificant impacts associated with natural gas demand. These regulations and programs are described in detail in Section 4.10.3 of this EIR.

b. Compliance with Existing General Plan Policies

Existing policies of the Riverside County General Plan OS and AQ Elements (Policies OS 12.1-12.4, 16.1, 16.2, 16.4-16.7, 16.10, and 5.2-5.4) would further reduce already insignificant impacts to natural gas demand and infrastructure. See Section 4.10.3.C for full text of each policy.

c. Compliance with Proposed New or Revised General Plan Policies

In addition to existing policies, new and revised policies from the General Plan's OS Element (Policies OS 16.11 and 16.12) and AQ Element (Policies AQ 4.2-4.4, 18.3-18.5, 19.3, 20.11, 20.12, 20.21 and 20.28) would further reduce the already insignificant impacts associated with natural gas demand. See Section 4.10.3.C for full text of each of these policies.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.8.1A and 4.8.1B, as set forth under Impact 4.10.A, above, were also imposed to further minimize impacts due to additional demand and consumption of natural gas and to ensure impacts were less than significant. Although the potential impacts of this project are already less than significant, the EIR No. 441 measures are programmatic in nature and thus remain applicable to this project.

3. Finding on Significance for Impact 4.10.B

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on demand for and consumption of natural gas, as well as on the infrastructure and facilities that supply the gas. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies, as well as existing Mitigation Measures 4.8.1A and 4.8.1B from EIR No. 441, would further reduce or avoid these insignificant project impacts to natural gas resources and infrastructure.

C. Would the project result in an inefficient, wasteful or unnecessary consumption of energy?

Impact 4.10.C – Cause the Inefficient Use of Energy: Future development consistent with the proposed project GPA No. 960 would be less intense than that currently planned in the existing General Plan. Therefore, on a relative basis, the project would not increase demand for energy over current plans. The project also proposes to add a number of new policies and programs targeting energy efficiency and conservation directly in order to reduce greenhouse gas emissions by roughly 30% (see EIR Section 4.7, Greenhouse Gases). As a result of implementation of such measures, new development would be more energy-efficient and less wasteful of energy than existing uses or proposed uses without GPA No. 960. For these reasons, the project would not result in inefficient, wasteful or unnecessary energy consumption and the project's impacts on use of energy would be less than significant. No project-specific mitigation is required. Moreover, compliance with existing regulatory programs and General Plan policies, as well as new ones proposed as part of GPA No. 960, would further reduce the already insignificant impacts associated with efficient use of energy.

1. Analysis of Impact 4.10.C

As discussed in Section 4.10.5, above, the project includes proposed changes designed to *reduce* potential development and build out capacity in the Riverside County General Plan. As such, it serves to reduce unnecessary construction and development on lands not needed to accommodate existing and projected future Riverside County residents and employees. As an example, Rural Village Overlays (RVOs) would be formalized by the project where development patterns and expected growth make them natural locations for the extension of urbanizing areas, as in the Good Hope and Meadowbrook RVOs. Conversely, RVOs are proposed to be removed from areas where remote location, lack of infrastructure availability and general lack of urbanizing pressure indicate additional capacity would not be needed, such as for the Aguanga and Anza areas. By focusing growth via the selective use of RVOs, GPA No. 960 would prevent inefficient and unnecessary consumption of energy, both for energy used in buildings and for fuel used by vehicles travelling to and from such locations.

Also, as outlined in Section 4.7, implementation of specific building energy-efficiency standards outlined in the proposed Climate Action Plan (CAP) and other energy-related measures affecting electricity supplies, are documented to reduce 2020 electricity demands by over half. In addition to addressing direct energy use, Section 4.7 also addresses water consumption and wastewater generation, two major sources of indirect energy use. A full discussion of these implementation measures, including their relationship to existing and proposed energy conservation efforts of both the State of California and the County of Riverside, is provided in Section 4.7. As a result of the CAP measures, new development would be more energy efficient than existing uses and facilitate long-term energy conservation. For these reasons, the proposed project would not result in significant impacts due to inefficient, wasteful or unnecessary energy consumption.

2. Regulatory Compliance for Impact 4.10.C

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, programs, policies from prior EIR No. 441 would further reduce this already insignificant impact.

a. Compliance with Federal, State and County Regulations

Compliance with a variety of state and county regulations addressing energy conservation directly or indirectly, as part of greenhouse gas reduction plans, would further prevent already insignificant impacts associated with use of energy. See Section 4.10.3 of this EIR for more information on these, plus Section 4.7 for additional information as well.

b. Compliance with Existing General Plan Policies

Existing policies of the Riverside County General Plan would further reduce the already insignificant impact on energy usage. These include Policies OS 11.1-11.3, 12.1-12.4 and 16.1-16.10, and Policies AQ 5.2-5.4 and 13.1. See Section 4.10.3.C for the full text of each.

c. Compliance with Proposed New or Revised General Plan Policies

A number of new or revised policies from the OS and AQ Elements of the County General Plan would further reduce the already insignificant impacts associated with energy usage. These include: Policies OS 11.4, 16.11-16.13, and Policies AQ 4.2-4.4, 18.3-18.5, 19.3, 20.10-20.12, 20.18, 20.19, 20.21, 20.27 and 20.28. See Section 4.10.3.C for full text of each of these policies.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measure 4.8.1B was imposed to further minimize impacts due to additional demand and consumption of electricity and ensure they were less than signify-cant. Although the potential impacts of this project are already less than significant, this measure is programmatic in nature and thus remains applicable to this project.

Existing Mitigation Measure 4.8.1B: The County [of Riverside] shall review all development plans prior to approval to guarantee that energy conservation and efficiency standards of Title 24 are met and are incorporated into the design of the future proposed project.

3. Finding on Significance for Impact 4.10.C

The analysis presented above indicates that future development consistent with the proposed project would have less than significant impacts on the usage of energy, energy efficiency and energy conservation. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies, as well as existing Mitigation Measure 4.8.1B from EIR No. 441, would further reduce or avoid insignificant project impacts to energy usage.

4.10.7 Significance After Mitigation for Energy Resources

The analysis presented above indicates that future development consistent with the proposed project, GPA No. 960, would have less than significant impacts on demand for and consumption of energy resources, that is, elec-tricity and natural gas. Impacts on the infrastructure and facilities that produce and supply these energy resources, including the need for new or upgrading construction, as well as transmission lines for services, would also be less than significant. Lastly, the project would not have a significant effect on the use of energy and would not result in inefficient, wasteful or unnecessary consumption of energy. In addition, compliance with a variety of existing regulatory programs, standards and General Plan policies, in particular the Climate Action Plan, as well as existing Mitigation Measures 4.8.1A and 4.8.1B from EIR No. 441, would further reduce these insignificant project impacts.

Section 4.11

Flood and Dam Inundation Hazards

Section 4.11
Flood and Dam Inundation Hazards

4.11.1 Introduction

This section assesses the potential flood and dam inundation hazards that could affect future development accommodated by the proposed project, General Plan Amendment No. 960 (GPA No. 960). It also describes the potential impacts on people and property that could arise from future development and disturbances within areas at risk for flooding. Much of the hazard and background data in this section comes from Appendix H of the General Plan, "Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Safety Element of the New Riverside County 2000 General Plan" (Earth Consultants International, August 2000). Where such information is summarized, this study can be referenced for further details. Also, hydrology, water quality and storm drainage issues are discussed in Section 4.19 (Water Resources) rather than here.

A. Background

In the simplest sense, a flood occurs when water temporarily covers land that is not normally covered with water. For most rivers and streams, flooding is a natural and recurring event. Natural flooding typically occurs when heavy or continuous rainfall exceeds the absorptive capacity of soil and the flow capacity of the river, stream or lake. This causes the watercourse to overflow its banks onto adjacent lands. Floodplains are those lands most subject to recurring floods, situated adjacent to rivers and streams (the floodways). Floodplains are therefore "floodprone" and can be hazardous to development activities, particularly vulnerable ones, for example hospitals and houses.

1. Flooding Probability

Floods are usually described in terms of their statistical frequency. A "100-year flood" or "100-year floodplain" describes a flood event subject to a 1% (one in a hundred) probability of being equaled or exceeded in the given year. It should be remembered that this concept does *not* mean such a flood will occur only once in a hundred years. Whether or not it occurs in a given year has no bearing on the fact that there is still a 1% chance of a similar occurrence in the following year. The statistical frequency of a flood event expresses the degree of risk evaluated, e.g., 5-year, 20-year, 50-year, 500-year floodplain. A 10-year flood, for example, is the discharge that will exceed a certain volume which has a 10% (one in ten) probability of occurring each year.

2. Flooding and Related Terminology

In addition to the above, a number of terms that address various aspects of flooding are defined below to aid in the understanding of this section.

Floodplain: Most simply, any land areas, such as the lowland and relatively flat areas adjoining inland and coastal waters, susceptible to being inundated by water from any source.

Floodway: As defined by Riverside County Ordinance No. 458, it is the "channel of a river or other watercourse and adjacent land areas necessary to discharge the waters" from a 100-year flood without increasing the water's surface elevation "more than one foot at any one point." (Note, a different definition applies to the Colorado River for the purposes of Ordinance No. 458.) In common parlance, the floodway often refers to the active channel portion of a floodplain in which water flows on a regular basis.

Floodway Fringe: Refers to the area subject to inundation by floods generated from a watercourse, up to and including the floodway flow, but which is not required for safe conveyance of floodway flow.

Base Flood: Essentially equivalent to a 100-year flood. Delineated by a Base Flood Elevation (BFE) that indicates the water surface elevation that a 100-year flood would reach.

Flood Hazard: The potential for inundation by water that involves the risk to life, health, property and natural floodplain values. Generally, three physical characteristics with the greatest bearing on a floodplain's relative hazard are topography or slope (especially flatness), geomorphology (the type of soils and their characteristics) and hydrology (the amount and speed of water flow, as well as past flooding history, in particular). Flooding itself can cause three types of effects (primary, secondary and tertiary; see discussion under "Effects").

Development: As defined pursuant to Riverside County Ordinance No. 458 (and as generally used herein), this means "any man-made change to improved or unimproved real estate, including but not limited to, building or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, [or] storage of equipment or materials."

Special Flood Hazard Areas (SFHAs): Generally refer to areas within a floodplain subject to a 1% or greater chance of flooding in any given year. More specifically, however, Riverside County Ordinance No. 458, Section 3, includes a list of studies that encompass the "floodplains, flood boundaries and flood hazards" defined as SFHAs for the purposes of the ordinance. Note the "flood hazard areas" addressed by the County of Riverside in the General Plan and Ordinance No. 458 are only based *in part* on Federal Emergency Management Agency (FEMA) maps and are not synonymous with FEMA terms.

Flood Insurance Rate Map (FIRM): The official map on which FEMA or the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Floodproofing: Riverside County Ordinance No. 458 defines this as "any combination of structural and nonstructural additions, changes or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents."

Channel / Canal: A channel is a linear, incised watercourse; a canal is an artificial linear watercourse.

Dam: Any artificial barrier impounding (holding) or diverting water. Dams 25 feet and taller above the natural stream bed are regulated by the State of California pursuant to the California Water Code (CWC) Section 6002 *et seq.* Barriers (dams) below six feet in height or with storage capacity of under 15 acre-feet are not regulated by the State of California.

Dam Inundation Zone: The area downstream from any dam or impounded water; for large bodies of water, this can extend a very great distance. Formally defined in CWC Section 6000. The State of California designates areas of "potential flooding in the event of sudden or total failure of any dam...[that] would result in death or personal injury" should it fail (California Government Code [CGC], Section 8589.5(a)).

Reservoir: A natural or man-made area containing water impounded by a dam.

Seiche: Seiche is a standing wave that forms in an enclosed or partially enclosed body of water. The creation of seiche have been observed on lakes, reservoirs, swimming pools, harbors and seas. The effect is caused by resonances in the (at least partially) confined body of water. Most often these disturbances are caused by wind and are imperceptible. However, in the event of an earthquake, the ground movement (lateral and/or vertical) can be enough to create a large standing wave (seiche) that causes the "slosh" of the waterbody onto its shores at levels higher than expected.

Levee / Dike: Both of these structures are designed to hold back water. A "levee" normally refers to structures that only hold back floodwater or stormwaters (thus are only in use during these events). A dike is a linear construction that holds back water continuously, for example, the famous dikes of Holland that hold back the sea from the country's reclaimed lowlands. In the U.S., however, the term "levee" is also often used to refer to dikes; for example, the extensive system of dikes that hold back the tidal waters of the Sacramento-San Joaquin Delta create farmable islands of land within the Delta.

Sheetflow: The unconstrained flow of water across flat lands, typically at shallow depths (and as opposed to flow through a watercourse, which is delineated by bed and bank features).

Mudflow: Movement of earth (soil) caused by water, usually rain. Can be a hazard for certain types of loose (unconsolidated) soils, steep slopes (15 degrees or greater) and areas lacking vegetation (denuded by fire or grading, for example).

Alluvial Fan: An alluvial fan is a fan- or cone-shaped deposit of sediment crossed and built up by streams. These flows come from a single point source at the apex of the fan, most typically where a stream exits a canyon and transitions from bank-confined to unconfined sheetflow or meandering channels. Thus, alluvial fans are typically found where a canyon draining from mountainous terrain emerges out onto a flatter plain, especially along fault-bounded mountain fronts.

Stormwater: Stormwater is simply water that originates from a precipitation or snow event (i.e., rain, hail, sleet or snowfall, or snow melt).

Runoff / Urban Runoff: Runoff generally refers to stormwater discharged from developed areas, such as residential, commercial, industrial or public facilities, as well as construction areas (but not dairies, farms, feedlots or open space). "Urban runoff" may also include other water sources, such as irrigation flows/runoff and water flowing off of impervious surfaces, such as roofs, sidewalks and pavement. (Urban runoff may pick up various contaminants, such as fertilizers and pesticides from lawns, oils and other petrochemicals from roads, trash and debris from parking lots, etc., and can be a substantial source of water pollution if not adequately controlled.) Runoff will flow (drain) along the path of lowest elevation until reaching an area large enough to impound it or a discharge point that allows it to enter a storm drain, watercourse or other water conveyance feature.

When it does not soak into the ground, it becomes surface runoff and either flows directly into surface waterways or is channeled into storm sewers, which themselves eventually discharge to surface waters. Urban runoff may contain pathogens, sediment, trash, fertilizers, oxygen-demanding substances, pesticides, heavy metals and

petroleum products. If not properly managed and controlled, urbanization may adversely impact water quality and quantity in the receiving waters.

Scour: Scour is the powerful and concentrating clearing and digging action of flowing air or water, especially the downward erosion by stream water in sweeping away mud and silt on the outside curve of a bend, or during flooding.

3. Hydrology

The western one-third of Riverside County lies within the California Department of Water Resources South Coast Region, west of the San Jacinto Mountains, and the eastern two-thirds of Riverside County lie within the Colorado River Region. Designated watershed areas are included within each region, several of which partially lie within Riverside County. See EIR Section 4.19 for more information on hydrology; in particular, Section 4.19.2.B and Figure 4.19.3, show the major watersheds within Riverside County.

B. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they exist at the time of the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting constitutes the baseline physical conditions by which Riverside County, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used. For the flood and dam inundation baseline data used herein, the following sources were determined to be the best-supported substantial evidence available and were used for the reasons stated. Land use data and other environmental data sets are described in their respective sections elsewhere.

The data used herein is a compilation of project GIS (Geographical Information Systems) data derived from spatial analysis of the project performed by the Riverside County GIS Department. The project data was compared to County of Riverside 100-year floodplain and dam inundation maps. Riverside County's 100-year floodplain maps are updated based on information provided by FEMA, the U.S. Army Corps of Engineers (Army Corps), the California Department of Water Resources (DWR) and the Riverside County Flood Control and Water Conservation District (FCWCD). Dam and dam inundation maps are updated based on information obtained from the federal Bureau of Reclamation, the California Division of Safety of Dams and from FCWCD. (Note: Neither FEMA nor the County of Riverside has jurisdiction over dam inundation areas.) Additional analysis included within the section has been based on various sources cited in the text.

4.11.2 Existing Environmental Setting – Flood and Dam Inundation Hazards

Three principal types of flood hazards must be taken into account in the effort to protect people and property: main-stream flooding (including flash flooding) which are generally precipitation based, dam inundation and earthquake-induced flooding (i.e., tsunamis and seiche). The nature of each of these risks is described here. The relative susceptibility of the project's expected future development to each is discussed later in this section.

A. Precipitation-Related Flooding Hazards

1. Main-Stream Flooding

Main-stream flooding is the most basic type of flooding encountered. It occurs when water rapidly builds up in a drainage feature, such as a stream or river, and then surges downstream towards an outlet. When the flow level exceeds the capacity of the drainage's banks, flooding of lands outside the watercourse will result. This type of flooding process typically takes days or even weeks to arise, although in arid Southern California, floods set off in the space of hours are not unknown. At its most extreme, flashfloods are a type of main-stream flooding in which storm flows build up in less than 6 hours, often with little to no warning. During major floods, flood water carries heavy debris loads and causes considerable damage from deposition. For example, during a storm in 1969, the Santa Ana River carried a total load of more than 11 million tons of sediment.

The precipitation that leads to most main-stream floods that affect Riverside County can be attributed to three types of storm events. The first is a general winter storm that combines high-intensity rainfall and rapid melting of mountain snow pack. The second is a tropical storm out of the southern Pacific Ocean that can cause prolonged periods of heavy rainfall which saturates soils, increasing runoff. The third type is a summer thunderstorm which can lead to brief but heavy localized rainfall. In desert areas in particular, this third type of rainfall can lead to flash-flooding.

Historical stream flow data collected by the U.S. Geological Survey (USGS) indicate that in Riverside County peak stream flows typically occur in January, February and March. Riverside County's average precipitation varies from more than 30 inches per year in the San Jacinto Mountains to less than 5 inches per year in the Blythe region. According to the 2008 FEMA Flood Insurance Study for Riverside County, most major floods in the county occurred as a result of general winter storms. However, serious flooding, including potentially lethal flash-flooding, also occurred as a result of summer thunderstorms. Historical stream flow data for locations within the county is provided in Section 5.4 of the 1999 Existing Settings Report prepared for the 2003 RCIP General Plan.

According to FEMA, the major rivers in western Riverside County are dry or nearly dry most of the year and generally only pose flood threats to developments within the floodplain during general storms of long duration. When a major storm moves into the area, water collects rapidly and becomes surface runoff. The resultant flood flows have predominantly short durations and sharp peaks. Increased urbanization further increases flood potential by increasing the amount of impervious surfaces from which water will run off, instead of absorbing into the ground or puddling.

2. Historical Flooding Sources and Events

Historically, during the 20th century floods were the leading natural disaster in the United States in terms of number of lives lost and property damage. Since 1965, there have been 17 Gubernatorial and Presidential flood disaster declarations for Riverside County. The most recent declaration occurred in January 2011 after late January's severe winter storms and the resultant flooding led the governor and president to issue a disaster declaration covering ten counties in California, including Riverside County. Details on the historical flood events in Riverside County may be found in the 1999 Existing Setting Report. Also, see Appendix H of the General Plan for additional details. For details on the flood-controlling properties of dams and other structures along these rivers, see Section 4.11.2.

Santa Ana River: The Santa Ana River has been the source of the region's most notable floods in the last 150 years, including the Great Flood of 1862 in which flows exceeded an estimated 300,000 cubic feet per second

(cfs). Other years in which this river has flooded include: 1867, 1884, 1891, 1916, 1938, 1969, 1980 and 1993. Prior to extensive dam and reservoir controls, the Santa Ana River had a large flood event about every five years.

San Jacinto River: The 730-square mile San Jacinto River watershed drains into Lake Elsinore in western Riverside County. The San Jacinto River originates in the San Jacinto Mountains and passes through the cities of San Jacinto, Perris, Canyon Lake and Lake Elsinore. The river is an important regional resource that provides water supply, wildlife habitat, drainage and recreational opportunities to the region. The only major flood control structures on the river are levees in the City of San Jacinto built by the Army Corps in the early 1960s. Within the 30-mile reach of the river between Lake Elsinore and San Jacinto, only minor channelization exists. The river is characterized by expansive overflow areas, including the Mystic Lake area. The river has caused major flooding damage to agricultural areas and rendered Interstate 215 and several local arterial transportation routes impassable several times. The San Jacinto River flooded in 1916, 1927, 1931, 1937, 1938, 1966, 1969, 1980 and 1993. Its largest flood of record occurred on February 16, 1927, with a peak discharge of 45,000 cfs near San Jacinto. Agricultural uses, railways and highways were extensively damaged. The flooding in 1980 accompanied failure of the river's levee system, resulting in extensive additional damage.

Santa Margarita River, Temescal and Murrieta Creeks: Murrieta Creek passes through the cities of Murrieta and Temecula in southwest Riverside County, and then joins with Temecula Creek to form the upper reach of the Santa Margarita River. The Santa Margarita River flows southwesterly into San Diego County, through the Camp Pendleton Marine Base and then empties into the Pacific Ocean. Murrieta and Temecula experienced severe flood damage, estimated in excess of 10 million dollars, from Murrieta Creek overflow in January 1993. Camp Pendleton also suffered extensive flood damage, estimated at $88 million, to facilities and aircraft due to Santa Margarita River overflow.

An Army Corps Feasibility Study addressing flood control, environmental enhancement and recreation for Murrieta Creek was prepared in April 1998. Major floods have been reported nine times for Murrieta Creek: in 1862, 1884, 1916, 1938, 1943, 1969, 1978, 1980 and 1993.

San Gorgonio River: Flooding on the San Gorgonio River caused damage in 1938, 1965, 1966 and 1969. During the 1969 flood, the San Gorgonio River attained an estimated peak discharge of 17,000 cfs, which resulted in loss of life and extensive damage in the Cabazon area.

Whitewater River: The Whitewater River is the principal drainage course through the Coachella Valley. It is typically dry, but flows southeasterly when it carries water. The Whitewater has a total drainage area of approximately 850 square miles and drains areas as far away as the summit of San Gorgonio Pass and the steep southern and eastern slopes of Mount San Gorgonio. Although the mean annual precipitation on the floor of the Coachella Valley is low (4 inches), high and intense precipitation in the tall, steep surrounding mountains poses flood hazards. Floods that affect the Coachella Valley are typically of short duration with high peak volumes and carry large amounts of debris. In the Whitewater River basin, a major flood occurs on average every ten years. The largest flood on record was in March 1938, with peak discharge estimated at 42,000 cfs, almost twice the peak of the second largest flood, which reached 24,000 cfs in 1965.

Colorado River: Due to the long history of water storage in the Southwestern U.S., hydroelectric dams and other flood control facilities now span the multi-state expanse of this major river to channel water to the region's cities to reduce natural flooding risks. Today, water flow in this river is subject to extensive and elaborate plans designed to balance a variety of competing needs, such as supplying water, protecting the environment and ensuring adequate recreational opportunities on the river, to name a few. Further details are provided under the dam inundation hazards sub-section below.

3. Floodprone Areas in Riverside County

In Riverside County, the three largest drainages of concern for main-stream flooding are the Santa Ana River, San Jacinto River and Whitewater River. In the western portion of Riverside County, the large rivers are dry most of the year and only pose flood threats to developments within the floodplain during general storms of long duration. In western Riverside County, these include the Santa Ana, San Jacinto, San Gorgonio and Santa Margarita Rivers, as well as Temescal and Murrieta Creeks. Lake Elsinore and other lakes, as well as various alluvial fans throughout the county, are also susceptible to flooding, for example Millard Canyon. Major floods along the San Jacinto River resulting from intense rainfall have been shown typically to peak in approximately 1.5 days with a total duration of flooding of four days.

Eastern Riverside County, being marked by extensive desert, does not possess as many major flood-prone drainages; the Whitewater and Colorado Rivers being the two principal ones. Rather, because of the arid climate and extremely porous (sandy) soils, water flows tend to pass rapidly through the region. Tributaries to the major rivers present additional flood hazards, mostly caused by local thunderstorms. Within Coachella Valley, there are many smaller washes that run out of the surrounding mountains and down into the valley floor, in some cases emptying into Whitewater River to the northwest or the Salton Sea to the southeast. The desert areas extending to the east from the Palm Springs area are also susceptible to sheet flow flooding, with flow depths of generally less than 2 feet. These types of flows leave the mouths of canyons and often follow unpredictable paths. Lastly, the desert also contains numerous washes (for example, Morongo Wash) and alluvial fans that are susceptible to flooding (see discussion below).

Additionally, many of the smaller drainages throughout the county, particularly those running through the alluvial fans that flank Riverside County's hillsides, are susceptible to smaller-scale floods and also flash-flooding. Figure 4.11.1 (100-Year Flood Hazard Zones Within Riverside County) shows the areas of Riverside County considered potentially at risk for flooding based on information from FEMA mapping, plus DWR and County of Riverside data. Key waterbodies are described below; a list of all potential flooding sources studied by FEMA is provided in Table 4.11-A (Potential Flooding Sources Studied in Riverside County).

Table 4.11-A: Potential Flooding Sources Studied in Riverside County

Water Source Studied	Water Source Studied	Water Source Studied
Acacia Creek Drain	Lincoln Avenue Drain	San Sevaine Channel
Alessandro Wash	Little Morongo Wash	Santa Ana River
All American Canal	Long Canyon Wash	Sheet Flow along Ocotillo Road
Arlington Canal	Macomber Palms Channel	Smith Creek
Arroyo Del Toro	Magnesia Falls Road	Smith Creek West Tributary
Bear Creek	Magnesia Springs Channel	South Norco Channel and Trib.s A and B
Beaumont Chanel	Main Street Drain	Spring Brook
Bedford Canyon Wash	Mangular Channel	Spring Brook Wash
Big Morongo Wash	Marshall Creek	Stetson Avenue Channel
Biskra Palms Channel	McVicker Canyon Wash	Stovepipe Canyon Creek
Blind Canyon Channel	Metz Road Basin	Stream A (Vicinity of Des. Hot Springs)
Bly Channel	Mirage Indian Trail Wash	Sun City Channels A-A, C-C, H-H and X-X
Box Springs Wash	Mission Creek	Sun City Southeast Tributary
Calimesa Channel	Mockingbird Canyon Wash	Sunny Slope Channel
Carrizo Alluvial Fan	Montgomery Creek	Sunnymead Storm Channel
Channel H	Mountain Avenue Wash	Taylor Avenue Drain
Cherry Avenue Channel	Murrieta Creek	Temecula Creek
Coachella Valley Stormwater Channel	North Cathedral Channel	Temescal Wash
Country Club Creek and North Tributary	North Norco Channel and Trib.s A, B and C	Tequesquite Arroyo
Day Creek Santa Ana River	North Palm Springs Wash	The Veldt
Dead Indian Alluvial Fan	North Side Wolf Valley Creek	Third Street Basin

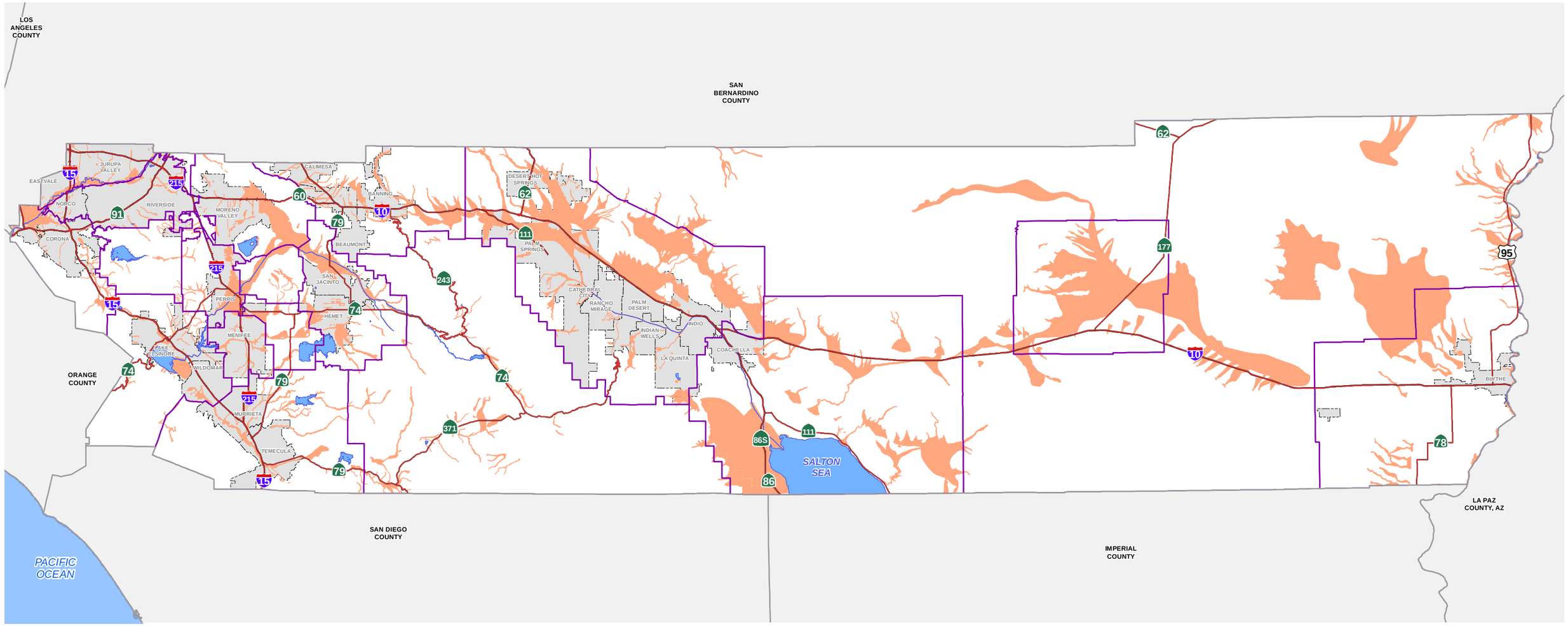
Water Source Studied	Water Source Studied	Water Source Studied
Deep Canyon Alluvial Fan	Oak Street Channel	Thousand Palms Canyon Wash
Deep Canyon Storm Water Channel	Ocotillo Drive Wash	Thousand Palms Main Channel
Desert Hot Springs Channel	Orange Lateral	Thousand Palms Tributaries A, B and C
Dunes View Road Channel	Ortega Wash	Thunderbird Wash
Dry Morongo Wash	Ortega Channel	Tramview Wash
East Cathedral Channel	Palm Canyon Wash	Tramview Wash Tributary
East Gilman Home Channel	Palm Valley Drain	University Wash
East Rancho Mirage Storm Channel	Park Hill Drain	Wash G
El Cerrito Channel	Pechanga Creek	Wash I
Elsinore Spillway Channel	Perris Valley Storm Drain	Wasson Canyon Creek
Garden Air Gold Course Wash	Pigeon Pass Channel	West Cathedral Channel
Gilman Home Channel	Prenda Wash	West Norco Channel
Harrison Wash	Pushawalla Canyon Wash	West Pershing Channel
Hemet Storm Channel	Pyrite Channel	Whitewater River
Highland Springs Channel	Rache Channel	Whitewater River (C.V.S.C.)
Interstate-10 Wash	Ramsey Street Drain	Whittier Avenue Channel
Kalmia Street Wash	Rice Canyon Wash	Woodcrest Wash
Lake Elsinore	Salt Creek and Tributary	Unnamed Stream A
Lakeland Village Channel	Salt Creek Overflow	Unnamed Stream B
Lakeview Wash	San Gorgonio River	Unnamed Stream C
Leach Canyon Channel	San Jacinto River	1001 Ranch Drain
Lime Street Channel	San Jacinto Lateral	1001 Ranch Drain West Tributary

Source: FEMA, Flood Insurance Study – Riverside County, California, and Incorporated Areas, Volume 1 of 4, Aug. 2008. Table 2 (Flooding Sources Studies By Detailed Methods).

a. Western Riverside County

As reported in the 2008 FEMA study (pages 15-16), extensive commercial and residential development has occurred within the floodplain of the Santa Ana River in the Rubidoux area and on Murrieta Creek in the communities of Murrieta and Temecula. Extensive residential development has encroached upon the floodplains of San Sevaine and Salt Creeks in the Mira Loma area. San Sevaine Channel was constructed to divert flows away from development along San Sevaine Creek, but with minimal effect on large floods. Some degree of improvement has been constructed on the Santa Ana River, Murrieta Creek and Salt Creek in these high-hazard reaches as well. Moderate industrial, commercial and residential development exists along the Temescal Wash floodplain, primarily adjacent to the Corona corporate limits along Sixth Street. Moderate residential development exists in the floodplains of the following streams: Day Creek in the community of Sunnymead; Edgemont B North Fork in the Edgemont area; portions of Noble Creek and Little San Gorgonio Creek; numerous small tributaries in the Lakeland Village area; the Romoland and Homeland areas; the east side of the City of Hemet; and along San Gorgonio Creek in the Cabazon area. In most cases, some improvement to the watercourse has occurred along with the progress of development.

Lake Elsinore is situated in the southwestern comer of Riverside County in the Santa Ana River basin. The total drainage area of the lake is 770 square miles, of which all but about 50 square miles come from the San Jacinto River watershed. Located in a natural sink, the lake's only outlet is via the Elsinore Spillway Channel and Temescal Wash. Under current conditions, the lake level must exceed an elevation of 1,260 feet (the highest point along the spillway channel) before any outflow will occur. Since 1965, Colorado River water has been brought in via the San Jacinto River, as needed to maintain a lake surface of approximately six square miles. Prior to this importation scheme, the lake was intermittent, occasionally being dry for several consecutive years. Development around the lake is concentrated on the urbanized northern shore, within the corporate limits of the City of Lake Elsinore. Moderately dense residential development can be found in unincorporated areas around much of the lake perimeter, but is generally less dense than within the city.



Data Source: Riverside County Flood Control (2013)

Flood Prone Areas

- 100 Year flood Zone
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.11.1

December 16, 2013

0 10 20 Miles

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

100-YEAR FLOOD HAZARD ZONES

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Throughout its history, Lake Elsinore has been subject to flooding and drying, depending on runoff amounts. The lake loses an average of 15,000 acre-feet a year to evaporation, dropping its surface level more than 4.5 feet. In wet years, runoff from the San Jacinto River watershed pours into Lake Elsinore, which is the lowest point in the watershed. Currently, natural runoff is the only source of water for the lake. In the past, when runoff caused upstream reservoirs to spill, Lake Elsinore often filled, but rarely discharged.

The Lakeview Wash study area, as identified by FEMA, is situated on an alluvial fan, positioned at the base of the Lakeview Mountains and adjacent to the floodplain of the San Jacinto River. The upper portion of the study area is largely undeveloped and the wash has eroded an entrenched path in the lightly vegetated natural fan surface. Below Tenth Street, the wash enters residential areas of moderate density and flow becomes subject to control by buildings and paved roads. Floods on Lakeview Wash are usually produced by orographically-induced thunderstorms (that is, caused by moisture interacting with mountains).

The Bautista Wash watershed, which includes Park Hill Drain, is located on the western flank of the San Jacinto Mountains in west-central Riverside County. Flooding from Park Hill Drain and Bautista Wash affects portions of the cities of Hemet and San Jacinto, as well as unincorporated Riverside County areas. Before reaching the San Jacinto River, the streams flow over the relatively smooth surfaces of an alluvial fan and apron. The lack of topographic relief allows floodwaters to spread out (sheet flow) over wide areas. The residential and commercial area is moderately dense and further development is expected in the area.

The Pechanga Creek/Wolf Valley area studied by FEMA is a wide alluvial wash in southwestern Riverside County. The topography of the valley indicates that the floodwater of Pechanga Creek formerly affected wide areas. At present, the creek is largely confined to the southern edge of Wolf Valley due to its own encroachment and the influence of Pechanga Road. The transfer of some flow from the creek to the northern portion of the valley appears possible; an occurrence which would augment the flood hazard potential posed by the smaller tributary streams now threatening the north side of Wolf Valley. Runoff from Wolf Valley enters Temecula Creek and finally the Santa Margarita River. Within the Pechanga Indian Reservation, yearly mining of the bottom of Pechanga Creek as a source of sand causes alterations in the natural configuration of the channel.

b. Eastern Riverside County

In addition to major rivers (Whitewater and the Colorado), the watersheds of the desert create a number of alluvial fans in the many canyons and mountains that cross the desert. Alluvial fans studied near Thousand Palms and Desert Hot Springs are located on the northeastern side of the Coachella Valley at the bases of the Indio Hills and the Little San Bernardino Mountains, respectively. Coachella Valley is a northwest/southeast trending valley lying between the Little San Bernardino and Santa Rosa Mountains. The major settlements of Palm Springs and Palm Desert are located on the southwestern side of the valley on alluvial fans along the Santa Rosa Mountains. The detailed FEMA study areas (on the opposite side of the Coachella Valley) are affected by floodwater that originates in both the Indio Hills and the Little San Bernardino Mountains. Runoff from the large drainage basins of Thousand Palms Canyon, Pushawalla Canyon and Thousand Palms Main Channel have formed two sets of alluvial fans: between the Indio Hills and Little San Bernardino Mountains and at the base of the Indio Hills. Runoff from the Little San Bernardino Mountains spreads out over the initial fan area, then re-concentrates before flowing through or around the Indio Hills and opening out again onto the fans.

The intervening set of alluvial fans helps to reduce peak discharges from the larger watersheds by promoting the spreading and infiltration of runoff from the Little San Bernardino Mountains. The remaining basins are much smaller in size and represent watersheds draining only the Indio Hills. All of the streams carry water and sediment into the general areas of Desert Hot Springs or Thousand Palms, forming numerous coalescent alluvial fans. Many desert locations are subject to flood hazards from more than one flooding source due to the wide

areas threatened by each of the streams as they flow over the debris cones. In addition, the Interstate 10 freeway was constructed at the base of the alluvial fans adjacent to the Indio Hills, in what appears to be an abandoned channel of Big Morongo Wash.

The principal drainage course through the Coachella Valley from the City of La Quinta southward, the Whitewater River passes through the developed portion of Coachella Valley via channelization within the Coachella Valley Stormwater Channel. This man-made channel flows northeast and eventually empties into the Salton Sea. The Coachella Valley Water District maintains the channel.

The Salton Sea was formed accidentally in 1905 when floods eroded a cut in a bank of the Colorado River made during construction of the All-American Canal. As a result, water was diverted from the Colorado River into the Salton Trough forming the sea. Presently, the western six miles of Salton Sea lie within Riverside County; the remainder lies in Imperial County. Because of the Sea's relatively flat shoreline, even a slight increase in water levels can flood the recreational facilities along the water's edge. In the late 1970s and early 1980s, major flash-flooding in the Imperial and Coachella Valleys and flood control releases from Colorado River dams negated local conservation efforts to control the rising sea. Coachella Valley Water District (2000) reports that improved irrigation practices and a reduction in California's use of Colorado River water after completion of the Central Arizona Project have subsequently contributed to an on-going gradual decrease in the Salton Sea's elevation.

4. Flood Maps for Riverside County

The Federal Insurance Rate Map (FIRM) is the official map created and distributed by FEMA as part of the National Flood Insurance Program (NFIP). (See Section 4.11.3 (Policies and Regulations Addressing Flood and Dam Inundation) for more information). It delineates Special Flood Hazard Areas, those areas subject to inundation by the base flood, for every county and community that participates in NFIP. FIRMs contain flood risk information based on historic, meteorological, hydrologic and hydraulic data, as well as open space conditions, flood control works and development. Figure 4.11.1 shows mapped floodways and floodplains for unincorporated Riverside County (from several sources, as specified in Riverside County Ordinance No. 458). In addition to FEMA FIRMs, Riverside County has developed its own flood maps that account for additional areas of known risk. *The Riverside County Planning Department and Riverside County Flood Control and Water Conservation District work in continued coordination to ensure the flood safety of new development within the County*. Riverside County flood maps delineate 1% annual chance (100-year) flood boundaries and elevations for areas not studied by FEMA.

As noted above, Riverside County Ordinance No. 458 (Regulating Flood Hazards and Implementing the National Flood Insurance Program) specifies the sources of flood hazard mapping applicable in the County of Riverside. The ordinance applies to "all the *special flood hazard areas within the* ~~following~~ unincorporated areas *and within the jurisdiction* of the County of Riverside *on file at [Riverside County Flood Control and Water Conservation District] headquarters and shown on the Public Flood Hazard Determination Interactive Map found at http://rcflood.org. These special flood hazard areas incorporate*:"

- The flood hazard areas shown on the maps prepared by the Federal Insurance Administration entitled, "The Flood Insurance Study for the County of Riverside," effective August 28, 2008, with accompanying Flood Insurance Rate Maps and Flood Hazard Boundary Maps, including any amendments, revisions or additions *that go into effect pursuant to the provisions of applicable Federal law*.

- The flood hazard areas shown on the maps prepared by the U.S. Army Corps of Engineers entitled:

    - San Gorgonio River and Smith Creek, June 1973.

- San Gorgonio River and Tributaries, October 1974.
- *Warm Springs Creek, February 2003.* ~~Santa Ana River Mainstem Project, August 1991.~~

- The flood hazard areas shown on the maps prepared for Riverside County*, including any amendments, revisions or additions* ~~entitled~~:

- ~~Wildomar Valley, 100-Year Floodplain Limits, October 1979, as revised May 1986.~~
  - Cactus Valley, 100-Year Floodplain and Floodway Limits, March 1980.
  - Cabazon Flood Study, Flood Hazard Areas, June 1980.
  - Lakeview and Sierra Vista Tracts, 100-Year Floodplain Limits, October 1990.
  - Tucalota Creek, October 1974.
  - Long Valley Wash, October 2002.
- ~~Paloma Wash, October 2002.~~
- ~~Warm Springs Creek, February 2003.~~
  - Juniper Flats Floodplain, May 2006.
  - Flood Insurance Study for Oasis Area of the Coachella Valley, April 2003.
- ~~Awareness Maps, supplemented as needed by delineated floodplain area information.~~
- *The flood hazard areas as shown on the Awareness Maps that were prepared by the California Department of Water Resources and received by Riverside County Flood Control and Water Conservation District on July 25, 2011, including any amendments, revisions or additions that are adopted by the County Board of Supervisors.*
- The flood hazard areas shown on the map prepared as part of the "Flood Plain Information, Colorado River, Palo Verde Dam to Imperial Dam," dated October 1974, for that area between the Palo Verde Diversion Dam and Taylor Ferry; or on any Flood Insurance Rate Maps and Flood Hazard Boundary Maps, including any amendments or additions *that go into effect pursuant to the provisions of the applicable Federal laws for the Colorado River.*
- Any maps of flood hazard areas adopted by resolution of the Riverside County Board of Supervisors.

The ordinance goes on to state that "notwithstanding the provisions of any other ordinance to the contrary," within the *special flood hazard areas shown on the maps referred to above* ~~unincorporated areas of Riverside County shown on the above maps~~, "no structure, including flow-obstructing structures, shall be constructed, located or substantially improved and no land shall be graded, filled or developed, and no permit or approval shall be granted therefore, unless it complies with all the applicable requirements" of Ordinance No. 458 and all other applicable county ordinances. This strict prohibition is the principal means Riverside County has for ensuring new development is not constructed in, or affected by, 100-year flood hazards or exposed to flood risks.

B. Dam Inundation Hazards

The second type of flood hazard, dam inundation, can also result in downstream flood damage. However, where main-stream flooding occurs as a result of precipitation (rain or snow) runoff, dam inundation flows are a result of the failure of a dam. As defined in the State's Multi-Hazard Mitigation plan, page 330, dam failure is the "un-controlled release of impounded water from behind a dam." Causes of dam failure include flooding, earthquake, blockage, landslide, lack of maintenance, improper operation, poor construction, vandalism and terrorism.

The Multi-Hazard Mitigation Plan (page 331) also notes: "The term 'dam failure' encompasses a wide variety of circumstances. Situations that would constitute a dam failure vary widely, from developing problems to a partial or catastrophic collapse of the entire dam. Potential causes of a dam failure are numerous and can be attributed to deficiencies in the original design of the dam, the quality of construction, the maintenance of the dam and [functioning] of the appurtenances [during dam operation], and acts of nature including precipitation in excess of the designed capacity, flood and damage from earthquakes. Water over-topping the dam crest is a common cause of failure in earthen dams. Overtopping will cause erosion of the dam crest and eventual dam breach. Piping of earth dams is another common form of failure. Piping is a form of erosion that occurs underground caused by rodent burrowing and the presence of extensive root systems from vegetation growing on and around the dam." Dam failures can also arise from the earthquake-induced effects of liquefaction, lateral spreading or primary fault rupture. See Section 4.12 (Geology and Soils) for further details on these.

A dam failure event is extremely hazardous, as it will typically occur quickly and with little warning. Areas directly below the dam are at the greatest risk. The area downstream of a dam potentially at risk to flooding should the dam fail is called the "dam inundation zone." The zone is defined by a number of factors including downstream topography, soils and the volume of water impounded by the dam on its upstream side in the associated reservoir. As water moves farther downstream and decreases in velocity and depth, the magnitude of the damage and potential risk to life and property decreases.

In addition to structural failure, dam inundation can also occur by overtopping, i.e., when the level of the water being held on the dam's upstream side (in its reservoir) exceeds the height of the dam itself. When this happens, water ends up flowing over the top of the dam (instead of through it) in an uncontrolled manner, possibly resulting in flooding downstream depending on the volume. This type of flow can also lead directly to failure of the dam itself with additional flooding the result. However, since dam reservoir heights are closely monitored and controlled, this type of dam inundation is quite rare in the U.S. For levees and canals (which can be considered a type of dam that line a river course), this scenario is a common cause of flooding hazard, particularly for large rivers.

1. Major Facilities With Dams in Riverside

Under the California Water Code, dam safety is regulated by the DWR, which delegates the program to the Division of Safety of Dams. Neither Riverside County nor FEMA have jurisdiction over dam inundation areas. Among other duties, the California Emergency Management Agency runs a Dam Safety Program (established by CGC Section 8589.5 in 1972), which collects and reviews dam failure inundation maps and evaluated waivers from the inundation mapping requirement. It is also the designated repository of the official dam failure inundation maps used in California's Natural Hazard Disclosure statement for real estate transactions, pursuant to Civil Code Section 1103.

The following locales/facilities represent major flood risk management efforts in Riverside County or affect downstream lands within Riverside County. Also covered are water storage facilities (reservoirs) that have one or

more dams associated with them that could cause dam inundation damage within Riverside County in the unlikely event it failed. For dams, only the largest ones in or affecting Riverside County, i.e., those over 100 feet high or impounding over 100,000 acre-feet, are described in detail below. See Table 4.11-B for the full list of regulated dams (i.e., dams meetings the size for falling under state DWR jurisdiction pursuant to CWC Sections 6000-6008) within Riverside County. Note: Dams and reservoirs owned by the federal government are generally not subject to state jurisdiction.

a. Dams and Levees

Seven Oaks Dam: The Seven Oaks Dam is located on the Santa Ana River in San Bernardino County, approximately four miles northeast of Redlands, in the southern San Bernardino Mountains. The dam was completed in 1999 by the Army Corps, Los Angeles District, as part of the Santa Ana River Mainstem Project. Operating in tandem with Prado Dam 40 miles downstream, it is an important flood control structure for the Santa Ana River channel through northwestern Riverside County. Historical flood flows on the Santa Ana have exceeded 300,000 cfs. Together, these dams protect the burgeoning populations of western San Bernardino and Riverside counties, as well as northern Orange County.

The Seven Oaks Dam consists of a zoned, earth-filled embankment that is 40 feet wide at its crest and over 2,200 feet wide at the base. In total, the dam is 550 feet high and nearly 3,000 feet long. There is also a spillway, outlet tunnel, air shaft, gate chamber and intake structure tower. Seven Oaks is the 12th highest dam in the country and also the 10th largest earthen dam. It has a reservoir capacity of just under 148,000 acre-feet. During the early part of each flood season, runoff is stored behind the dam in order to build a debris pool to protect the outlet works. Small releases are made on a continual basis to maintain the downstream water supply. During a flood, Seven Oaks Dam stores water destined for Prado Dam for as long as the reservoir pool at Prado Dam is rising. When the flood threat at Prado Dam has passed, Seven Oaks releases its stored flood water at a rate not exceeding the downstream channel capacity. At the end of each flood season, the reservoir at Seven Oaks gradually drains and the Santa Ana River flows through unhindered. The Army Corps reports that Seven Oaks is designed to completely contain a flood of up to 85,000 cfs, which corresponds to a 350-year flood event. Also, in view of its location in proximity to the San Andreas Fault, to ensure its safety, the dam was designed to withstand an 8.0-magnitude earthquake.

Prado Dam: Prado Dam (frequently recognized by its now-defaced Bicentennial mural) is a flood control and water conservation structure located at the upper end of Lower Santa Ana River Canyon, a natural constriction controlling 2,233 square miles of the 2,450-square mile Santa Ana River watershed. The dam embankment is approximately two miles west of the City of Corona. Portions of the reservoir are in both Riverside and San Bernardino counties. The 106-foot high dam impounds runoff from uncontrolled upstream drainage areas along with water released from other storage facilities and can store over 295,000 acre-feet. The Prado Reservoir is owned by the Army Corps. Historically, water releases above 5,000 cfs have damaged downstream improvements.

In January 2005, heavy rain lead to water seeping through an earthen extension to the dam, necessitating water release to relieve pressure on the facility. As a safety precaution, over 3,000 downstream residents were evacuated for roughly 24 hours. In 2009, downstream channel improvements were made to increase downstream channel capacity from 5,000 cfs to over 30,000 cfs as part of a three-phase improvement plan for Prado Dam that also increased freeboard height and overall reservoir capacity. The Prado Flood Control Basin (in which the dam is located) lies within the 2,000-acre Prado Regional Park, in Chino (San Bernardino County). The park offers fishing, a shooting range (site of the 1984 Olympic shooting events), archery, camping and a golf course.

Dams Along the Colorado River: The easternmost border between Riverside County and Arizona is formed by a stretch of the Colorado River. There is only one major dam along the segment of river abutting Riverside County. Lands along the Colorado River corridor could suffer from catastrophic failure of dams that are located far outside the borders of Riverside County. These dams include Palo Verde Diversion Dam, Headgate Rock Dam, Parker Dam, Davis Dam and Hoover Dam. For additional details on the dams along the Colorado River, see Appendix H of the General Plan.

In 1993, the U.S. Bureau of Reclamation evaluated inundation potential along the Colorado River by modeling failure of combinations of Hoover, Davis and Parker Dams. Relevant results, data and mapping from this study are presented in General Plan Appendix H and also reflected in the dam inundation mapping shown in Figure 4.11.2 (Dam Inundation Failure Zones in Riverside County). To summarize, the evaluation determined that the City of Blythe, with roughly 21,000 people, the main population concentration along the Colorado River within Riverside County, sits roughly 207 feet above sea level. This is well within the elevation under the water surface levels predicted for a catastrophic failure of any combination of Colorado River dams. However, in the event of such a catastrophic dam failure, FEMA has estimated that it would take a minimum of 23 hours before the floodwaters reach Blythe allowing ample time for any necessary evacuation efforts. Thus, these dams do not pose immediate inundation risks.

Lake Elsinore: Located at the southern end of Temescal Canyon, at roughly six miles long and one and a half miles wide, Lake Elsinore is the largest natural freshwater lake in Southern California. It is classed as the terminal lake of a partially closed basin, located at the extreme northwestern end of Temecula Valley and cut off from the Santa Margarita River watershed by a slight ridge running between the Sedco Hills and Elsinore Mountains, south of the lake. The lake lies at the lowest point in the 750-square-mile San Jacinto River watershed and is fed by that river. Leach and McVicker Canyons also contribute inflows to the lake. The lake's primary outlet is via Temescal Wash, although flows only occur under exceptionally rainy conditions. In total, the lake spans roughly 3,000 acres at normal fill levels, with depths averaging 27 feet (42 feet maximum).

Lake Elsinore's northwestern shore rises to the surrounding foothills, running along the foot of the slopes to the Alberhill Creek outlet, which passes through downtown Lake Elsinore (the city). The lake south of the outlet lies in an open area at the mouth of the San Jacinto River, although a long flood control levee running along the southeast end of the lake cuts it off from the river. As a result, the isolated section only fills after an extremely large rainfall event. Seismically, Lake Elsinore is the largest sag pond (body of water collected in the lowest parts of a depression formed between two strands of an active strike-slip fault) in the Elsinore Fault Zone.

b. Water Reservoirs

These water features were designed to function as reservoirs for Southern California's water supplies. They are listed here since each has one or more dams associated with them.

Diamond Valley Lake: Diamond Valley Lake was created by the Metropolitan Water District of Southern California (MWD) in Domenigoni Valley, four miles southwest of the City of Hemet. Built at a cost of nearly $2 billion, excavation for the three earthen dams necessary to create the lake was begun in 1995 and completed in 2002. It is reported to be the largest earth-and-rock fill project ever constructed in the United States. The reservoir's west dam is 1,200 feet long at its base and reached 285 feet high; the east (Eastside) dam is 10,500 feet long and 185 feet high; and the saddle dam is 2,300 feet long and 130 feet high along the ridgeline. Together, the reservoir created by these dams runs between 160 to 260 feet deep and has a storage capacity of 800,000 acre-feet (261 billion gallons).

Diamond Valley Lake forms Southern California's largest reservoir for storing surface water. It almost doubles Southern California's surface storage capacity and is intended to ensure a six-month water supply in the event of an emergency. The reservoir also provides additional water for drought protection and peak summer needs. Water stored at Diamond Valley comes from the Colorado River Aqueduct through the San Diego Canal and from the State Water Project through the new 12-foot diameter, 45-mile Inland Feeder Project. The lake is also used for recreational activities, including boating and fishing (for stocked bass, bluegill, crappie, catfish, shad and trout). Adjacent to the lake is a recreation park, an aquatic center and a visitor center, plus the Western Science Center (displaying fossils uncovered during the dams' construction). Other extensive plans for recreational uses have yet to be accomplished by MWD.

Lake Hemet: Located in the San Jacinto Mountains above western Riverside County, Lake Hemet serves as a water storage reservoir, impounding just over 19,000 acre-feet behind 135-foot tall Hemet Dam. When completed in 1895, at a height of 122.5 feet, Hemet Dam was the largest solid masonry dam in the world until surpassed in 1911 by construction of the Roosevelt Dam in Arizona. Lake Hemet drains an area of roughly 67 square miles. The reservoir is owned and operated by the Lake Hemet Municipal Water District. It is available for recreational uses, including fishing (from stocked trout, catfish, bluegill and bass) and boating.

Lake Mathews: Lake Mathews is located approximately five miles south of the City of Riverside and is the terminal reservoir of the Colorado River Aqueduct. It is owned and operated by MWD and provides drinking water for approximately 15 million people. The dam forming the reservoir is 264 feet high and impounds 222,400 acre-feet of water. In collaboration with MWD, FCWCD is in the process of obtaining funding for a Drainage Water Quality Management Plan for the Lake Mathews Watershed Project. The objective is to reduce non-point source pollution in Lake Mathews and Cajalco Creek, which drains into Lake Mathews, through the construction of a series of wetlands. It also aims to reduce the seismic vulnerability of Lake Mathews outlet facilities to ensure a reliable supply of water following a major earthquake.

Lake Perris: Situated in a valley between the cities of Perris and Moreno Valley, the reservoir at Lake Perris was formed in 1973 with the construction of a 130-foot high and nearly two-mile long dam in Bernasconi Pass. Its main function is as the southern terminus of the State Water Project (which conveys water from the Sierra Nevada Mountains across the state). It also impounds a roughly 10-square mile watershed and holds nearly 155,000 acre-feet. At roughly three miles long and two miles across, the lake offers approximately 10 miles of accessible shoreline.

The area immediately around the lake is owned by DWR and managed by the California Department of Parks and Recreation, although DWR owns and operates the State Water Project facilities on site, including the dam and outlet facilities. The California Department of Fish and Wildlife owns the areas below the dam and manages them for habitat conservation value. The roughly 6,000-acre area surrounding the lake forms the popular Lake Perris State Recreation Area (SRA), offering a variety of recreational uses including fishing (the stocked lake offers bass, bluegill, trout, catfish, crappie, sunfish and carp), boating and swimming. The north shore of the lake includes park facilities, such as campgrounds, offices, the Regional Indian Museum, parking lots, a marina, group picnic areas, a horse camp and a bike trail. Along the south shore of the lake is Bernasconi Beach and picnic areas, plus camping and rockclimbing areas. The area surrounding the SRA is mainly open space, particularly conservation (OS-CH) lands. The Perris Fairgrounds operate on 108 acres at the corner of Ramona Expressway and Lake Perris Drive, west of the Lake Perris SRA. Nearly one million people visit the fairgrounds annually. The fairgrounds are home to an 8,000-seat speedway track, a BMX track, a skate park and an equestrian arena, among other attractions.

According to an extensive study conducted by the State (DWR) in 2005, there are fears that an earthquake of magnitude 7.5 or larger could breach the dam. This engineering study, combined with the reservoir's location

within a few miles of the San Jacinto Fault, makes it a key concern for seismically triggered dam failure and inundation hazards. In 2011, the State of California issued the Perris Dam Remediation Program outlining how repairs to the dam would be performed to assure its safety. According to the DWR, the program consists of remediation (upgrading roughly 700,000 cubic yards of the dam face with "cement-deep soil mixing" and a reinforcement berm), outlet tower replacement and emergency outlet extension. The construction phase is set to begin in 2014 and be completed by the end of 2015. In the interim, however, the DWR reports that there is "no imminent threat to public safety."

Lake Skinner: This large reservoir was created in 1973 along Tucalota Creek at the foot of Bachelor Mountain in the Auld Valley, northeast of Temecula. After expansion in 1991, the Skinner Clearwell Dam that created the reservoir measures 109 feet high and impounds just under 63,000 acre-feet. The lake is operated by the Riverside County Regional Park and Open-Space District (County Parks) under lease from MWD. It offers a number of recreational uses, including sailing, fishing and swimming (in an off-reservoir area), as well as horseback riding, hiking, picnicking and camping in the surrounding 1,400-acre park. The reservoir is supplied by water from both the Colorado River Aqueduct and the State Water Project, and is a source of drinking water (after treatment) for 2.5 million people in Riverside and San Diego counties.

Vail Lake: Located on Temecula Creek in the Santa Margarita River watershed, the reservoir of Vail Lake was created in 1948 by a 152-foot tall dam. The reservoir drains an area of 306 square miles and can hold 62,000 acre-feet. It has been owned and operated by the Rancho California Water District since 1978. The lake is supplied by Kolb, Temecula and Wilson creeks. The property surrounding Vail Lake is privately owned and recreational access to the lake is privately controlled. A members-only resort facility has been operated off and on at the site of a former park over the years. Seismic studies of the region show that roughly nine local faults and lineaments converge in the vicinity of Vail Lake. Little development, however, lies in the immediate vicinity downstream of the dam.

2. Dam Inventory and Failure Risks

As shown in Figure 4.11.2, within Riverside County more than 20 dam failure inundation zones have been identified for existing dams and reservoirs. Data for Riverside County dams was obtained from the National Inventory of Dams (NATDAM) 2000 based on 1998-99 data submitted by local agencies. A summary of the dam inventory data from NATDAM is presented in Table 4.11-B, below.

The NATDAM hazard classifications included in Table 4.11-B are based entirely on the downstream hazard potential. Ratings are set by FEMA and confirmed with site visits by engineers. A dam is considered a "high" hazard potential if it stores more than 1,000 acre-feet of water, is higher than 150 feet tall and has the potential for downstream property damage and/or causing downstream evacuation. These are dams where failure or mis-operation would likely cause loss of human life. Dams are considered to be of "significant" hazard potential where failure or mis-operation would result in no probable loss of human life, but could cause economic loss, environmental damage, disruption of lifeline facilities or affect other concerns. These dams are often located in predominantly rural or agricultural areas, but could also be located in areas with population and significant infrastructure. Lastly, dams with "low" hazard potential are those where failure or mis-operation would not be likely to result in loss of human life, economic or environmental losses. Losses are principally limited to the owner's property.

Table 4.11-B: National Inventory of Dam (NATDAM) Data for Riverside County

Dam Name	River	Nearest City	Dam Height (feet)	Reservoir Storage (acre-feet)[1]	Year Built	Drainage Area (sq. miles)	NATDAM Canyon Hazard Desig.[2]
Vail	Temecula Creek	Temecula	152	62,000	1949	306	H
Quail Valley	San Jacinto River	Lake Elsinore	37	178	1959	1.6	S
El Casco	San Timoteo Creek	Redlands	19	188	1879	0.1	S
Railroad Canyon	San Jacinto River	Lake Elsinore	94	19,367	1928	664	H
Lake Hemet	San Jacinto River	Valle Vista	135	19,112	1895	67	H
Foster	Lily Creek	Idyllwild	38	56	1945	0.9	L
Fairmont Park	Santa Ana River	Riverside	12	330	1923	22	S
Mockingbird Cyn.	Mockingbird Cyn.	Riverside	74	2,905	1914	13.1	H
Harrison Street	Harrison Creek	Riverside	50	350	1954	2.0	H
Wide Canyon	West Wide Canyon	Des Hot Springs	84	1,490	1968	33.5	S
Box Springs	Box Springs Canyon	Riverside	49	630	1960	4	H
Pigeon Pass	Pigeon Pass	Moreno Valley	36	1,400	1958	8.7	H
Sycamore	Sycamore Canyon	Riverside	63	1,510	1956	10.7	H
Alessandro	Alessandro Creek	Riverside	66	530	1956	4.6	H
Woodcrest	Woodcrest Creek	Riverside	44	420	1954	5.3	H
Jurupa Basin	Jurupa Wash	Riverside	22	291	1983	1.7	S
Mary Street	Alessandro Wash	Riverside	40	570	1981	6.7	H
Declez Detention	San Sevaine Creek	Riverside	30	480	1984	10.7	H
Tahquitz Creek Debris Basin	Tahquitz Creek	Palm Springs	32	10	1991	18	H
Sunnymead Ranch	Reche Canyon	Moreno Valley	41	540	1985	2	H
Prenda	Prenda Creek	Riverside	44	291	1954	1.9	H
Lee Lake	Temescal Canyon	Corona	47	2,800	1919	53	S
Metz Road Debris	San Jacinto River	Perris	12	154	1981	1	S
Tachevah Creek	Tachevah Creek	Palm Springs	42	1,720	1964	3.2	H
Oak Street	Oak Street Creek	Corona	36	400	1979	6.0	H
Mabey Canyon	Mabey Creek	Corona	46	111	1974	1.5	H
Henry J. Mills Ck.	Offstream	Riverside	23	103	1979	0	L
Skinner Clearwell	Offstream	Temecula	44	410	1991	0	S
Dunn Ranch	Hamilton Creek	Anza	44	126	1987	0.2	S
Robert A. Skinner	Tocalota Creek	Temecula	109	62,800	1973	51	H
Matthews	Cajalco Creek	Corona	264	222,400	1918	40	H
Perris	Bernasconi Pass	Perris	130	154,852	1973	10	H
Lakeview	San Jacinto River	Nuevo	37	990	1994	7.6	H
Eastside	Domenigoni Valley Creek	Hemet	284	800,000	2001	13	H
Goodhart Canyon Detention Basin	Goodhart Canyon	Hemet	15	1,038	1999	3.8	H
Henry J. Mills #2	Offstream	Riverside	34	92	1996	0.1	S
Henry J. Mills	Offstream	Riverside	48	98	1979	0.03	S
Prado Dam	Santa Ana River	Corona	106	295,581	1941	2,233	H
Eastside Detention Dike #1	Whitewater River	Thermal	42	21,000	1949	N/A	L
Eastside Detention Dike #2	Whitewater River	Thermal	48	18,000	1949	N/A	L
Westside Detention Dike #2	Whitewater River	Thermal	37	630	1968	N/A	L
Westside Detention Dike #3	Whitewater River	Thermal	22	1,300	1970	N/A	L
Westside Detention Dike #4	Whitewater River	Thermal	48	4,900	1968	N/A	L

Footnotes:
1. An acre-foot is the amount of water it takes to cover one acre to the depth of one foot. One acre-foot equals approximately 325,900 gallons.
2. NATDAM Hazard Potentials: H = High; S = Significant; L = Low. See text for further details.

Source: Earth Consultants International, General Plan Appendix H: Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Safety Element, 2000.

3. Earthquake Hazards for Dams

Several California dams have been tested by earthquakes. Experience has shown that dams must be made safe before earthquakes occur. After an earthquake strikes, there are many obstacles that hinder the quick detection and treatment of earthquake-damaged dams or implementation of evacuation plans. After recent earthquakes, analysis of the emergency response efforts found that key response personnel were not available, communications were blocked, equipment and operators were in short supply, helicopters were not available for inspections and access to repair materials and dams was difficult.

In 1971, the San Fernando earthquake damaged the Lower San Fernando Dam. The reservoir had to supply a large portion of the water for Los Angeles for two weeks while severe damage to the supply aqueducts was repaired. This scenario could be repeated in Riverside County following a major earthquake, as many of Riverside County's aqueduct systems cross major faults at numerous locations.

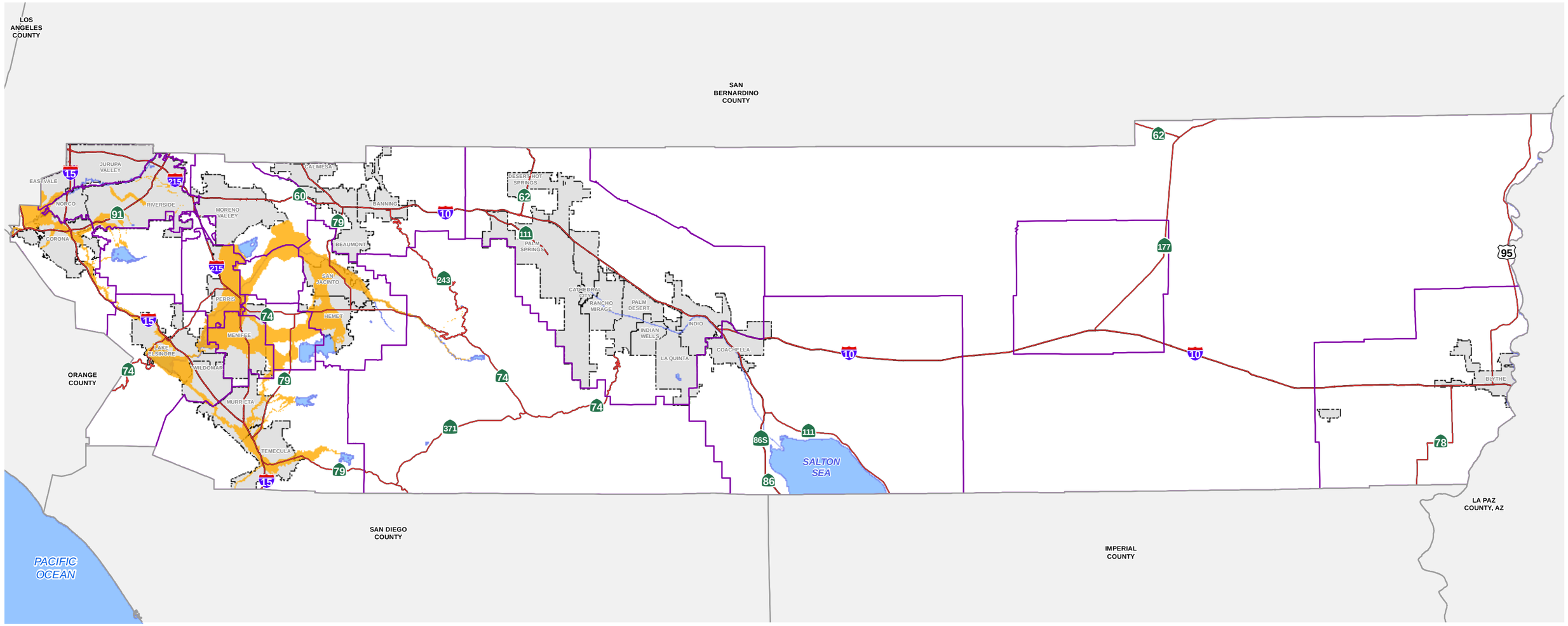
A wide variety of creative solutions have been used to improve the seismic stability of dams in California. Although there have been major advances in analysis techniques, rehabilitations have not changed radically. Multiple arch dams are still being stiffened and embankment dams buttressed. Reservoir storage restrictions are effective ways to rapidly increase dam safety, but can prove troublesome in the long term. To improve the seismic safety of dams and other flood control structures, a variety of state and federal agencies have projects planned or underway in California.

In a review of seismic dam safety, the DWR found seismic safety hazards in a portion of the Lake Perris Dam foundation. While DWR noted that there is currently no imminent threat to life or property, the State of California has taken actions to lower the lake's water level in an effort to ensure public safety. DWR has developed a plan to repair the dam and is currently awaiting certification of the Final Environmental Impact Report. DWR anticipates that construction for the repairs will begin in mid-2013 and be completed by 2016.

C. Seiche and Tsunami Hazards (Earthquake-Induced Flooding)

Seiche is simply an underwater wave that oscillates through a body of water. Small rhythmic seiche only a few inches high are almost always present on larger lakes as a result of the water body's depth, contours and water temperature. They are often imperceptible to the eye, noticeable only in periods of unusual calm. However, when an event, such as an earthquake or landslide, causes a reverberating wave or waves to form in an enclosed body of water, the motion is akin to the rocking of water in a bowl that has been moved. The resultant "slosh" when these waves reach the lake's shore can cause localized flooding. In a severe case within a man-made reservoir such waves could damage the reservoir's dam. Typically, the more shallow and elongated the waterbody, the more pronounced the seiche effect. Flooding outside the banks of the waterbody is the result of an underwater wave emerging along shallow shorelines. A big seiche on Lake Superior in 1995 caused water to fall and rise again by three feet within 15 minutes.

Larger seiche can be caused by high winds, earthquakes or underwater landslides. The magnitude of seiche caused by landslides or surface fault rupture depends on the amount of water and ground displacement. For example, modeling data produced for Lake Tahoe indicate that its deep water in conjunction with underlying fault placement and geology play large roles in seiche potential.



Data Source: State of California Office of Emergency Services (2003) and Riverside County (2006)

Dam Hazard Zones

- Dam Hazard Zones
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.11.2

December 16, 2013

Miles
0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

DAM FAILURE INUNDATION ZONES

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Tsunamis are a related phenomenon in which the water waves are caused by an up-and-down movement, rather than side-to-side as in seiche. They are most commonly associated with oceans, which can generate waves of massive and devastating height upon hitting coastlines. Since Riverside County has no ocean frontage, there is no oceanic tsunami risk within the county. For the inland water bodies within the county, the discussion under 'seiche' addresses all types of waterbody wave hazards, regardless of source or type. In terms of seiche hazards within Riverside County, the region's semi-arid climate makes naturally occurring enclosed water bodies uncommon. Most enclosed water bodies in the county are reservoirs built by local municipalities and water districts to provide water service to local customers. Typically, all land surrounding the reservoirs' shorelines are in public holdings which restrict private land development and thus limit the risk of inundation from seiche. Public land holdings, such as by cities, public water agencies or the state, are not within the jurisdiction of unincorporated Riverside County. Only two waterbodies, Lake Perris and Lake Elsinore, are of any concern relative to potential hazards from seismically induced seiche.

Lake Perris: As noted previously, Lake Perris SRA surrounds the lake and draws thousands of visitors each year. Its active use, plus the very popular Perris Fairgrounds below the reservoir (with roughly a million visitors a year), make it of concern for seiche risks. The lake's fully enclosed shores makes it potentially subject to seiche, but its rounded shape (two miles by three miles) reduces the likelihood of standing wave propagation. The longer axis of the lake lies roughly northeast by southwest. The large dam stretches across the southwest end, with the Perris Fairgrounds (including the Perris Auto Speedway) located roughly a half-mile beyond and open space surrounding it all. Aside from risk of damage to the dam itself, there is no other development or vulnerable structures at the southwest end of the lake. The northeast end of the lake consists of open land (open space) that is part of the Lake Perris SRA but not developed with any specific recreational facilities (campgrounds, swimming areas, docks, etc.), although a sand-covered beach lies further to the north. Alessandro Island also lies at this end of the lake. Beyond this end of the lake lie additional expanses of conserved open space. In general, the large expanses of mostly open space surrounding the shore and lack of development at this end of the lake limit the potential seiche risks to property and human lives.

Lake Elsinore: Because of its partially enclosed basin and long, narrow shape (six miles long by 1.5 miles wide), this lake may have the potential for seismically induced seiche. If a standing wave becomes propagated on the long-axis of the lake (roughly northwest-southeast), it could lead to sudden, higher than expected, waves at these two ends of the lake, both of which have development present. The north end of the lake is within the City of Lake Elsinore and contains mostly open space and vacant lands, with the exception of the Butterfield Village Mobile Home Park at the western edge of the northwest lake end, beyond the levee consists mainly of open space and vacant land, plus the Links at Summerly golf course. These areas are almost entirely within the City of Lake Elsinore also. All of the city areas are outside Riverside County's jurisdiction. The proposed changes for Lakeland Village along Grand Avenue and its vicinity are mainly located on the southwest side of the southern end of the lake. These are not directly within the long-axis path of potential seiche waves, but close enough to that end to be possibly at risk.

D. Mudflow and Debris Flow Hazards

Mudflows~~, (or mudslides),~~ are shallow water-saturated landslides that travel rapidly down slopes in a river of liquid and flowing mud on the surfaces of normally dry land areas. The earth is carried by a current of water and deposited along the path of the current. Debris flows are similar to ~~mudslides~~ *mudflows*, except they contain a high percentage of non-soil material, such as rocks, brush, trees or other debris. A mudflow occurs naturally as a result of heavy rainfall on a slope that contains loose soil or debris. Two forces are at work on slopes: driving forces that combine to cause a slope to move and resisting forces act to stabilize the slope. When the combined driving forces exceed the resisting forces, a ~~mudslide~~ *mudflow* or landslide occurs.

There is a high potential for mudflow to occur in some areas of Riverside County as a result of large amounts of precipitation in a relatively small time frame. Areas with steep slopes or mountains are potentially subject to mudflows in the event of large amounts of precipitation. This risk is often intensified in burned areas where soil-retaining vegetation has been lost. Such areas are particularly susceptible to flashfloods and debris flows during rainstorms. Narrow canyons, arroyos and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or the improper diversion of runoff from a developed area.

Mudflows predominantly occur in mountainous areas underlain by geologic formations that produce sandy soils. Weathered gabbroic soils contain large amounts of clay that shrink and expand with exposure to water and also have a high potential for instability and sliding. Mudflows can be initiated on slopes as low as 15 degrees but more frequently occur on slopes as steep as 45 degrees. The path of a mudflow is determined by local topography and will typically follow existing drainage patterns. The fluidity and depth of the water/soil/debris mixture and the steepness of a channel are all variables that influence the rate of movement of a mudflow. At the foot of a long steep slope, a flow may move at avalanche speed (approximately 40 feet per second, that is, 27 miles per hour) and contain tremendous force capable of destroying buildings and roadways.

Debris flows, particularly when associated with alluvial fans and mountain canyons, can result from the presence of a large percentage (up to 70-90% of flow by weight) of fine sediment, such as silt and clay, in steeply-flowing floodwaters. This enables the muddy flow to transport sand, gravel, boulders and dislodged timber and brush from the surrounding watershed into the floodplain or alluvial fan's surface. Conditions favoring the formation of debris flows are: available unconsolidated silt, clay and larger rock in the basin watershed (due to minimal vegetation), heavy or sustained rainfall in the basin and the presence of a steep basin and/or alluvial fan slopes. In desert areas with finer soils, such flows create alluvial fans (see below). In mountains and other areas with heavy debris, the flow activity can result in the creation of a 'debris fan.' Such debris fans are found in areas where mountain systems are subject to tectonic forces of uplift, including parts of California.

Areas recently burned by wildfires are particularly susceptible to flashfloods and debris flows during rainstorms. Just a short period of moderate rainfall on a burn scar can lead to flashfloods and debris flows. Rainfall that is normally absorbed or intercepted by vegetation can run off almost instantly, causing creeks and drainage areas to flood much sooner during a storm and with more water than normal. Additionally, the soils in a burn scar are highly erodible so flood waters can contain high amounts of mud, boulders and vegetation. The powerful force of rushing water, soil and rock both within the burned area and downstream can destroy culverts, bridges, roadways and structures, placing people and property at risk.

In 2003, post-fire debris flows occurred in San Bernardino County resulting in the tragic loss of 16 people on Christmas Day. As a result, Governor Schwarzenegger signed Assembly Bill 2141 to direct the DWR to seek federal funding for the establishment of a stakeholder-driven Alluvial Fan Task Force to develop a model ordinance and planning tools (e.g., design guidelines for development on alluvial fans) to mitigate flood hazards associated with alluvial fan flooding, a type of flooding that is prevalent after wildfires where areas remain vulnerable for five years after an incident. See the discussion on alluvial fan flood hazards, below, for more information on this hazard.

1. Warning Signs

Slope failure problems are caused by any combination of water saturation and flow, weak or heavy earth materials and steep slopes. Of these, water is the most common trigger of slope failure. There are a number of warning signs and indicators of the potential for a ~~mudslide~~ *mudflow* or landslide that may be identified or visible before an incident occurs.

Steep Slopes: Problems occur on steep slopes, especially when a slope of 1-to-1 (one foot vertical to two feet horizontal) is exceeded.

Debris: Soils and vegetation deposited at the base of a slope may be signs of erosion, flow and creep from above.

Vegetation: Vegetative characteristics reflect slope conditions. Bare slopes may show erosion and sliding. Trees tilting uphill may show deep rotational land sliding. Trees that bend downhill show creep of upper soils. Patches of newer vegetation may show former slope failure. Horsetail ferns, willow shoots or other moisture-loving plants often indicate saturated ground and springs.

Deformed Structures: Deformations, such as foundation cracks, doors and windows out of line or sticking, tilted floors, sagging decks, cracks in masonry and chimneys, cracks in driveways, curbs and roads, gaps between floors and walls, failing retaining walls and tilted power poles, can all be warnings of slope instability.

Loose Fill: Loose fill at the top of a slope due to yard waste, cut-and-fill land grading or other processes can aggravate slope instability.

Undercut Toe of Slope: When supporting material has been removed from the toe of a slope, the potential for sliding and erosion is increased.

Suspect Landforms: Landforms, such as steep slopes, are common at the top (head) of landslides. Rounded, conical mounds or lumpy ground often indicates a deposit of slide or debris material.

The National Flood Insurance Program will pay for covered damages that occur during or as a result of a qualifying mudflow event. However, the NFIP does not cover losses that result from land shrinkage, landslide, destabilization or movement of land resulting from the accumulation of water in subsurface land areas, gradual erosion or any other earth movement, except ~~mudslides~~ *mudflows*.

2. Avoiding ~~Mudslides~~ Mudflows

To prevent mudflows on a property, the discharge of concentrated water must be directed to a safe, non-erodible site, such as a storm drain, street gutter or rock stream bed. On an emergency (temporary) basis, sandbags can be used to divert water from uncontrolled spilling, such as over curbs, from gutters and downspouts, or from washing into buildings.

For major problems, more permanent solutions are necessary. The best and easiest cure is to avoid hazardous sites. Urban population pressures increase the uses of marginal building sites requiring greater investment in soil and slope stabilization measures. Steep, weak hill slopes require increased measures under the Building Code and building ordinance during site planning, building design and construction, to reduce risk to future homeowners and occupants. Professional site investigations by an engineering geologist are typically required as part of the siting and design process. A site investigation, analysis and design by a licensed professional can provide solutions to most problems. Incorporating the recommendations from the site study has been shown to reduce landslide risks and damages according to FEMA. In general, the geological survey will define and analyzed site conditions, including factors such as:

- Soil and rock types present and their characteristics (strength, stability, etc.).
- Distribution of soil types.

- Subsurface configuration (geological structure and slip plane configuration).
- Ground and surface water conditions.
- Active processes and rates of recurrence.
- Analysis of suitability of the site for the intended use.
- Specific recommendations for development.
- Further investigations required, if any.

For sites with existing issues, or where new issues arise, for example due to new development adjacent to the site or due to a wildfire, remediation efforts may be needed, as recommended by a geotechnical professional (licensed engineer, engineering geologist, etc.). Several key types of remediation are as follows:

- Drainage improvements: Providing surface protection and vegetation; installing surface drainage ditches and storm drains, curtain or French drains, perforated plastic pipe; or subsurface drains, such as wells or horizontal drains.
- Retaining structures: Applying soil stabilization materials; installing buttress fills, retaining walls with drainage, piling or riprap (rock cladding).
- Reengineering slopes: Via grading; slope contouring or terracing; removal and compaction or replacement of material; or reduction of the slope.

E. Alluvial Fan Flooding Hazards

As mentioned earlier, an alluvial fan is a gently sloping, fan-shaped landform created over time by deposition of water-eroded sediment built up by streams. These flows come from a single point source (most often a canyon or other narrow opening between hills) at the apex of the fan and can over time move to occupy many positions on the fan surface as the flows drain out onto a flatter plain. As a stream's gradient decreases, it drops coarse-grained material (the source of the "alluvial" in the name). This reduces the capacity of the channel and forces it to change direction and gradually build up a slightly mounded or shallow conical fan shape (the "fan" in alluvial fan). The deposits are usually poorly sorted due to recurrent flood action moving existing strata.

1. Alluvial Fan Floodplains

In California, alluvial fan floodplains occur most prevalently in Southern California (from San Luis Obispo and Kern counties southward). On its Alluvial Fan Task Force website, DWR estimates that as growth fuels additional development in Southern California, up to 60% of the next century's new development will occur in or on communities with alluvial fans. Given that alluvial fans tend to occur in the apparently dry conditions of arid and semiarid regions (including throughout Riverside County), homeowners are often shocked to find that they can be the sites of destructive floods. Alluvial fans are often found in desert areas subject to periodic flash floods from nearby thunderstorms in local hills, for example, many of the hills and mountains in eastern Riverside County.

The typical watercourse in an arid climate has a large, funnel-shaped basin at the top, leading to a narrow defile (pass or gorge between mountains or hills), which opens out into an alluvial fan at the bottom. Multiple braided streams are usually present and active during water flows. Although, in locations where water flows or the upstream basin have been modified through human disturbance, for example orchards or groves, the resultant flows may be more stable, resulting in the creation of a single heavily incised channel or set of braided channels. In flooding events on alluvial fans, FEMA (in FEMA Report No. 165, "Alluvial Fans: Hazards and Management," February 1989; page 4) identifies the following hazards that may be encountered:

- High-velocity flow (as high as 15-30 feet per second) producing significant hydrodynamic forces (pressure against buildings caused by the movement of flowing water).
- Erosion and scour (to depths of several feet).
- Deposition of sediment and debris (depths of 15-20 feet have been observed).
- Debris flows and impact forces.
- Mudflows.
- Inundation, producing hydrostatic/buoyant forces (pressure against buildings caused by standing water).
- Flash flooding (little, if any, warning times).

2. Historical Alluvial Fan Floods

In the book *Alluvial Fan Flooding* (Commission on Geosciences, Environment and Resources, 1996) an account by C.B. Beaty summarizes a "rare eyewitness account" of a mud and debris flow that occurred in Cottonwood Canyon in Bishop, California, in July 1952. Beatty reports that "Two hours after a heavy thunderstorm in the White Mountains to the east, a large flow of debris advanced down the alluvial fan. At and below the apex, the flow was in a pre-existent, defined channel leading from the 3.7-square mile basin. Debris spilled over channel walls and spread laterally to widths of 100 to 400 feet. One large distributary channel of debris was formed by concentrated overflow on the outside of a gradual bend. The debris deposit was about 4.3 miles long with a deposit of mud over half a mile (0.6 miles) long followed by 8 to 10 inches of silt deposits for at least a half mile near the fan toe above [the canyon]. Much of the deposited debris was remobilized by subsequent water flow during the event." (Note, all measurements translated from metric to English for consistency.)

Closer to Riverside, a number of accounts document historic alluvial fan flooding in the Cucamonga region. These include floods in Cucamonga Creek and across the large alluvial fans at the base of the San Gabriel Mountains in February 1927, the winter of 1938 and January 1969. Day Creek and Deer Creek in the Etiwanda region also flooded onto alluvial fans at levels found to be greater than the 100-year-flood level in January 1969. The capacity of a levee and several channels were exceeded by these storm flows and the structures were breeched during the event. Flooding was only minimized by the construction of flood control structures, including detention dams and percolation basins, which were fully in place by 1989, according to accounts. Lytle Creek and surrounding streams in San Bernardino also flooded and affected alluvial fans in 1927 and 1969, resulting in bank erosion that led to the failure of a bridge. In total, throughout Southern California the floods of 1969 resulted in the loss of 73 lives and over 30 million dollars in damage.

A major flood occurred in Riverside County in July of 1979 at Magnesia Spring Canyon in the Rancho Mirage area, breached a levee at the alluvial fan apex and flooded urban development in the city. This event was triggered by a massive summer thunderstorm that dumped extreme amounts of precipitation over concentrated areas in very short time frames. According to reports, the peak discharge from the roughly four-square mile mountainous drainage basin was 170 cubic meters per second, which equals just under 45 *thousand* gallons a second, nearly *three times* the magnitude of the 100-year flood. One death and 7 million dollars in damage resulted.

Lastly, alluvial fan flooding caused by heavy rains (3-4 inches in 12 hours) contributed to mudflows that took the lives of 16 people (14 at a church camp in Waterman Canyon near Crestline and two additional people in a separate incident in Devore) in San Bernardino County on Christmas Day in 2003. These mudflows resulted after two severe wildfires earlier in the year (in particular, the Old Fire) that dramatically increased the risk of debris flows from alluvial fans in the burned hillsides. The force of the mudflow was so great that, according to a report in the Press-Enterprise (October 12, 2010), one deceased victim was found 15 miles away four months after the flood. The powerful Waterman Canyon mudslide also knocked camp buildings completely off their foundations.

As a result of that tragedy, the State of California instituted the Alluvial Fan Task Force which developed a model ordinance and recommendations for an integrated development approach that provides a suite of methods for local communities to use at their discretion to assist in reducing flooding risks on alluvial fans.

3. Alluvial Fan Habitat Associations

In Riverside County, particularly the western third, alluvial fan sage scrub habitat (alluvial scrub) frequently occurs in and around alluvial fans. The key trait of such vegetation is the development of "phreatophytes," plants with long tap roots (up to 30 to 50 feet deep) that have evolved to be able to access water that has seeped through the fan and hit an impermeable layer. These stands of shrubs cling to the fan soil at their bases and often form islands of habitat for many animals as erosion moves the surrounding soil away. Also, such shrubs may be flood-adapted to survive flooding, erosion and the scouring (striping away) of their surface or crown vegetation. The anchor provided by the long, intact tap root and the energy stored in the rootstock below ground permits plant regrowth from the base. California scalebroom (*Lepidospartum squamatum)* is species of shrub very well-adapted to the extreme hydrology of alluvial fans. It has rootstock (underground stems) supported by a vigorous taproot adapted to regrow after heavy scouring and also to survive being buried under sediment as the result of flooding. So strong is this regrowth, in fact, that home foundations in Corona were damaged (uplifted and cracked) by recovering scalebroom bushes where the taproots were not completely removed during grading. The plant has even been reported to regrow through the asphalt surface of new roads.

4. Flood Risk Management on Alluvial Fans

Even though typically shallow, flooding in alluvial fans can be even more dangerous than in the upstream canyons that feed them. Floods within alluvial fans can strike with little warning, travel at extremely high speeds and carry tremendous amounts of sediment and debris. Further, the slightly convex perpendicular surfaces of the fans cause water to spread widely until there is no zone of refuge. If the gradient is steep, active transport of materials down the fan creates a moving substrate (i.e., akin to a flash flood) that is dangerous to travelers on foot or in a vehicle. As the gradient diminishes downslope, water comes down from above faster than it can flow away downstream leading to ponding to potentially hazardous depths. These factors can also make it difficult to engineer controls to contain peak flows inside man-made embankments. Often large debris basins and water retention structures are needed upstream to prevent serious flooding hazards on major alluvial fans.

As with other types of serious flooding, FEMA also designates areas as subject to alluvial fan flooding (as opposed to ordinary riverine flooding). Specifically, NFIP regulations define alluvial fan flooding to be "flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport and deposition; and, unpredictable flow paths." Despite the distinction, alluvial fan flooding is also based on the 100-year flood interval (i.e., a 1% probability of occurrence in a given year).

Key elements to the hazards associated with alluvial fan flooding are the uncertainty of the flow path down the fan, the slope and topography; and, the abrupt deposition and extensive erosion of sediment in the fan. Combined, these traits make the use of fill to raise a building site out of the floodplain unsuitable for alluvial fans. Rather, alluvial fan flood hazards can only be reliably offset by use of major structural flood control measures (e.g., the aforementioned large upstream debris and detention basins) or by complete avoidance of the affected area.

Should development occur on or near an alluvial fan, extra care must be taken to avoid applying flood control engineering measures that inadvertently create new flood hazards at other sites. For example, because of the variability and unpredictability of the stream path within the fan, any channelization or conveyance designs would have to take into account the entire span of the potential watercourse and all of the 100-year flows for adequate capture. The key to avoiding, reducing or minimizing alluvial fan flooding risks is site-specific evaluation (hydrological study) of conditions and the implementation of site-specific soils, slope and hydrology design and engineering recommendations to ensure flows are handled properly.

In terms of engineering flooding protections, two basic approaches are useful for alluvial fans. The first is to provide whole-fan protection via large-scale structural measures. These include the following (used either individually or in combination): levees, channels, detention basins and debris basins/ fences/deflectors/dams. Such structures generally intercept upstream watershed flow and debris and transport water and sediment around the entire (usually urbanized) fan. Structures must be designed to withstand scour, erosion, sediment deposition, hydrostatic forces, impact and hydrodynamic forces and high flow velocities.

At a more localized level, for example for individual subdivisions or tracts, smaller-scale measures may be used to safely trap debris and route water and sediment around or through individual residential developments. Such measures include: drop structures to reduce flow velocity; debris fences; local dikes or channels; site plans to convey flow; street design and/or alignment to convey flow; elevation on armored fill. In these cases, a combination of elements are often the most effective strategy for ensuring flood protection. If necessary, protective measures can also be introduced for single lots or structures. The most cost-effective of these include: elevation on properly designed foundations (piles, columns or armored fill); floodwalls and berms; and reinforcement of uphill walls, windows and doors against debris impact (or avoid these features on uphill walls entirely, if possible).

F. Flood Hazard Reduction Efforts

1. Surface Runoff Hazards

The conversion of undeveloped, natural areas to urbanized uses throughout Riverside's watersheds have increased flooding potential by increasing the rate and amount of runoff in watersheds and altering drainage patterns. Construction of impervious surfaces such as rooftops, roads and driveways reduces the amount of rainfall that can infiltrate the ground surface and percolate into the subsurface. As a result, the volume of surface water runoff increases within a watershed. Subsequently, artificial conveyances such as gutters, storm pipes and natural channel improvements to accommodate additional volume also accelerate the rate of flow in the watershed. This faster-

moving, higher-volume surface water runoff results in a higher probability and increased severity of flooding within a watershed, if facilities are not adequately maintained or constructed to carry peak flow capacity.

Any alteration to natural drainage patterns by modifying landforms controlling the conveyance of surface water can increase the potential for flooding. Grading or other modifications, including directly altering the course of a stream or river by excavation or embankment, can increase velocities of floodwaters, which increases the potential for flooding downstream of the modification. A reduction in the capacity of the watercourse can also increase the potential for flooding at the site of the modification as well as upstream from the activity, if flood waters backup as a result.

Drainage facilities, including storm drains, culverts, inlets, channels or other such structures, are designed to prevent flooding by collecting stormwater runoff and directing flows away from urban development to either a natural drainage course or man-made one as part of a storm drain system. The capacity of a drainage structure can typically be adequately determined by a hydrology and drainage study. However, if drainage facilities are not adequately designed, built and maintained, the facilities can overflow or fail, resulting in flooding.

2. Master Drainage Plans in Riverside County

In urban and built-up areas, precipitation, irrigation and their runoff from impermeable surfaces must be managed and controlled to avoid flooding-related problems, such as erosion, water damage and water contamination, both at the location the runoff is generated, as well as offsite / downstream. As discussed extensively in Section 4.19, the federal Clean Water Act and one of its implementing programs, the National Pollution Discharge Elimination System (NPDES) protect water quality by regulating sources of runoff that could pollute waterbodies. Among other things, under NPDES cities and counties are required to comply with the conditions of both general and municipal separate storm sewer (MS4) permits. Within western Riverside County, FCWCD oversees implementation and compliance of both general and MS4 permits. Within the Coachella Valley, this function is maintained by the Coachella Valley Water District (CVWD). In addition, these agencies also oversee Riverside County's municipal storm drain systems for conveying stormwater flows. This is done via two main planning instruments: the master drainage plan (MDP) and the area drainage plan.

According to Riverside County Flood, a master drainage plan addresses the current and future drainage needs of a given community. The boundary of the plan usually follows regional watershed limits. The facilities proposed or covered by a MDP may include channels, storm drains, levees, basins, dams, wetlands or any other conveyance capable of economically relieving flooding problems within the plan area. The plans also include estimates of facility capacities, sizes and costs. MDPs are prepared for a variety of purposes. First, the plans provide a guide for the orderly development of Riverside County. Second, they provide an estimate of costs to resolve flooding issues within a community and are used by Riverside County to determine capital project expenditures for each budget year. In addition, the MDPs can be used to establish Area Drainage Plan fees for a given community, which prevent existing taxpayers from having to shoulder the burden of land development costs. As discussed further in Section 4.19 (and, in particular, as shown in Figure 4.19.9 and listed in Table 4.19-E), there are presently 48 Master Drainage Plans within Riverside County, encompassing areas from the western edge of the county all the way out through the Coachella Valley region to the east and encompassing both incorporated city and unincorporated county territories.

3. Capital Improvement Projects Related to Flooding

As noted above, the FCWCD designs, constructs, manages and maintains an extensive network of flood control and storm drain infrastructure in western Riverside County. The list below outlines some of the capital

improvement projects the County of Riverside (or other agency) has recently completed or proposes to construct in the next 1-2 years to provide flood water management as per the Riverside County Capital Improvement Plan (CIP).

a. Under Construction (As of January 2013)

Murrieta Creek: The Murrieta Flood Control, Environmental Restoration and Recreation Project is a flood control master plan to provide 100-year flood protection to the cities of Murrieta and Temecula by deepening and channelizing Murrieta Creek and its major tributaries using several concrete-lined open channels and a small network of underground storm drains. The proposed system will carry storm runoff through the rapidly developing Murrieta Valley to the valley's south end, where Murrieta Creek and Temecula Creek converge to form the Santa Margarita River. The project includes a 250-acre detention basin as well as a recreational park and 160 acres of wetlands and wildlife habitat. The Army Corps is in charge of construction and Phase 1 of the four-phase project was completed in 2005. Work on Phase 2 was slated to begin April 2013. Completion of the remaining phases will depend on financial constraints.

Calimesa – Avenue L Storm Drain: This project occurs in the City of Calimesa, just south of the boundary between Riverside and San Bernardino counties. It runs from the upstream end of stage 1 at 4th Street almost 1.5 miles easterly to Douglas Street and includes laterals at cross streets.

Day Creek Channel: Construction of Phase 1 (from Limonite Avenue to 700 feet downstream) is complete. Phase 2 runs from Lucretia Street to 700 feet south of Limonite Avenue. The existing interim channel is to be upgraded with approximately 2,700 linear feet of rectangular concrete-lined channel. It will connect to 1,100 linear feet of riprap outlet channel within Goose Creek Golf Club.

Day Creek Master Drainage Plan - Line J: This project is a developer-driven project to complete the last link in Master Drainage Plan line. It consists of 2,000 linear feet of storm drain discharging at the Caltrans culvert where the 68th Street overpass crosses Interstate 15.

Eagle Canyon Dam: Located southwesterly of Canyon Plaza Drive and East Palm Canyon Drive. The project is dependent on the cleanup of an existing dump at the site by others, including the cities of Palm Springs and Cathedral City. Riverside County Flood CIP costs are based on the premise that the $1,500,000 needed for the cleanup effort will be incorporated into dam construction contract, although the funding will come from the cities. The project will provide flood detention and flood hazard mitigation for the developed portion of Cathedral City located downstream via construction, operation and maintenance of an earthen dam, debris catchment and underground storm drain.

Mira Loma – Beach Street Storm Drain: Working upstream from the proposed outlet just south of 58th Street, this storm drain proceeds northerly through private property and then along Beach Street to just north of 55th Street where it again splits property lines to 54th Street. It branches off twice, once at 55th Street and once between 55th and 54th Streets. Lines then run east to sump in Cedar Street and west to sump in Rutile Street.

b. To Begin Construction In or Around 2013

Arroyo Del Toro Channel: A 40-foot wide earthen channel is proposed from the Elsinore Outlet Channel downstream of State Highway 74, northwesterly approximately 3,800 feet to I-15. It runs around two sides of the Elsinore Valley Cemetery.

Corona Master Drainage Plan – Line 52: This proposes an underground storm drain beginning near Third Street and Grand Blvd., extending north along East Grand Blvd. then under the 91 freeway to discharge into the Temescal Creek Channel. The City of Corona is to design and build the project with Riverside County Flood funds.

Gilman Home Channel Lateral A: For this project, approximately 1,000 linear feet of reinforced concrete pipe will be run from Eighth Street westerly in Cottonwood Road to the existing channel at George Street between 10th and 12th Streets in the City of Banning.

Hemet Master Drainage Plan – Lines C and D: Line C provides an underground storm drain in Whittier Boulevard extending nearly 7,000 linear feet from the existing storm drain at Palm Avenue east to Santa Fe Street. Line D provides an underground storm drain in Stetson Avenue running 1,400 linear feet from Meridian Street to Hemet Street.

Monroe Master Drainage Plan – Monroe Channel: At request of the City of Riverside, its existing open channel will be replaced with an underground reinforced concrete box with the capacity to carry ten-year storm flows. The project will run under Monroe Street from California Avenue upstream to Magnolia Avenue.

Norco Master Drainage Plan – Lateral N1-D and Spirit Knoll Court Storm Drain: Project will construct two North Norco Channel lateral storm drains, one in Spirit Knoll Court and one in Rose Court. These facilities will outlet to existing interim channel and will drain sumps along Temescal Avenue.

Palm Canyon Wash – Cherley Creek Levee Restoration: Major construction under this project will bring the existing levee serving small tributary upstream of South Palm Canyon Wash into compliance with FEMA certification guidelines. The existing channel will be upsized and the north bank levee will be restored. The project will use a combination of rock slope protection (i.e., rip-rap) and soil-cement lined channel for the levee.

Palm Springs Master Drainage Plan – Lines 43 and 43A: This project will connect the Eagle Canyon Dam outlet (described above) to West Cathedral Canyon Channel. The storm drain will begin south of East Palm Canyon Drive and run southwesterly to discharge into the North Cathedral Canyon Channel. The 42-inch drainage pipeline will run roughly 3,300 linear feet in total.

Pyrite Channel Bypass: This will be a cooperative project with the Riverside County Economic Development Agency (EDA). A storm drain will run in Pyrite Street from Jurupa Road north to discharge into to the existing Jurupa Channel. The project will not convey the entire 100-year storm flows, but will provide substantial relief to properties between Pyrite Street and Jurupa Avenue.

Romoland Master Drainage Plan – Line A: This project is to construct an open (interim) channel for 4,000 linear feet from west of Interstate 215, north parallel to Barnett Road and west along Ethanac Road to discharge at an interim outlet near San Jacinto River.

San Jacinto Master Drainage Plan – Lines C, B and C-5: This project proposes 8,150 linear feet of storm drains. Line C will run from Esplanade Avenue south and to east along Midway Street to San Jacinto Street, with short Lines C-4 and C-5 branching off along the way. At San Jacinto Avenue, it joins Line B, which runs south to Menlo Avenue.

Southwest Riverside Master Drainage Plan – Lines G, G-1 and F-1: A total of 4,200 linear feet of storm drain in Meyers Street and laterals in Victoria Avenue will be constructed under this project. Line G runs southeasterly along Meyers Street to a T-split at Victoria Avenue. Along Victoria Avenue, Lateral G-1 runs

northeasterly towards Van Buren Boulevard and Lateral F-1 runs southwesterly to Harrison Street. The City of Riverside is to design and build the project.

Sunnymead Master Drainage Plan – Line P-6: Consists of the construction of 600 feet of storm drain in Eucalyptus Avenue from Perris Boulevard to Shirebourn Road in Moreno Valley.

Sycamore Dam – Outlet Structure Modifications: Located in the City of Riverside, east of the intersection of Central and Chicago Avenues, this project will install an access road, replace the inlet tower and reconstruct and armor the outlet structure of Sycamore Dam to prevent blockage by debris accumulation. The effort is a pilot project to develop a solution for the six other reservoirs in Riverside.

Temescal Creek – Foster Road Storm Drain: An underground storm drain in Foster Road will be constructed from I-15 to Temescal Creek. Project also includes environmental enhancement adjacent to Temescal Creek.

West End Moreno Master Drainage Plan – Line LL: This project involves construction of approximately 2,000 linear feet of underground storm drain within the road right-of-way along Dracaea Avenue approximately 500 feet west of Edgemont Street, then southerly 750 feet and southwesterly 1,200 feet along Old I-215 Frontage Road.

c. To Begin Construction In or Around 2014

Banning Master Drainage Plan – Line H: Located south of Banning Municipal Airport, this project proposes to construct approximately 3,400 feet of reinforced concrete pipe from an outlet at Smith Creek Channel running west towards Wesley Street. The storm drain will then run north along Hathaway Street to Barbour Street, for a total of 3,925 linear feet.

Desert Hot Springs Master Drainage Plan – Line E-5: Line E-5 involves the construction of approximately 3,700 linear feet of a reinforced concrete pipe storm drain in Eighth Street from the existing Line E, easterly to Mesquite Avenue.

Little Lake Master Drainage Plan – Line B: Line B provides an underground storm drain under Meridian Street that runs approximately 4,055 linear feet from just south of Florida Avenue to Whittier Avenue in Hemet. Another 4,600 linear feet of Line B will run from north of Berkley Avenue to Florida Avenue, also under Whittier Avenue.

Valle Vista Channel Extension: This project is to construct a 700-foot extension to Valle Vista channel along Acacia Avenue. The rectangular channel and inlet works will connect into the existing channel at the intersection of Acacia and Georgia Avenues.

Woodcrest Dam – Outlet Structure Modifications: As with the Sycamore Dam project, this project proposes to reconstruct the Woodcrest Dam outlet structure to prevent blockage by debris accumulation. It is also a pilot project to develop a solution for Riverside's six other reservoirs.

4.11.3 Policies and Regulations Addressing Flood and Dam Inundation

Many urban areas in California are located in historic floodplains. To reduce the risk of loss of life and property, local, state and federal agencies implement a number of programs and regulations. These include the following.

A. State and Federal Regulations

There are several federal agencies tasked with protecting people and property from flood hazards. Chief among these is the Army Corps, which both constructs and operates federal flood risk management projects and also issues permits for disturbances to "waters of the United States" and associated wetlands pursuant to the federal Clean Water Act. This aspect of the Army Corps' duties is further described in Section 4.8 (Biology) of this EIR. Another key flood management program, the National Flood Insurance Program is administered by FEMA. FEMA is also responsible for disaster planning and recovery programs at the national level.

National Flood Insurance Program: In 1968, Congress created the NFIP in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. Administered by FEMA, the NFIP makes federally backed flood insurance available in communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. As a voluntary, incentive-based federal program, the NFIP requires that new or replacement buildings in flood hazard areas be constructed to limit future flood damage. For participating areas, a series of flood insurance rate maps have been issued to delineate areas of special flood hazards. The program also requires that local governments regulate development in designated floodplains through the adoption of floodplain management ordinances that meet minimum NFIP requirements. The County of Riverside enacted a floodplain management ordinance and policies; see description below.

National Flood Insurance is available in the County of Riverside. In order to participate in the program, FEMA requires that Riverside County and its incorporated cities maintain the carrying capacity of all flood control facilities and floodways. Communities that fail to meet their maintenance responsibilities are subject to expulsion from the NFIP, loss of other federal aid or even exposure to suits by FEMA for recovery of flood insurance and disaster payments.

In 1994, the NFIP was revised under the National Flood Insurance Program Reform Act. Changes addressed how flood insurance is offered and funded for structures within designated floodplains, increased flood insurance limits and eliminated the 1962 buy-out program. It also clarified flood insurance purchase requirements as a condition of receiving federal disaster assistance. If the flood insurance policy were not maintained, in the event of another disaster no disaster assistance would be made available for that structure.

Owners of all structures within a projected 100-year flood inundation area (also called a "Special Flood Hazards Area,") are required to purchase and maintain flood insurance as a condition of receiving a federally-related mortgage or home equity loan on that structure. Such insurance mitigates flood-related impacts by rectifying any damage that occurs.

FEMA Floodplain NFIP Mapping Program: As part of its role in protecting communities from flood hazards, FEMA issued Flood Hazard Boundary Maps for more than 19,000 flood-prone communities nationwide. These maps provide approximate delineations of areas subject to inundation by 100-year floods, aka Special Flood Hazard Areas. Data based on past floods, regional flood depth/drainage area relationships, floodplain maps published by other federal agencies and simplified hydrologic and hydraulic calculations all go

into the development of these maps and their approximate floodplain boundaries. Subsequently, these maps are further refined through a Flood Insurance Study which more closely examines a variety of data and engineering analyses for the floodplain. The results are used to create a FIRM depicting 100- and 500-year floodplain boundaries, flood insurance risk zones, base flood depths and other data. Alternatively, a FIRM may be developed without the first step of a Flood Hazard Boundary Map being prepared. In such cases, the information provided is less detailed, but still sufficient for community flood hazard planning.

When a revision to a NFIP map is warranted, FEMA will revise and republish the affected map panels (e.g., a Physical Map Revision), to show the appropriate changes. Or they will issue a letter referred to as a Letter of Map Revision (LOMR) that describes the changes and officially revises the effective FIRM map.

Another action by FEMA is the making of "conditional determinations," based upon their review of how designated floodplains would be affected by proposed projects. Project activities such as floodplain modification or simply the placement of fill to elevate one or more structures or parcels of land might be proposed. When such conditional determinations are warranted, they are issued in letters referred to as Conditional Letters of Map Revision (CLOMRS) or Conditional Letters of Map Revision Based on Fill (CLOMR-Fs) that describe the effect the proposed project or fill would have on the effective NFIP map. A conditional determination does not actually revise an effective NFIP map.

The County of Riverside participates in the NFIP and uses FIRMs as the basis for county flood risk management planning. These maps were used to provide the general boundaries of the 100-year flood inundation areas, as further developed by FCWCD, and shown in Figure 4.11.1.

Executive Order 11988 Floodplain Management: This federal Executive Order, originally issued in 1977 by President Jimmy Carter, requires federal agencies to provide leadership in the long- and short-term potential adverse impacts associated with the modification and potential occupancy of floodplains and to take action to avoid floodplain development when other practical alternatives exist through the following:

- Avoid development in existing 100-year floodplains, unless such development is the only practicable alternative.
- Reduce hazards and risk associated with floods.
- Minimize the impact of floods on human health, safety and welfare.
- Restore and preserve the natural and beneficial values of existing floodplains.

To comply with Executive Order 11988, it is the Army Corps' policy to formulate projects that, to the extent possible, avoid or minimize adverse effects associated with use of the floodplain and avoid inducing development in an existing floodplain unless there is no practicable alternative.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): Under the federal Clean Water Act (CWA) (Title 33, U.S. Code [USC], Section 1251 *et seq.)*, three separate permits, as outlined below, are required to operate and maintain flood control systems. See Section 4.19 for more detailed discussion of these water quality-related issues:

- A NPDES Municipal Stormwater Permit is required to discharge stormwater to "waters of the United States." (See below for more.)

- A Dredge and Fill Permit must be obtained from the Army Corps pursuant to CWA Section 404 for any project that discharges fill to "waters of the United States." As the agency tasked with primary implementation of the CWA, the U.S. Environmental Protection Agency (EPA) retains veto power over any permit issued by the Army Corps.

- A water quality certification or waiver must be obtained pursuant to CWA Section 401 before any given Section 404 permit becomes valid. This process has been delegated by the U.S. EPA to the State Water Resources Control Board.

Cobey-Alquist Floodplain Management Act: This law (Public Resources Code [PRC] Section 8400 *et seq.*) states that the State of California will not appropriate money to support projects within federally designated floodway boundaries unless affected local governments (such as the County of Riverside) have enacted floodplain regulations meeting certain minimum requirements. Thus, the primary responsibility for planning, adoption and enforcement of land use regulations to accomplish floodplain management rests at the local government level. It is the State of California's policy to provide state assistance and guidance and to encourage local levels of governments to employ land use regulations to accomplish floodplain management and to provide state assistance and guidance. Riverside County has used the guidelines established by this legislation to produce ordinances, such as the Flood Hazard Regulation Ordinance, No. 458, that promote public health, safety and general welfare, and minimize public and private losses due to flood conditions in Riverside County.

Assembly Bill 162 (2007): AB 162 established new requirements for general plans to consider flood management. The land use element of the general plan is required to identify and annually review areas subject to flooding, as identified on FEMA or DWR floodplain maps. The conservation element is required to identify land and water resources that can accommodate floodwater for purposes of "groundwater recharge and stormwater management." And, the safety element must identify flood hazard zones and provide policies to protect against unreasonable flooding risks. The Riverside County General Plan does provide the requested information. See Section 4.11.3.E, below, for policies that fulfill these requirements.

California Water Code: CWC Section 8100 *et seq.* states that county boards of supervisors may appropriate and expend money from the county's general fund for any of the following purposes in connection with streams or rivers in the county:

- The construction of works, improvements, levees or check dams to prevent overflow and flooding.

- The protection and reforestation of watersheds.

- The conservation of the floodwaters.

- The making of all surveys, maps and plans necessary to carry out any work, construction or improvement authorized.

- The carrying out of any work, construction or improvement authorized outside the county if the rivers or streams affect flow in or through more than one county.

National Pollution Discharge Elimination System Permit Program: In California, the State Water Resource Control Board (SWRCB) and its Regional Water Quality Control Boards (RWQCBs) administer the NPDES permit program. The NPDES permit system was established under the CWA to regulate both point and nonpoint source discharges to surface waters of the U.S. The NPDES program encompasses characterizing receiving water quality, identifying harmful constituents, targeting potential sources of pollutants and implementing comprehen-

sive water management programs. Construction and industrial activities are typically regulated under statewide general permits that are issued by the SWRCB. The RWQCB also issues Waste Discharge Requirements that serve as NPDES permits for impacts to waters of the State under the authority delegated to the RWQCBs.

Water quality is overseen by a separate set of State agencies, chiefly, the SWRCB. The SWRCB has divided the state's 10 major watersheds into a number of regions, based on major local watersheds. In western Riverside County, which is within the state's South Coast Hydrological Region, two RWQCBs have jurisdiction: Region 8 (Santa Ana) and Region 9 (San Diego). The eastern two-thirds of Riverside County are in the state's Colorado River Hydrological Region which is under the jurisdiction of RWQCB Region 7 (Colorado River Basin). As detailed in Section 4.19, the County of Riverside is a permittee for three MS4 permits covering extensive portions of the Santa Ana River, Santa Margarita River and Whitewater River watersheds. See Section 4.19 for additional details on these permits and on the hydrology of Riverside County.

B. Local Authorities

In California, state law makes local governmental agencies responsible for flood risk management. CWC Section 8401 states: "The primary responsibility for planning, adoption and enforcement of land use regulations to accomplish floodplain management rests with local levels of government," the land use element of the plan must identify areas that are subject to flooding.

The FCWCD is the primary agency in Riverside County that is responsible for flood risk management, including most of the western county. In eastern Riverside County, this function is performed by the Coachella Valley Water District. During Riverside County Flood's 70-year history, it has developed an extensive flood control system in western Riverside County that includes 61 dams, debris basins and detention basins, 32 miles of levees, 253 miles of open channel and 397 miles of underground storm drains. Proper operation and maintenance of the system is critical to protect the lives and properties of the residents of Riverside County and is essential to ensuring economic activity and transportation corridors are not disrupted during flooding.

Table 4.11-C, below, summarizes agencies with local flood risk management responsibilities in Riverside County. Local governments are authorized to appropriately zone river basin lands within their jurisdictions. However, state and federal agencies (DWR, Army Corps and FEMA) often provide assistance to local planning agencies by determining the probability of flooding and the potential flood damage.

C. Riverside County Regulations

The County of Riverside has adopted a number of ordinances that provide flood risk management, both directly and indirectly, as follows:

Ordinance No. 348 - Land Use: This is the master zoning ordinance for Riverside County. As such, it dictates the types of land uses and development suitable for various conditions. It includes a "W-1 Zone," for water-courses, watersheds and conservation areas. Land zoned W-1 is generally associated with "present conditions not suited for permanent occupancy or residency by persons" because they are subject to periodic flooding and other hazards. Among other reasons, this zone can be applied to lands in which there is no approved drainage and stormwater control plans or for which significant flooding hazards exist. As an example, in 2007 interim W-1 zoning was applied to portions of the communities of Lakeview and Nuevo until appropriate master drainage plans could be approved. Use of this ordinance and the W-1 zone mitigate potential flood impacts by preventing development in areas where which people, property or structures would be at risk for harm due to flooding.

Table 4.11-C: Local Flood Risk Management Agencies in Riverside County

Agency and Contact Information	Territory/Area Covered
Riverside County Flood Control and Water Conservation District	Western Riverside County
Coachella Valley Water District	Majority of Coachella Valley Palo Verde Valley (northeastern-most Riverside County) and a portion of Imperial County
Imperial Irrigation District [1]	Imperial Valley, including portions of south eastern-most Riverside County plus Imperial County
County Service Areas 103 and 121 [2]	CSA 103 serves Wildomar in southwest Riverside County CSA 121 serves Thousand Palms in Coachella Valley
Desert Water Agency	Portions of Riverside County east of Coachella Valley, and excluding the Whitewater River system
San Gorgonio Pass Water Agency [3]	Portions of northern Riverside County, generally between Moreno Valley to the southwest and Beaumont to the east

Footnotes:
1. This district manages agricultural / local drainage facilities rather than regional flood control structures.
2. The two County Service Areas maintain local retention basins.
3. While the agency has authority to acquire and control stormwater, its actions in this regard have been limited to using "runoff" water from local rivers and streams to replenish the groundwater on lands within the agency's jurisdiction.

Source: California Department of Finance, Inventory of Flood Control Agencies, 1997.

Ordinance No. 457 - Building Codes and Fees: This ordinance specifies the various state and/or professional society building and construction standards by which all development approved within unincorporated Riverside County must comply. It includes specifications for use of the California Building Code, the Uniform Housing Code, the California Plumbing Code, the California Mechanical Code and the California Electrical Code, among others. Use of these codes ensures that any development or construction within the county meets the necessary standards for suitability, durability, safety and so on; ensuring that occupants of such structures and facilities are not placed at undue risk. In terms of flood risk management and safety, the codes include requirements for the structural integrity of buildings and other facilities for withstanding precipitation, inundation and water flow. They also specify standards for grading, lot, roadway and drainage design to ensure that water flows (particularly runoff) are directed or channeled appropriate ways. The ordinance also imposes minimum standards for permanent erosion control and associated landscaping. It includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they continue to provide adequate stormwater flow / runoff protections, erosion protection and sediment controls, both during and after construction activities on a site. As a result, it ensures adequate measures are in place to prevent significant adverse impacts due to construction and urban runoff, stormwater flows and water erosion on lands subject to development.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance was adopted pursuant to the requirements of the National Flood Insurance Program (Title 42, USC, Section 4001 *et. seq.,* as amended). Its purpose is to protect the public's health, safety and welfare from flooding hazards. It does so by regulating development within flood hazard areas and establishing a variety of land use and construction standards for such development.

The ordinance includes construction standards that apply to all new structures and substantial improvements to existing structures within Riverside County's mapped Special Flood Hazard Areas and floodplains, as shown in Figures 4.11.1 and 4.11.2. Among other requirements, these types of construction are required to: use materials resistant to flood damage; be anchored to prevent flotation, collapse or lateral movement of the structure resulting from water movement or loading, including the effects of buoyancy; use construction methods and practices that minimize flood damage; and have electrical, heating, ventilation, plumbing and air conditioning

equipment and other service facilities designed and located to prevent water from entering or affecting them during flooding.

Further, all subdivision proposals and other proposed new development, including manufactured home parks or subdivisions greater than 50 lots or 5 acres, whichever is less, are required to identify the base flood elevation (that is, 100-year flood extent) and be reviewed by Riverside County Flood District to ensure the project would be reasonably safe from flooding. This includes ensuring that: all utilities and facilities such as sewer, gas, electrical, propane tanks and water systems are located and constructed to minimize or eliminate flood damage; adequate drainage is provided to reduce flooding potential; and, that all other required state and federal permits have been obtained. All new and replacement water supply systems must be designed to minimize or eliminate infiltration of floodwaters into the systems. New and replacement sanitary sewage systems must also be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters and onsite waste disposal systems must be located to avoid impairment or causing contamination during flooding. Lastly, all manufactured homes must be installed using methods and practices which minimize flood damage.

New construction and substantial improvements of residential structures are required to have their lowest floor, including basement, located at or above the base (100-year) flood elevation. All new construction and substantial improvements of nonresidential structures must meet this standard or, together with attendant utility and sanitary facilities, be designed so that the portion of the structure below the base flood level is watertight. This means walls must be substantially impermeable to the passage of water and structural components must have the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

For new structures and substantial improvements within Riverside County's mapped Special Flood Hazard Areas and floodplains, specific flood mapping conditions are required to be met prior to grading or building occupancy. For example, prior to grading, a Conditional Letter Map of Revision (LOMR) must be issued by FEMA and prior to inspection for occupancy, a LOMR must be issued by FEMA for areas shown as floodplain on the effective FIRM. These mean, in essence, that the development must document proof that it has engineered the site or its structures so that it is either out of the floodplain or watercourse, or that the flood hazard no longer exists for stated reasons.

Pursuant to Ordinance No. 458, no structure shall be constructed, located or substantially improved and no land shall be graded, filled or developed in the areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any increase in flood levels during the occurrence of the base flood discharge. If a proposed permit qualifies for approval in the floodway, it shall then meet all the requirements necessary for approval of a permit in a Special Flood Hazard Area or floodplain. Until such time that a regulatory floodway is adopted, no new construction or other development (including fill) shall be permitted within Zones A, A1-30 and AE, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than 1 foot or as determined by Riverside County Flood or the CVWD at any point along the floodplain.

For proposed alterations within a watercourse or mapped floodplain, the flood carrying capacity of the altered or relocated portion of the watercourse or mapped floodplain shall be maintained. Manufactured slopes that encroach into a floodplain and are subject to erosive velocities are considered flood control facilities and must be maintained by a public entity. Within certain zones (AH and AO) on Flood Insurance Rate Maps, adequate drainage paths around structures on slopes must be provided, to guide floodwaters around and away from proposed structures. Ordinance No. 458 also specifically requires that all new buildings and/or substantial improvements located within the 500-year floodplain limits of Lake Elsinore shall have their lowest floor elevated

a minimum of 3 feet above the Lake's 100-year water surface elevation. Maps of the 100-year and 500-year floodplains for Lake Elsinore can be obtained through the City of Lake Elsinore's website; all Riverside County areas can be viewed online at www.rcflood.org.

In summary, the specifications, standards and requirements contained in Ordinance No. 458 establish and implement measures that mitigate potential flood hazards within Riverside County. Collectively, these serve to ensure that flooding risks, water flows and runoff are managed appropriately to prevent hazards and undue risk of damage or harm to people, property, structures and facilities within Riverside County. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, this ordinance mitigates potential hazards that could arise from flooding hazards and its effects on people, property and structures.

Ordinance No. 461 - Road Improvement Standards: While not addressing flooding directly, this ordinance does set forth standards for roads, bridges and other transportation-related facilities, including those aspects of flood risk management associated with them. Because of their linear and impervious nature, paved roadways typically act as conduits for water flow, particularly stormwater (urban) runoff from developed areas. In addition, they often may function informally as barriers (dams, dikes or levees) to water flow or cause water channelization when constructed on raised beds or with tall curbs or crowns. Also, roadways often cross rivers, streams, drainages, floodplains and similar features. All crossings must be sufficiently engineered to withstand the potential impacts of flood flows. Hence, Ordinance No. 461 imposes standards and engineering specifications that reduce these potential flood impacts to ensure the safety and integrity of the roadway or improvement. As such, this ordinance serves to mitigate potential flooding hazards to people, property and structures by ensuring that roads and associated improvements and features are designed, constructed and maintained in a manner appropriate for the water flow potential and flooding hazard.

Ordinance No. 659 - Development Impact Fee Program: This ordinance sets a range of development impact fees to be used "in order to effectively implement the Riverside County General Plan, manage new residential, commercial and industrial development and reduce impacts caused by such development." It is intended to mitigate growth impacts (particularly those arising from population growth) on public facilities within the county to ensure residents are not placed into conditions perilous to their health, safety, comfort or welfare.

The ordinance establishes the process for (and nexus to) the construction or acquisition of various types of public facilities, as well as the preservation of open space, wildlife and their associated habitats. The DIF program ensures that "all new development bear its fair share cost of providing the facilities, open space and habitat reasonably needed to serve that development." Hence the program applies to all new residential, commercial and industrial development, as well as to surface mining. Fees are assessed on the basis of regional location within the county, land use type (per dwelling unit for residential units and per acre for all other uses) and the applicable categories of facilities to be provided. The services covered by the fee include: public facilities, fire facilities, regional parks, community parks and centers, regional multi-purpose trails and library services. Fees associated with these services are based on estimates of Riverside County's needs for the subsequent ten years. For transportation and flood risk management, fees are based on forecast development needs for the subsequent 20 years. In regards to flood control facilities, the DIF program ensures fees are collected and expended to provide necessary facilities commensurate with the ongoing levels of development in specific areas not already subject to, or in addition to, Area Drainage Plan fees as under Ordinance No. 458. These areas include the Upper San Jacinto Valley, Mead Valley/Good Hope and the San Gorgonio Pass.

This ordinance provides mitigation for development impacts on flood control facilities and future needs for flood risk management by ensuring that funds are collected and utilized to provide needed facilities as development

progresses within the county. The provision of these facilities ensures new development does not expose people, property or structures to undue flooding risks from urban runoff.

Ordinance No. 754 - Stormwater / Urban Runoff Management and Discharge Controls: Among other things, the ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit or as otherwise authorized by the Santa Ana, San Diego or Colorado River Basin RWQCB or the SWRCB in compliance with the federal Clean Water Act. This ordinance also establishes a variety of standards and BMPs associated with controlling stormwater runoff.

Although focusing on the pollution-control aspects of the NPDES program, in conjunction with Ordinance No. 457 and Ordinance No. 460, this ordinance establishes a range of standards and permit requirements that collectively serve to ensure that stormwater flows and runoff in developed areas are managed appropriately to prevent hazards or undue risk of damage or harm to people, property, structures and facilities within Riverside County. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, this ordinance mitigates potential hazards that could arise from stormwater flows and runoff, including flooding and erosion, and its effects on people, property and structures.

D. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval. The following existing and proposed General Plan Safety (S) Element polices reduce impacts related to flooding, dam inundation and related hazards.

Policy S 4.1: For new construction and proposals for substantial improvements to residential and non-residential development within 100-year floodplains as mapped by FEMA or as determined by site-specific hydrologic studies for areas not mapped by FEMA, Riverside County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency.

Policy S 4.3: Prohibit construction of permanent structures for human housing or employment to the extent necessary to convey floodwaters without property damage or risk to public safety. Agricultural, recreational or other low intensity uses are allowable if flood control and groundwater recharge functions are maintained.

Policy S 4.4: Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted.

a. Prohibit the construction, location or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

b. Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

Policy S 4.5: Prohibit substantial modification to watercourses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property, nor adversely affect adjacent wetlands or riparian habitat.

Policy S 4.6: Direct flood control improvement measures toward the protection of existing and planned development.

Policy S 4.8: Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety.

Policy S 4.9: Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site-specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood-proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects or concentrations of flows.

Policy S 4.10: Require all proposed projects anywhere in the county to address and mitigate any adverse impacts that it may have on the carrying capacity of the local and regional storm drain systems.

Policy S 4.11: Encourage neighboring jurisdictions to require development occurring adjacent to the county to consider the impact of flooding and flood control measures on properties within unincorporated Riverside County.

Policy S 4.12: Require certain existing essential, dependent care and high-risk facilities that are not in conformance with the provisions of county zoning to upgrade or modify building use to a level of safety consistent with the inundation risk.

Policy S 4.16: Utilize power of public land acquisition and other land use measures to create open space zoning of inundation zones in areas that are destined for redevelopment; when this is not feasible, low density land uses should be employed.

Policy S 4.17: Continue to assess and upgrade inundation risk and protection in the county.

Policy S 4.18: Require that the design and upgrade of street storm drains be based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress from excessive flood depth, and the threat of contamination of the storm drain system with sewage effluent. In general, the 10-year flood flows shall be contained within the top of curbs and the 100-year flood flows within the street right-of-way.

Policy S 4.19: Encourage periodic re-evaluation of 500-year, 100-year and 10-year flood hazard in the county by state, federal, county and other sources, and use such studies to improve existing protection, to review protection standards proposed for new development and redevelopment, and to update emergency response plans.

Policy S 4.20: Balance flood control mitigation with open space and environmental protection.

Policy S 4.21: Encourage the use of specific plans to allow increased densities in certain areas of proposed development; or apply Transfer of Development Credits to encourage the placement of appropriate land uses in natural hazard areas, including open space, passive recreational uses, or other development capable of tolerating these hazards.

Policy S 4.22: Take an active role in acquiring property in high-risk flood zones and designating the land as open space for public use or wildlife habitat.

E. Proposed New or Revised Riverside County General Plan Policies

The following proposed revised General Plan policy addresses impacts related to flooding and dam inundation hazards.

1. Safety (S) Element

Policy S 4.2: *The county shall* ~~E~~enforce provisions of the Building Code in conjunction with the following guidelines:

a. All residential, commercial and industrial structures shall be flood-proofed from the *mapped* 100-year stormflow.~~, and~~ *This may require that* the finished floor elevation ~~shall~~ be constructed at such a height as to meet this requirement. *Non-residential (commercial or industrial) structures may be allowed with a "flood-proofed" finished floor below the Base Flood Elevation (i.e., 100-year flood surface) to the extent permitted by State, federal and local regulations. New* ~~C~~critical facilities *shall* ~~should~~ be constructed above grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies. *To the extent that residential, commercial or industrial structures cannot meet these standards, they shall not be approved.*

b. Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.

c. Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted *within a 100-year floodplain or dam inundation zone,* unless all standards for evaluation, anchoring and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations.

d. Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.

Policy S 4.7: Any substantial modification to a watercourse shall be done in the least environmentally damaging manner ~~possible~~ *practicable* in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.

2. Circulation (C) Element

NEW **Policy C 20.4:** *New crossings of watercourses by local roads shall occur at the minimum frequency necessary to provide for adequate neighborhood and community circulation and fire protection. Wherever feasible, new crossings shall occur using bridging systems that pass over entire watercourses and associated floodplains and riparian vegetation in single spans. Dip or culvert crossings shall be avoided, but, where their use is unavoidable, they shall be designed to minimize impacts on watercourses.*

NEW **Policy C 20.5:** *In order to protect the watershed, water supply, groundwater recharge, and wildlife values of watercourses, the county will avoid siting utility infrastructure and associated grading, fire clearance, and other disturbances within or adjacent to watercourses, if there are feasible alternatives available, and discourage special districts and other governmental jurisdictions outside of the county's authority, from doing so. Where such watershed utility siting locations cannot be avoided, the impacts on watercourses shall be minimized.*

4.11.4 Thresholds of Significance for Flood and Dam Inundation Hazards

The proposed project would result in a significant flood or dam inundation impact if it would:

A. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

B. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

C. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

D. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

E. Expose people or structures to a significant risk of inundation due to seiche, tsunami or mudflow.

4.11.5 Effect of GPA No. 960 on the General Plan and on Flood and Dam Inundation Hazards

The proposed project, GPA No. 960, would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and standards, and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. In this section, the flood-related changes to the General Plan are outlined and the effects of proposed changes relative to flood and dam inundation hazards are discussed. Specific impacts and mitigation for the project are then evaluated according to identified significance thresholds in the subsequent section.

A. Proposed Changes to the General Plan

As part of the project review process, data and map related to flooding and dam inundation hazards in the General Plan were updated and associated policies reviewed and revised where necessary. The existing General Plan addresses flooding hazards in the Safety Element with the multipurpose open space element also containing riparian and flood plain policies. Texts of relevant existing and revised General Plan policies are provided in Sections 4.11.3E and F.

Flooding Hazard Maps: As part of the GPA No. 960 update, text was added and policies updated to accommodate new 100-year flood mapping released by FEMA and as adopted by Riverside County pursuant to Riverside County Ordinance No. 458 after review and acceptance by FCWCD. Several related Safety policies were revised as part of this and related exhibits were also updated: Figure S-9, 100-year Flood Hazard Zones (and related "Flood Hazard" maps in the Area Plans), and Figure S-10, Dam Failure Inundation Zones.

Land Use Changes: Several proposed changes would affect future development potential within areas at risk for flooding, dam inundation and/or seiche. In particular, this includes the proposed changes to the Lakeland Village area around Lake Elsinore. Changes around the Salton Sea could also occur on lands affected by that waterbody, however, the LUD changes proposed are from higher density/intensity developed uses (including residential) to AG (the Agriculture Foundation) to better recognize and accommodate aquaculture activities along the sea's shores. Such changes would actually *decrease* potential flooding risks associated with the Salton Sea.

The key changes in proximity to flood potential areas are those for Lakeland Village. However, the whole purpose of the proposed GPA No. 960 changes to the area is to better accommodate known flood boundaries. Specifically, in the past few years, the 100-year flood boundaries surrounding Lake Elsinore were adjusted to reflect more recent hydrology data. As a result, more precise LUD assignments can be made, particularly for the long, narrow lake-front lots that lie on the lakeside of Grand Avenue. Although these changes improve flood safety through better definition and accommodation of the lake's floodplain, they also remove existing barriers to growth by providing more suitable LUDs on some parcels formerly with split designations. Paradoxically, the changes may also increase flood risks by exposing more people, property and structures to flood hazards, as well as potentially seiche risks at the southeastern-most end of the lake.

The variety of LUD and policy area changes proposed, as per the descriptions in Section 3.0 (Project Description) of the EIR and associated Figure 3-1 (as well as the corresponding maps within each Area Plan) may indirectly affect flooding hazards, including dam inundation threats. Such changes would lead to either an increase or decrease in development potential (density or intensity); the risks associated with introducing new people and property into areas potentially subject to the various flooding hazards outlined herein would be increased correspondingly.

GPA No. 960 also includes new and revised policies to be implemented at locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies and others, as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (GP Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements will be determined based on site assessment of and geotechnical suitability to determine environmentally preferred alignments to minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines and area drainage plans, are also developed based on the agency's priorities, including existing and future levels of service and need assessments and forecasts; typically

based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power transmission lines, water and sewer lines, roads, flood risk management projects and other public services are not presently foreseeable beyond the five-year master plan level. These improvements will require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out (over the next 50-plus years). As such, future impacts and mitigation would be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed later at the individual project stage.

B. Analysis of GPA No. 960 Effects on Flooding and Dam Inundation Hazards

The General Plan is concerned mainly with the physical build out of the county; many of the changes associated with GPA No. 960 would affect planned land usage. In particular, proposed changes affect land use overlays, land use designations and policies that affect the conversion of rural, semi-rural, agricultural and vacant lands to suburban or urban uses in various parts of Riverside County.

For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), hazards cannot be delineated at present. Likewise, the potential for future development occurring within the proposed revised policy areas and overlays has been generalized for this EIR, but due to the large scale of Riverside County and these policy areas, site-specific flooding hazards cannot be accurately assessed at this time. More generally, future development accommodated by the updated General Plan could be effected by a variety of geologic hazards depending upon location. These include 100-year floods, flash floods, dam inundation, seiche and mud flows. Where not foreseeable at this time, such affects are addressed programmatically, as per the section below.

Floodplains: Spatial analysis performed for the project indicates that a number of land use-related changes with the potential for introducing or intensifying future development are proposed for areas within an existing 100-year floodplain. Within western Riverside County, these areas include land within the floodplains of Prado Basin on the Santa Ana River; within the Airport Land Use Policy Area for Flabob Airport (also adjacent to the Santa Ana River); land within or just off the Temescal Wash floodplain, between Lake Elsinore and Prado Basin; land within the proposed Lakeland Village Policy Area, adjacent to Lake Elsinore; small areas within the proposed Meadowbrook and Good Hope Rural Village Overlays (which are within 100-year flood zones associated with Lake Elsinore or Canyon Lake to the southwest); land associated with Lake Skinner; and, land associated with the proposed Northeast Dairy Business Park Policy Area (which is within the floodplain of the San Jacinto River). Within the Pass and Eastern Riverside County, these areas include: land along the Big Morongo Wash north of Palm Springs; land along washes associated with the hills and canyons of the Little San Bernardino Mountains along the northeast edge of Coachella Valley, including East and West Wide Canyon, Pushawalla, Thousand Palm, Berdoo and Rockhouse Canyons; and other drainages trending southwesterly into Coachella Valley and towards the Whitewater River. And, lastly, a number of areas associated with the floodplain around the Salton Sea.

Dam Inundation Zones: Not all dams within Riverside County have designated dam inundation areas. Although there has never been a historical dam failure in Riverside County, the risk of dam failure, no matter how remote, should be assumed to exist. Figure 4.11.2 shows mapped potential dam inundation areas within the county. Development of areas affected by GPA No. 960 in these areas is assumed to be at risk in the event of a structural dam failure or a dam failure as a result of an earthquake, unless engineering (such as pad elevation), levees, dikes or features exist to prevent flooding damage.

Spatial analysis performed for the project indicates a number of land use-related changes with the potential for introducing or intensifying future development are proposed for areas within existing dam inundation zones. In western Riverside County, these areas include: land along the Santa Ana River outside of the Prado Dam basin; land along Temescal Wash downstream from Lake Elsinore and the reservoir at Hemet (Lee) Lake; land along Lake Elsinore within the proposed Lakeland Village RVO; land downstream from the reservoirs at Diamond Valley and Lake Skinner; and, land along the San Jacinto River and associated with Lake Perris. Due to the sandy soils and lack of reservoirs, there are no dam inundation zones affecting the project in eastern Riverside County.

Seiche Hazards: In terms of seiche hazards, there is no significant potential for any of the waterbodies within Riverside County. For the proposed project, resultant future development along or near lakes and reservoirs is considered minimal. Along the large, man-made reservoirs, such as Diamond Valley Reservoir and Prado Dam, the facilities have been engineered to reduce seiche risks and these facilities are further buffered by public lands along their shores, adding an additional layer of protection from localized flooding. For Lake Elsinore and the Salton Sea, their shallowness and extensive shorelines both tend to minimize seiche potential. Due to its inland location, there are no oceanic tsunami risks in Riverside County. None of the other land use-related changes proposed under GPA No. 960 are within areas affected by either 100-year flooding risks, dam inundation hazards or seiche risks.

Mudflow Hazards: In terms of mudflow hazards, areas of proposed land use-related changes with the potential for introducing or intensifying future development are generally at risk for mudflow hazards if they are: on or below a steep or unstable slope; within a steep-sided canyon; within an area with flashflooding potential; or, in an area denuded of vegetation by recent wildfire, particularly if any of the other factors also occur. Flashflooding potential generally exists along any canyon, swale or other low-lying area in which heavy precipitation fall may be channeled rapidly and unexpectedly. Risks to future development as a result of flashflooding are reduced through the various regulatory floodplain and drainage flow control measures. See discussion under Section 4.11.6 (Flood and Dam Inundation Hazards – Impacts and Mitigation), below.

Alluvial Fan Flooding Hazards: It is beyond the scope of this project to analyze and determine whether or not a given site or parcel of land is located on an alluvial fan.

C. Generalized Flooding Effects

Hazards associated with flooding can be divided into primary hazards that occur due to contact with water, secondary effects that occur because of the flooding, such as disruption of services, health impacts such as water-borne disease and increase in vectors (e.g., mosquitoes), and tertiary effects, such as changes in the position of river channels.

Primary Effects: These effects arise from direct contact with flood waters and the high water velocities commonly associated with flood conditions.

- With higher velocities, streams are able to transport larger particles as suspended load. In addition to rocks and sediment, during a flood, forces may also carry large objects, such as trees, automobiles, houses and bridges. This deposition can cause considerable damage. And, even in storms of lower intensity, if enough water carries sediment into a flood control structure (channel or storm drain, for example), the ability of the structure to convey flood flows could be overwhelmed, leading to additional flooding downstream.

- When large amounts of precipitation fall over a short period on saturated soil or dry soil with poor absorption capacity, the result can be a flash flood. In such floods, runoff collects in gullies and streams,

which flow together creating large-volume flows, often featuring a fast-moving front of water and debris. Such floods can occur anywhere downstream from the source of the precipitation, even many miles distant. Their unexpectedness can cause loss of lives to people hiking in or driving across an affected drainage unable to escape the sudden deluge. (As little as two feet of water can carry away an SUV-sized vehicle.)

- Flood waters can cause massive amounts of erosion and scouring. Such erosion can undermine bridge structures, levees and buildings causing their collapse. Such collapse would cause further additional flood damage.

- Water entering human-built structures causes water damage. Even with minor flooding of homes, furniture is ruined, floors and walls are damaged, and anything that comes in contact with the water is likely to be damaged or lost. Flooding of automobiles usually results in damage that cannot easily be repaired.

- When the flood waters retreat, water velocity slows, causing any suspended sediment load to be deposited. Thus, after retreat of the floodwaters, affected areas are typically covered with a thick layer of stream-deposited mud, including the interior of buildings.

- Flooding of farmland usually results in crop loss. Livestock, pets and other animals are often carried away and drown.

- Humans that get caught in the high-velocity flood waters are often drowned by the water.

- Floodwaters can concentrate garbage, debris and toxic pollutants that can cause the secondary effects of health hazards.

Secondary Effects: As noted above, secondary effects are those that occur because of the flooding. They can include the following:

- Contamination of drinking water supplies, especially if sewage treatment plants are flooded or delivery lines broken. This can also result in disease and other health effects when people consume improperly or inadequately purified water.

- Gas and electrical services may be disrupted due to downed lines, broken pipes, flooded transformers or transfer stations, etc. This can also lead to additional fires due to use of candles and other open-flame sources in or around homes.

- Transportation systems may be disrupted, for example, roads, bridges and railroad tracks flooded, eroded or washed away. This can lead to shortages of food and water, as well as trouble providing medical supplies and evacuating sick or injured victims, due to access difficulties by emergency services. Post-flood clean-up and recovery can also be hindered by difficulties delivering needed heavy equipment, clean-up supplies and personnel to the stricken area.

Tertiary Effects: Lastly, tertiary effects involve long-term changes, including:

- The location of river channels may change as a result of flooding, with new active channels developing and old channels becoming dry.

- Loss of floodplain habitat changes the composition of plants and animals occupying the area. This change can persist for many years if mature riparian woodlands were lost. The new successional vegetation that returns may not support the same species.

- Sediment deposited by flooding may destroy farm land; although silt deposited by floodwaters could also increase the agricultural productivity of the soil.

- Jobs may be lost due to the disruption of services, destruction of businesses (or loss of inventories, etc.) Jobs may also be gained in specific sectors, however, such the construction industry to help rebuild and repair flood damage.

- Insurance rates for properties in the floodplain may increase. Neighborhoods and communities may permanently change composition as some people leave rather than rebuild. Abandoned structures and vacant lots may result where the owner cannot afford to rebuild.

D. Development Effects on Flood Hazards

How the land is used and developed can affect the risks resulting from floods. While some activities can be designed to mitigate the effects of flooding, many land use practices and structures can unwittingly increase flood risk. Clearing a floodplain for agriculture permits a progressively higher percentage of a large flood discharge to be carried in the floodplain. Forest vegetation tends to absorb moisture and lessen runoff. Deforestation or logging practices reduce the vegetation and the forest's absorption capacity thus increasing runoff. Similarly, overgrazing of grasslands and rangelands decreases the vegetation cover and exposes soil to erosion, as well as increased runoff. Also, drainage and irrigation ditches and also water diversions can alter the discharge into floodplains and the channel's capacity to carry the discharge. Obviously, dams, dikes, levees and other flood control structures can lessen an area's flood potential by containing or redirecting flows.

Urbanization of a floodplain or adjacent areas and its attendant construction increases runoff because it reduces the amount of surface land area available to absorb rainfall and it also channels flow into storm drains and drainage ways much more quickly. Also, artificial fill in a floodplain reduces its water capacity and can increase flood height. Thus, the risk of flooding may be increased.

In terms of land use, flood hazards are addressed through several basic means: The simplest and most effective option is avoiding the risk; i.e., redesigning a project to avoid the floodplain by designating it as a project's open space, for example. A second option is diverting a flood hazard through channelization or blocking flow with dikes or levees. This option results in offsite or downstream effects, however, which must also be addressed. One of the most common options is elevating a site (grading pad, for example) to rise at least two feet above the floodplain elevation. This option is not always feasible for large areas and also requires a number of regulatory steps that are enforced by Riverside County (see discussion later in this section). And, lastly, when all else fails, a development or structure may resort to *floodproofing* in some cases (such as non-residential buildings), for which a variety of standards apply. As an example, floodproofed buildings within a FEMA Special Flood Hazard Area must be certified by FEMA and are addressed by several FEMA Technical Bulletins.

4.11.6 Flood and Dam Inundation Hazards - Impacts and Mitigation

A. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Impact 4.11.A – Result in Housing Within Flood Hazard Areas: Future development accommodated by the project would result in encroachment into areas of mapped 100-year floods (including some alluvial fans) and other delineated flood hazards areas. Such development may increase the amount of people, structures and property at risk should a flooding event occur. These flood hazard areas are extensively regulated, however, and compliance with existing laws and regulatory programs, in particular Riverside County Ordinance No. 458, as well as General Plan policies and existing Mitigation Measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.11.A

Flooding can inundate and damage structures, bury structures, knock them off their foundations or completely destroy them through high velocity water and debris, which can include sizable boulders. Impacts from flooding include the loss of life and/or property; health and safety hazards; disruption of commerce, water, power and telecommunication services; loss of agricultural lands; and infrastructure damage.

As outlined in Section 4.11.5, future development that could result from the proposed project has the potential to introduce people, property, homes, public facilities, roads and other infrastructure into 100-year flood hazard areas. GPA No. 960 proposes parcel-specific land use changes for approximately 163 parcels, totaling 2,038 acres within existing 100-year floodplains. These parcels fall within the Western Coachella Valley, Eastern Coachella Valley, Southwest, Harvest Valley/ Winchester, Eastvale, Temescal Canyon and Elsinore Area Plans. Of these, 124 parcels (totaling approximately 1,876 acres) are proposed for land use designations with the potential to introduce additional people, property, homes, public facilities, roads and other infrastructure into 100-year floodplains. If development were allowed to occur in an unregulated fashion, this impact would be potentially significant. However, compliance with a variety of existing regulations and programs, as described below, would ensure that risks associated with development within 100-year flood hazard areas are less than significant.

2. Regulatory Compliance for Impact 4.11.A

As detailed and explained below, compliance with existing laws, regulatory programs, General Plan policies and existing EIR No. 441 mitigation measures would be sufficient to ensure that adverse effects associated any housing placed within a 100-year flood hazard area mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map are less than significant.

a. Compliance With Federal, State and County Regulations

Federal, state and local regulations would reduce impacts related to placement of housing within a 100-year flood hazard zones area. These include, but are not limited to, the following: National Flood Insurance Act, which establishes flood-risk zones within floodplain areas and requires local compliance with flood proofing building standards; National Flood Insurance Reform Act, which reduces the risk of flood damage to properties by providing a means to rectify any flood-related damage; Cobey-Alquist Floodplain Management Act, which requires local governments to protect people and property from flooding hazards as a condition of the receipt of

State funds; as well as various county ordinances. In particular, as outlined below, Riverside County Ordinance No. 458 implements the National Flood Insurance Program within Riverside County and places strict conditions on acceptable levels of development in floodplains. These items are summarized below:

Through these policies, programs and ordinance standards, development within floodplains and development with the potential to be adversely affected by flooding hazards are highly regulated and potential impacts are reduced to less than significant levels by Riverside County's development review process.

FEMA Floodplain NFIP Mapping Program and Riverside **County Ordinance No. 458:** As discussed above, the County of Riverside participates in the NFIP and uses FIRMs as the basis for Riverside County flood risk management planning. Ordinance No. 458 establishes the official "flood hazard areas" within the county through the adoption of various FIRM maps, as well as maps from other sources. (The current list of official maps recognized by Ordinance No. 458 as of May 2013 are listed previously, above.)

When deemed necessary by Riverside County Flood, developments proposed within FEMA-mapped flood hazard areas must submit their plans to FEMA showing how the project will be elevated out of the floodplain or otherwise eliminated or safely managed. When a floodplain revision is necessary, FEMA will issue a "conditional determination" letter of map revision (CLOMR) summarizing the project's effect on the floodplain and accepting proposed floodplain alterations associated with the project (if any). FEMA makes such determinations based on review of revisions to the designated floodplain, such as a floodplain modification project or simply the proposed placement of fill to elevate structures or parcels. By requiring agency-approved-proof via submitted engineering plans and/or hydrological study, this process ensures that no development is allowed that would cause flood impacts due to development within FEMA-mapped floodplains, or expose any people, property or structures to any significant flood risks. Specifically, Riverside County Ordinance No. 258 prohibits any development or floodway changes that would revise the base flood (i.e., 100-year flood level) elevation by more than one foot.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: The specifications, standards and requirements of Ordinance No. 458 mitigate potential flood hazards within Riverside County several ways. They ensure that flooding risks, water flows and runoff are managed appropriately to prevent hazards or undue risk of damage or harm to people, property, structures and facilities within Riverside County. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, this ordinance mitigates potential hazards that could arise from flooding hazards and its effects on people, property and structures. It should also be noted that this ordinance specifically requires that all new buildings and/or substantial improvements located within the 500-year floodplain limits of Lake Elsinore shall have their lowest floor elevated a minimum of 3 feet above the lake's 100-year flood level elevation.

National Pollution Discharge Elimination System (NPDES): The RWQCBs provide state-level water quality policy for Riverside County and oversee the Clean Water Act's NPDES program. Under the NPDES, California's RWQCBs oversee water quality in Riverside County for their respective regions.

Ordinance No. 348 - Land Use: Use of this ordinance and the "Watercourse, Watershed & Conservation Areas" (W-1) zone mitigates potential flood impacts by preventing permanent occupancy or residency in areas potentially at risk for flooding.

Ordinance No. 457 - Adopting and Amending Various Building and Construction Codes: Use of this ordinance establishes building standards and codes that apply in flood zones to ensure that potential flood impacts on structures and the people and property occupying them are minimized. This is accomplished in a number of ways including varying floor elevations based on recommendations from Riverside County Flood as

well as ensuring compliance with other applicable federal, state and county regulations. Potential adverse impacts due to construction, urban runoff, stormwater flows and water erosion on lands subject to development are also minimized through grading and pollution restrictions, erosion control measures and in some cases implementation of various monitoring and reporting measures.

Ordinance No. 659 - Development Impact Fee (DIF) Program: This ordinance sets a range of development impact fees for new residential, commercial and industrial development. For flood control facilities, the DIF program ensures fees are collected and expended to provide necessary flood facilities such as basins, canals, etc. based on the public facilities needs list which is revised based on the ongoing levels of development. The development of these facilities ensures new development does not expose people, property or structures to undue flooding risks.

b. Compliance with Existing General Plan Policies

The following existing Riverside County General Plan policies would help prevent significant impacts to housing within flood hazard areas. See Section 4.11.3.E for full text of each of these policies. Implementation of these General Plan policies in combination with the above existing county, state and federal regulations related to flooding hazards would reduce the effects of future growth and development consistent with GPA No. 960 in relation to flood hazards, to a less than significant level. Specifically:

Regarding Policy S 4.1: Compliance with this policy would reduce potential adverse impacts to new housing located within flood hazard areas by requiring that new development have a minimum level of acceptable risk that is determined through County of Riverside review in order to mitigate potential hazards. Proposals will not be approved if they cannot mitigate those potential hazards to acceptable levels which are determined by the responsible county agency.

Regarding Policy S 4.3: Compliance with this policy would reduce potential adverse impacts to housing located within flood hazard areas by prohibiting the construction of permanent structures in areas that would impede flood waters and potentially expose said structures to property damage or other flooding risks. The policy does allow for low intensity uses in these areas as long as flood risk management functions are maintained.

Regarding Policy S 4.4: This policy prohibits alteration of floodways and channelization unless other methods of flood control are not feasible, thereby maintaining and preventing the obstruction of existing flood control facilities by development proposals consistent with GPA No. 960. The policy also allows for incentive provisions, such as density transfers, to be offered in an effort to maintain natural watercourses and floodways by focusing development away from these critical features.

Regarding Policy S 4.8: This policy allows developments along the floodway fringe only if it has been determined that proposed structures can be flood-proofed and would not contribute to property damage or risks to public safety.

Regarding Policy S 4.9: This policy requires development within the floodway fringe be capable of withstanding flooding and use a minimum amount of fill for the project, thereby directly reducing potential impacts and protecting developments, such as housing projects, within floodplains and other flood areas. The policy establishes uses that may be compatible with being located in floodplains and floodways, and waives flood-proofing requirements for those uses if they do not obstruct flows.

Regarding Policy S 4.10: This policy requires all development proposals to mitigate their potential impacts on the capacity of regional storm drain systems.

Regarding Policy S 4.18: This policy requires the design and upgrade of street storm drains for development proposals based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress and the threat of contamination of the storm drain system with sewage effluent.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised policy of the Riverside County General Plan would further prevent significant impacts to housing located within flood hazard areas. See Section 4.11.3.F for full text of this policy.

Regarding Policy S 4.2: This proposed policy would further reduce already insignificant flooding hazards by prohibiting projects or construction, such as housing projects, within floodplains and other flood hazard areas under various circumstances.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, which was certified for the 2003 (RCIP) General Plan, it was determined that to fully minimize risks associated with the placement of habitable structures and housing within 100-year flood hazard areas, several mitigation measures were also necessary. These mitigation measures from EIR No. 441 are listed below and apply countywide, thus they also apply to GPA No. 960. They further contribute to ensuring flood impacts would be less than significant.

Existing Mitigation Measure 4.9.2A: Riverside County shall require that all structures (residential, commercial, and industrial) be flood-proofed from the 100-year storm flows. In some cases, this may involve elevating the finished floor more than 1 foot.

Existing Mitigation Measure 4.9.2B: Riverside County shall require that fully enclosed areas that are below finished floors have openings to equalize the forces on both sides of the walls.

Existing Mitigation Measure 4.9.2C: Riverside County shall require that for agricultural, recreation, or other low-density uses, flows are not obstructed and that upstream and downstream properties are not adversely affected by increased velocities, erosion backwater effects, or concentration of flows.

Existing Mitigation Measure 4.9.2D: Provided the applicant does hydrological studies, engineers structures to be safe from flooding and provides evidence that the structures will not adversely impact the floodplain, Riverside County may allow development into the floodway fringe.

3. Finding on Significance for Impact 4.11.A

Compliance with the above regulations, policies and mitigation measures would ensure that people and property are not exposed to significant 100-year flood hazards. As a result, flood hazards associated with future development consistent with the project would be less than significant.

B. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Impact 4.11.B – Cause Impediment of Flows: Future development as a result of implementation of the proposed project may result in placement of structures within 100-year flood hazard areas, creating the potential

for impeding or redirecting flood flows. As a result, people, structures and property, as well as those introduced by the new development, could be exposed to increased flooding risks. Compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, in particular County Ordinance No. 458, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.11.B

Development along stream channels and floodplains can alter a channel's capacity for conveying water and can increase the height of the water surface corresponding to a given discharge. In particular, structures such as bridges that encroach on a floodplain can increase upstream flooding by narrowing the width of the channel and increasing the channel's resistance to flow. As a result, water is higher when it flows past the obstruction, creating a backwater that could inundate a larger area upstream.

Some of the land use-related changes included in the project would allow for the construction of structures potentially within a drainage, floodway or floodplain. For example, houses would be constructed in areas designated for residential land use, factories and stores would be constructed in areas designated for commercial and industrial land uses, and roads and bridges could be constructed in areas designated as open space in order to provide public access to these areas. Thus, it is important that any structures proposed in a 100-year floodplain be properly designed, engineered and constructed to ensure that they would not impede or redirect flows within the floodway. And, in fact, the County of Riverside requires this as part of a project's Conditions of Approval issued by Riverside County Flood.

Flooding can inundate and cause water damage to structures, bury structures, knock them off their foundations or completely destroy them through high velocity water and debris flows, which can include sizable boulders. Impacts resulting from flooding include the loss of life and/or property; health and safety hazards; disruption of commerce, water, power and telecommunications services; loss of agricultural lands; and infrastructure damage.

As outlined in Section 4.11.5, future development that could result from implementation of the proposed project has the potential to introduce people, property, homes, public facilities, roads and other infrastructure into 100-year flood hazard areas. Without the application of existing regulations and requirements to prevent improper development, this impact could be potentially significant. However, compliance with a variety of existing regulations and programs, as described below, ensures that risks associated with impeding or redirecting flows would be less than significant. No project-specific mitigation is required.

2. Regulatory Compliance for Impact 4.11.B

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan policies and existing EIR No. 441 mitigation measures are sufficient to ensure that adverse effects associated with potential impeding or redirecting of flood flows as a result of GPA No. 960 would be less than significant.

a. Compliance With Federal, State and County Regulations

Compliance with federal, state and local regulations would reduce impacts resulting from impeding or redirecting water flows. These include, but are not limited to, the National Flood Insurance Act, the National Flood Insurance Reform Act and the various Riverside County ordinances outlined under Impact 4.11.A, above.

National Flood Insurance Act and National Flood Insurance Reform Act: These acts reduce adverse impacts resulting from impeded flows by requiring development plans be submitted to and reviewed by FEMA

for floodplain effects. FEMA's role in this process ensures that no development would be permitted if it would impede flows and cause a risk to people or property.

Ordinance No. 458 – Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance reduces impacts by regulating development in regards to flooding risks and by ensuring that flood flows are managed appropriately to prevent hazards or undue risk of damage or harm to people, property, structures and facilities within Riverside County.

Ordinance No. 461 - Road Improvement Standards: This ordinance sets standards and engineering specifications (including flood control/risk management attributes) for roads, bridges and other transportation-related facilities. It requires engineering, construction and maintenance to ensure the safety and integrity of the roadway or improvement, thereby mitigating potential flooding hazards.

b. Compliance with Existing General Plan Policies

The following General Plan policies would further prevent significant impacts due to impeded flows. Implementation of these policies in combination with the above federal, state and county regulations would reduce flood hazard effects on future growth and development in Riverside County to a less than significant level. See Section 4.11.3.E for the full text of these policies.

Policy S 4.3: This policy reduces potential flooding hazards caused by impeding or redirecting flows by prohibiting the construction of permanent residential and employment structures in those areas that would impede flood waters and potentially expose said structures to property damage or other flooding risks. The policy does allow for low intensity uses in these areas as long as flood risk management functions are maintained.

Policy S 4.4: This policy prohibits alteration of floodways and channelization unless other methods of flood risk management are not feasible, thereby maintaining and preventing the obstruction of existing flood control facilities by development proposals consistent with GPA No. 960 and reducing potential adverse impacts associated with impeding flows. The policy also allows for incentive provisions, such as density transfers, to be offered in an effort to maintain natural watercourses and floodways and to focus development away from these critical resources.

Policy S 4.5: This policy prohibits substantial modifications to watercourses, thereby reducing potential flooding hazards caused by impeding or redirecting flows. When modifications are unavoidable, those modifications must not be detrimental to adjacent properties or adversely affect adjacent wetlands or riparian habitat.

Policy S 4.8: This policy allows only those proposed structures that can be flood proofed and would not contribute to the property damage or risks to public safety to be developed along the fringes of floodways. Placement along the fringe of a floodway further ensures that natural flows would not be impeded.

Policy S 4.9: This policy requires development within floodway fringes be able to withstand flooding and use a minimum amount of fill, thereby directly reducing potential impacts related to impeding flows and protecting developments, such as housing projects, within floodplains and other flood areas. The policy establishes uses that may be compatible with being located in floodplains and floodways, and waives the flood-proofing requirement for those uses as long as they do not impede flows.

Policy S 4.18: This policy requires the design and upgrade of street storm drains for development proposals based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress and the threat of contamination of the storm drain system.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised General Plan policies would further prevent significant impacts due to impeded flows. Implementation of these policies in combination with the above federal, state and county regulations would reduce flood hazard effects on future growth and development in Riverside County to a less than significant level. See Section 4.11.3.F for the full text of these policies.

Policy S 4.2 prevents potential flooding hazards by prohibiting projects or construction within floodplains and other flood hazard areas under various circumstances that could impede or redirect flood flows.

Policy S 4.7: This policy requires potential modifications to watercourses to be done in a manner that is the least damaging to the environment, thereby reducing potential flooding hazards caused by impeding or redirecting flows.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, which was certified for the 2003 (RCIP) General Plan, it was determined that to fully minimize risks associated with development impeding or redirecting flood flows, several mitigation measures were also necessary. These mitigation measures from EIR No. 441 are listed below and apply countywide, thus they also apply to GPA No. 960.

Existing Mitigation Measure 4.9.1A: LOMA and LOMR-F are documents issued by FEMA that officially remove a property and/or structure from a special flood hazard area of a Flood Insurance Rate Map (FIRM). These letters shall be accepted by Riverside County where applicable.

Existing Mitigation Measure 4.9.1B: Riverside County shall prohibit alteration of floodways and channelization unless alternative methods of flood risk management are found to be technically, economically and practicably infeasible.

Existing Mitigation Measure 4.9.1C: Riverside County shall not necessarily require all land uses to withstand flooding. These may include land uses such as agricultural, golf courses and trails. For these land uses, flows shall not be obstructed, and upstream and downstream properties shall not be adversely affected by increased velocities, erosion backwater effects, concentration of flows and adverse impacts to water quality from point and nonpoint sources of pollution.

Existing Mitigation Measure 4.9.1D: Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.

3. Finding on Significance for Impact 4.11.B

Compliance with the above regulations, policies and existing mitigation measures would ensure that any potential hazards caused by impeding or redirecting flows as a result of future development would be less than significant. No project-specific mitigation is required.

C. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Impact 4.11.C – Expose People or Structures to Flooding Risks, Including Flooding Due to Dam or Levee Failure: Future development accommodated by the project may result in placement of structures, including habitable ones, within dam inundation zones, alluvial fan flooding zones and other areas of potential flood hazard. Such development would be at greater risk of flood hazards should a dam, levee, debris basin or other critical flood control structure fail. As a result, existing people, structures and property, as well as those introduced as a result of GPA No. 960, could be exposed to increased flooding risks due to failure of flood control structures. Compliance with existing laws, regulatory programs and General Plan policies would be sufficient to ensure that this impact does not rise to the level of significance.

1. Analysis of Impact 4.11.C

Although there have been several notable floods in Riverside County over the past 10-plus years, there has never been a historical dam failure. Despite this, the risk of dam failure, no matter how remote, must be assumed to exist. In addition, there is a higher probability of failure of some of the other flood control structures, such as levees, debris basins and storm drains. These types of facilities are much more common and numerous within Riverside County than dams and require on-going maintenance to ensure safe and reliable function. And, since these types of facilities are often built on a smaller scale than major dams, they can also be more prone to being damaged or failing due to storm flows (or flooding) exceeding their design capacity.

As detailed in Section 4.11.5, some of the future development accommodated by GPA No. 960 would have the potential to introduce people, property, public facilities, roads and other infrastructure into areas potentially at risk of dam inundation or flooding due to other sources, e.g., failure of a levee or of a debris basin above an alluvial fan. Further, not all dams within Riverside County have designated dam inundation areas. In regards to known (mapped) dam inundation hazards, analysis indicates that approximately 26 parcels (462 acres total) with proposed parcel-specific land use changes would be affected under the project. These parcels fall within the Southwest, Harvest Valley/Winchester, Eastvale, Temescal Canyon and Elsinore Area Plans. Of these 26 parcels, only seven parcels (approximately 293 acres) are proposed for land use designations with the potential to introduce new people, property, roads and infrastructure into mapped dam inundation zones. The remaining designation changes would reduce development density/intensity, lowering the risks. Without measures that reduce flooding risks, this impact would be potentially significant. However, compliance with existing regulations and programs, as described below, would ensure that risks associated with development in dam inundation zones and other areas potentially prone to flooding or inundation hazards due to failure of a flood control facility would be less than significant.

2. Regulatory Compliance for Impact 4.11.C

As detailed and explained below, compliance with the following existing laws, regulatory programs and existing General Plan policies are sufficient to ensure that adverse effects associated with dam inundation risks resulting from GPA No. 960 would be less than significant. No project-specific mitigation is required.

a. Compliance With Federal, State and County Regulations

A variety of federal, state and local regulations address impacts related to dam inundation and other types of flood control improvements and safety. These include, but are not limited to, various Riverside County ordinances

outlined under Impact 4.11.A, above, including in particular Ordinance No. 458 (as it pertains to standards for flood control structures), as well as Ordinances No. 348, 457, 659 and 461, which were discussed under Impact 4.11.B.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.11.3, above, Policies S 4.1, 4.3, 4.4, 4.6, 4.8, 4.9, 4.16, 4.17, 4.18 and 4.19 provide mitigation for impacts related to dam inundation and flooding hazards. Implementation of these General Plan policies in combination with existing federal, state and county regulations would reduce the effects of dam inundation to a less than significant risk. Policy S 4.18 directly reduces the potential exposure of people and structures to flooding risks by requiring street storm drains be designed to handle a variety of flood conditions. Policies S 4.6 and 4.8 further reduce this potential hazard. Other General Plan policies that help reduce potential flooding, safety and other related impacts include: S 4.12, 4.17, 4.19, 4.20, 4.21 and 4.22.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised policy of the Riverside County General Plan would lessen potential dam inundation hazards associated with future development. For the full text of the following policy, see Section 4.11.3.E.

Policy S 4.2: This policy prohibits projects and construction within dam inundation zones under various circumstances, thereby avoiding flooding hazards.

3. Finding on Significance for Impact 4.11.C

Compliance with the above regulations and policies would ensure that any potential dam inundation hazards associated with future development consistent with the proposed project would be less than significant. No project-specific mitigation is required.

D. Would the project substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Impact 4.11.D – Cause the Adverse Alteration of Drainage Patterns or Substantially Increase Surface Runoff: Development consistent with GPA No. 960 would alter drainage patterns, streams and river courses, in some cases substantially. It would also cause increases in surface runoff through the introduction of non-permeable surfaces (roofs, pavement, roads, etc.). If not properly managed, this would cause hydrological changes that could expose existing people, structures and property, as well as those introduced by the project, to increased flooding risks. Compliance with existing laws, regulatory programs and General Plan policies would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.11.D

Future development accommodated by the proposed project would result in the alteration of drainage patterns during and after construction activities in some locations. This would entail land-disturbing construction activities, such as grading and excavation, construction of new building foundations, roads, driveways and trenches for utilities. In addition to direct drainage alterations, temporary ponding or flooding could also result

from such activities, reducing the water-carrying capacity of drainages, flood control facilities, storm drains, etc. Such drainage alterations and changes in runoff conditions must be reduced to prevent serious flooding risks from resulting. Siltation and debris buildup in these structures as the result of runoff could also decrease their effectiveness for stormwater management.

In addition to construction impacts, future development would also result in new land uses that would convert permeable surfaces (such as undisturbed soils and vacant lands) to impermeable surfaces, such as buildings (rooftops), parking lots and roadways. An increase in impermeable surfaces would substantially alter the existing drainage pattern of a site or area by increasing the amount and rate of surface runoff in a manner that could result in flooding on or off the site. Specific grading and project design measures, including the Best Management Practices (BMPs) required under the NPDES, are necessary to prevent runoff and flooding.

Additionally, impermeable surfaces and development would potentially divert natural runoff patterns potentially resulting in flooding. In undeveloped areas, rainfall collects and is stored by vegetation, in the soil and in surface depressions. When this storage capacity is filled, runoff filters slowly through the soil as subsurface flow. In contrast, developed areas where much of the land surface is covered by roads and buildings have less capacity to store rainfall. Impermeable surfaces such as roads, roofs, parking lots and sidewalks store little water, reduce infiltration of water into the ground and accelerate runoff to ditches and streams. Even in suburban areas where lawns and other permeable landscaping is common, rainfall can saturate thin soils and produce overland flow, which runs off quickly. As a result of accelerated runoff from development or construction activities, the peak discharge, volume and frequency of floods increase in nearby streams. To prevent this urban runoff from creating flood hazards, projects must be designed to direct and channel runoff appropriately into storm drain facilities adequately sized to handle expected flows. Such measures are, in fact, included as Conditions of Approval for implementing projects.

2. Regulatory Compliance for Impact 4.11.D

As detailed and explained below, compliance with the following laws, regulatory programs, General Plan policies and existing EIR No. 441 mitigation measures are sufficient to ensure that adverse effects associated with potential flooding resulting from urban runoff would be less than significant.

a. Compliance With Federal, State and County Regulations

Compliance with the following state, federal and county regulations would further prevent impacts due to alteration of drainage patterns, increased surface runoff and associated flooding risks. These include, but are not limited to, the federal Clean Water Act, the NPDES program and various Riverside County ordinances, as outlined under Impact 4.11.A, including Ordinance No. 457 and Ordinance No. 458. This also includes Ordinance No. 461 and Ordinance No. 754, which were outlined under Impacts 4.11.B and 4.11.C, respectively. Additional mitigating policies include the following:

Clean Water Act (CWA) Section 404: Compliance with this permitting program ensures that projects submit to the Army Corps proof that a development would not result in any illegal fill (that is, placing dirt or other materials) of waters of the U.S. This includes preventing hydrological changes that could result in scouring, vegetation destruction, flooding and other adverse effects that could "pollute" waters of the U.S., which are overseen by the Army Corps. Compliance with this process ensures that no development is allowed to cause flooding or runoff impacts due to illegal or improper fill or construction within existing jurisdictional drainages. Compliance with the 404 permitting process also requires legal and proper fill be properly designed, engineered,

constructed and maintained, including the use of storm runoff systems, to control and properly channel urban runoff.

National Pollution Discharge Elimination System (NPDES): Under the NPDES, programs and permits are enforced by the applicable RWQCB. In particular, the Storm Water Pollution Prevention Program (SWPPP) requires BMPs to reduce potential stormwater and urban runoff impacts, as well as erosion impacts, from construction and developed sites. Accordingly, compliance with permit requirements, including a variety of BMPs, ensures that such adverse impacts are avoid or minimized to less than significant levels. The program is further implemented and monitored by the County of Riverside pursuant to Ordinance No. 754, which was described under the previous impact (4.11.C).

Under the NPDES permit program, Stormwater Pollution Prevention Plans (SWPPP) are required, for construction sites greater than one acre. This includes the identification and implementation of a variety of BMPs to reduce the likelihood of flooding, increased runoff or related impacts. (Sites under an acre are not significant sources of runoff.) Such BMPs can include the following:

a. Clearing of land is limited to that which will be actively under construction in the near term, new land disturbance during the rainy season is minimized and disturbance to sensitive areas or areas that would not be affected by construction is minimized.

b. Temporary stabilization of disturbed soils is provided whenever active construction is not occurring on a portion of the site and permanent stabilization is provided by finish grading and permanent landscaping.

c. Outside of the approved grading plan area, disturbance of natural channels is avoided, slopes and crossings are stabilized and any increase in runoff velocity is managed (through force dissipaters or other mechanisms) to avoid erosion of slopes and channels.

d. Upstream runoff is diverted around or safely conveyed through the site and is kept free of excessive sediment and other constituents.

e. Sediment-laden waters from disturbed, active areas within the site are detained.

b. Compliance with Existing General Plan Policies

The following existing General Plan policies would further prevent impacts related to drainage pattern and runoff alterations that could cause flooding. See Section 4.11.3.E for the full text of these policies.

Policy S 4.4: This policy prohibits the alteration of floodways and channelization, thereby maintaining and preventing the alteration of existing drainage patterns. The policy also allows for incentive provisions such as density transfers to be offered in an effort to maintain natural watercourses and to focus development away from these critical resources.

Policy S 4.5: This policy prohibits substantial modifications to watercourses and subsequently protects existing drainage patterns. When modifications are unavoidable, those modifications must not be detrimental to adjacent properties or adversely affect adjacent wetlands or riparian habitat.

Policy S 4.7: This policy requires potential modifications to watercourses to be done in a manner that is the least damaging to the environment, thereby reducing potential adverse impacts related to drainage pattern and runoff alterations.

Policy S 4.8: This policy allows developments along the floodway fringe only if it has been determined that the proposed structures can be flood-proofed and would not contribute to property damage or risks to public safety, thereby reducing potential adverse impacts.

Policy S 4.9: This policy reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring those proposed developments that fall within the floodway fringe be capable of withstanding flooding and use a minimum amount of fill for the project, thereby directly reducing potential impacts and protecting developments, such as housing projects, within floodplains and other flood areas.

Policy S 4.10: This policy requires all development proposals to mitigate their potential impacts on the capacity of regional storm drain systems.

3. Finding on Significance for Impact 4.11.D

Compliance with the above regulations and policies would ensure that flooding hazards associated with alterations to existing drainage patterns or increases in surface runoff as a result of future development would be less than significant. No project-specific mitigation is required.

E. Would the project result in or expose people or structures to a significant risk of inundation due to seiche, tsunami or mudflow?

Impact 4.11.E – Cause Inundation Risks Due to Seiche, Tsunami or Mudflow: Future development in areas subject to seiche has the potential to threaten people, structures and property. In terms of seiche hazards, there is no documented significant potential for any of the waterbodies within Riverside County. Based on morphology and hydrology, two waterbodies in Riverside County (Lake Perris and Lake Elsinore) may have the potential for seismically induced seiche. However, setbacks and flood hazard area regulations would be sufficient to protect against significant risks. Thus, for the proposed project, resultant future development along or near lakes and reservoirs is considered to be at minimal risk. Thus, overall, seiche impacts would be less than significant. Due to its inland location, by definition there are no tsunami risks in Riverside County. Mudflow or debris flow can occur in areas with steep slopes, particularly areas with loose soils and/or denuded of vegetation (e.g., fire burn areas) when exposed to large amounts of precipitation. Narrow canyons, arroyos and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or the improper diversion of runoff from a developed area. When addressed through proper soil engineering, site design and maintenance, these risks are less than significant.

1. Analysis of Impact 4.11.E

a. Seiche

Seiche, a standing wave in a completely or partially enclosed body of water, can in certain circumstances result in inundation (flooding) of areas located along the shoreline of a lake or reservoir. In Riverside County's semi-arid climate, naturally occurring enclosed water bodies are not common and none have documented seiche risks. For man-made water bodies, such as reservoirs, these are typically built by local municipalities or water districts to provide water service to local residents and businesses. Accordingly, most land around the reservoirs' shorelines is in public holdings, which restrict private land development and minimize risk of inundation from seiche. Moreover, such public land holdings are not within the jurisdiction of unincorporated Riverside County.

In terms of seiche hazards, there are no significant documented hazards for any of the waterbodies within Riverside County. However, based on morphology and hydrology, two waterbodies in Riverside County, Lake Perris and Lake Elsinore, may have the potential for seismically induced seiche (essentially creation of a standing wave that 'sloshes' back and forth along the lake's long axis causing higher than expected waves and potentially even flooding). Seiche risk at Lake Perris, however, is minor due to the lack of significant habitable structures along its shores. In addition, Lake Perris, as with most of the large, man-made reservoirs in Riverside County, has been engineered to prevent seiche risks. The larger, recreational-use lakes are also buffered by public lands and beaches along their shores, adding a further layer of protection from localized flooding.

Development does occur along the shores of Lake Elsinore, in particular the Lakeland Village community. However, seiche risks to future development would be minimized by avoidance of the 100-year floodplain limits surrounding the lake (or engineering sufficient to withstand potential flood hazards, as allowed under law for certain uses). Thus, for the proposed project, resultant future development along or near lakes and reservoirs is considered to be at minimal risk. None of the other land use-related changes proposed under GPA No. 960 are within areas affected by potential seiche hazards. There are no oceanic tsunami risks in Riverside County due to its inland location.

b. Mudflows and Debris Flows

Mudflows and debris flows are shallow water-saturated landslides that travel rapidly down slopes carrying rocks, brush and other debris. A mudflow occurs naturally as a result of heavy rainfall on a slope containing loose soil or debris. There is a high potential for mudflows to occur in some areas of unincorporated Riverside County as a result of large amounts of precipitation in a relatively small time frame. Unincorporated Riverside County contains many areas with steep slopes and mountainous areas that could be subject to mudflows in the event of large amounts or precipitation. Narrow canyons, arroyos, alluvial fans and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or the improper diversion of runoff from a developed area.

In terms of mudflow hazards, areas of proposed land use-related changes with the potential for introducing or intensifying future development are generally at risk for mudflow hazards if they are: on or below a steep or unstable slope; within a steep-sided canyon; within an area with flashflood potential; on loose, unconsolidated soils; or in an area denuded of vegetation by recent wildfire, particularly if any of the other factors also occur. Flashflood potential generally exists along any canyon, swale or other low-lying area in which heavy precipitation fall may be channeled rapidly and unexpectedly. Risks to future development as a result of flashflood are minimized through the various regulatory floodplain and drainage flow control measures (as discussed above for Impacts 4.11.A, 4.11.B and 4.11.C, for example).

As with other types of serious flooding, FEMA also designates areas as subject to alluvial fan flooding (as opposed to ordinary riverine flooding). Specifically, NFIP regulations define alluvial fan flooding to be "flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport and deposition; and, unpredictable flow paths." Despite the distinction, alluvial fan flooding is also based on the 100-year flood interval (i.e., a 1% probability of occurrence in a given year). As such, the site design and engineering requirements established for 100-year flood hazard area management, for example under Riverside County Ordinance No. 458, generally provides sufficient measures to ensure the protection of development on alluvial fans.

2. Regulatory Compliance for Impact 4.11.E

The analysis above and in Section 4.11.5 demonstrates that this impact would be less than significant and no project-specific mitigation is needed. Moreover, with the various regulations, programs, plans, General Plan policies and existing mitigation measures from prior EIR No. 441 summarized under the previous four, impacts will further reduce or minimize this already insignificant impact. In particular, General Plan Policy S 4.5 directly reduces potential erosion-related flood hazards, such as surface runoff and mudflow, by prohibiting watercourse modification that could result in seiche hazard. A variety of additional General Plan policies also reduce potential flooding, floodplain management, safety and other related impacts.

3. Finding on Significance for Impact 4.11.E

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts due to seiche. No project-specific mitigation is required. As outlined in this section, plus section 4.12, project design, soils engineering and construction requirements, including NPDES, CWA section 404, Riverside County ordinances and others would be sufficient to ensure that mudflow hazards are less than significant. In addition, compliance with various existing regulatory programs, standards and General Plan policies, as well as existing mitigation measures from EIR No. 441 as outlined elsewhere in this section, would further reduce, minimize or avoid any impacts associated with the project.

4.11.7 Significance After Mitigation for Flood and Dam Inundation Hazards

Implementation of and compliance with the above existing regulations, programs, County General Plan policies and existing mitigation measures from EIR No. 441 would ensure that impacts associated with flooding and dam inundation hazards, as well as related issues outlined herein, are minimized and would prevent any impacts from rising to a potentially significant level. These measures avoid flood hazards by keeping development out of flood-prone areas and requiring adequate engineering and other protective measures be used where necessary to ensure the safety of people and property. They also ensure that any future development designs, constructs and maintains appropriate flood control and safety features. Where such avoidance or engineering is not possible, existing regulations prohibit development. In total, these measures ensure that any adverse impacts associated with flooding, dam inundation and related risks associated with the proposed project, GPA No. 960, would be less than significant. Moreover, no project-specific mitigation is required.

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Section 4.12

Geology and Soils

Section 4.12 Geology and Soils

This section assesses the potential impacts on and from geology and soils that could arise from disturbances and impacts resulting from future development consistent with the General Plan as updated by GPA No. 960, the proposed project.

4.12.1 Existing Environmental Setting – Geology and Soils

While the County of Riverside is at risk from many natural and man-made hazards, the event with the greatest potential for loss of life or property and economic damage is an earthquake. This is true for most of Southern California, since damaging earthquakes are frequent, affect widespread areas, trigger many secondary effects and can overwhelm the ability of local jurisdictions to respond. In Riverside County, earthquake-triggered geologic effects that may occur include groundshaking, fault rupture, landslides, liquefaction, subsidence and seiche, all of which are discussed below. Earthquakes can also cause human-made hazards, such as urban fires, dam failure and toxic chemical releases.

Earthquakes are caused by movement of rock along a break called a fault. The movement releases pent up strain energy in the form of waves which travel outward in all directions. These seismic waves cause the earth to vibrate and this shaking is what we feel in an earthquake. Most earthquakes occur along plate boundaries. The outer portion of the Earth consists of enormous chunks of rock called plates, which slowly collide, separate and grind past each other. Frictional forces resist plate movement and the plate edges lock together. Much strain energy builds up as the plates keep trying to move. Eventually, frictional forces are exceeded, the locked edges move and all the stored strain energy is released in seismic waves.

Earthquake risk is very high in the heavily populated western portion of Riverside County due to the presence of three of California's most active faults: the San Andreas, the San Jacinto and the Elsinore. Risk is moderate in the eastern portion of the county which includes the Coachella Valley and Blythe.

In California, recent earthquakes in or near urban environments have caused relatively few casualties. This is due more to luck than design. For example, when a portion of the Nimitz Freeway in Oakland collapsed at rush hour during the 1989 moment magnitude (M_w) 7.1 Loma Prieta earthquake, it was unusually empty because many were watching the World Series. Nonetheless, California's urban earthquakes have resulted in significant economic losses. Riverside County is at risk from larger, more damaging earthquakes than the moderate sized, M_w 6.7 Northridge earthquake, which in 1994 caused 54 deaths and $20 to $30 billion in damage.

A. Baseline Data Sources

The existing setting discussion herein is summarized from Section 5.2 of the 1999 Existing Setting Report prepared for the 2003 RCIP Riverside County General Plan and its Appendix H, "Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Safety Element of the New Riverside County 2000 General Plan" ("Appendix H" herein). Pursuant to CEQA, the description of the physical environmental conditions provided in this EIR is as they exist at the time the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting constitutes the baseline physical conditions by which the County, as Lead Agency under CEQA, determines whether an impact is significant. However, for geology, soils and seismicity, the 1999 Existing Setting Report and Appendix H remain relevant to existing conditions within the county because geologic conditions change very slowly with time and no major earthquakes have occurred within the study area since the reports were prepared. For this reason, these documents were found to adequately represent the county baseline existing geological and seismic conditions.

The various seismic, soils and geology information presented graphically in this section are from the Riverside County GIS Department, generally the Riverside County Land Information System (RCLIS) database, as updated by various means, including through information provided by the State of California (see discussion under Section 4.12.4) and by direction of the Riverside County Geologist in relation to geologic and seismic studies prepared for proposed development sites within the county and submitted to the Riverside County Geologist. Because they are county specific, these data sources were determined to be the best-supported substantial evidence available and were used herein. The sources for the various land use and environmental data sets used in this section are described in their respective sections.

B. Fault Hazard Zones

Primary ground damage due to earthquake fault rupture typically results in a relatively small percentage of the total damage in an earthquake, but being too close to a rupturing fault can cause profound damage. It is difficult to reduce this hazard through structural design. The primary mitigating technique is to set back from and avoid active faults. The challenge comes in identifying all active faults *that could potentially rupture*. Faults throughout Southern California have formed over millions of years. Some of these faults are generally considered inactive in terms of present geologic conditions. Other faults are known to be active, meaning either they have generated earthquakes in historical times (the last 200 years) or show geologic and geomorphic indications of relatively recent movement. Faults that have moved in the relatively recent geological past are generally presumed to be the most likely candidates to generate damaging earthquakes in the lifetimes of residents, buildings and communities.

Earthquakes in Southern California occur as a result of movement between the Pacific and North American plates. Faults of the San Andreas system are used to mark the boundary between these plates, but the deformation, faulting and associated earthquakes occur in a broadly distributed zone that stretches from offshore to Nevada. Thus, the San Andreas is one of a system of plate-bounding faults. Most of the movement between the plates occurs along the San Andreas Fault, which bisects Riverside County. The rest of the motion is distributed among northwest-trending, strike-slip faults of the San Andreas system (principally the San Jacinto, Elsinore, Newport-Inglewood and Palos Verdes faults), several east-trending thrust faults that bound the Transverse Ranges and the Eastern Mojave Shear Zone (a series of faults east of the San Andreas, responsible for the 1992 Landers and the 1999 Hector Mine earthquakes).

Pursuant to state law (see Section 4.12.2), Alquist-Priolo (A-P) Earthquake Fault Zones have been designated by the California Geologic Survey for the Elsinore, San Jacinto and San Andreas fault zones in Riverside County (see Figure 4.12.1 (Alquist-Priolo Fault Zones)). Additionally, the County of Riverside has developed and applied

special studies zone criteria for the Agua Caliente fault zone between the Elsinore and the San Jacinto faults in southwestern Riverside County. All of these faults have high rates of displacement and are rapidly accumulating strain energy which will be released in earthquakes. Inevitably, the A-P Zone will expand with time. As faults are studied, more splays are discovered.

C. Groundshaking

For design and environmental analysis purposes, a worst-case scenario earthquake (the maximum credible earthquake [MCE]) for Riverside County is a magnitude 7.9, based on the rupture of the entire southern segment of the San Andreas Fault from the Cajon Pass to the Salton Sea. While other scenarios would expose portions of Riverside County to intense groundshaking that is locally as severe as the MCE, the MCE exposes most of the county to very high-intensity groundshaking.

Groundshaking is simply the movement of the earth resulting from an earthquake. Shaking can cause lateral movement and is the primary reason for collapse of buildings. The strength of seismic groundshaking at any given site is a function of many factors.

Factors of primary importance in groundshaking severity include the size of the earthquake, its distance, the paths the seismic waves take as they travel through the earth, the type of rock or soils underlying the site and topography (particularly whether a site sits in a valley or atop a hill). The amount of resulting damage also depends on the size, shape, age and engineering characteristics of affected structures. Interactions between ground motion and man-made structures are complex. Governing factors include a structure's height, construction and stiffness; a soil's strength and resonant period; and the period of high-amplitude seismic waves. Waves come in different lengths and thus repeat their motions with varying frequency. Long waves are called long-period or low-frequency. Short waves are short-period or high-frequency. In general, long-period seismic waves, which are characteristic of large earthquakes, are most likely to damage long-period structures such as high-rise buildings and bridges. Shorter period seismic waves, which tend to die out quickly, will most often cause damage near the epicenter of the earthquake, damaging structures such as one-story and two-story buildings. Very short period waves are most likely to cause nonstructural damage, such as to equipment. In different situations, ground displacement, velocity and acceleration can all cause damage.

Estimates of several key groundshaking parameters near the fault rupture zone for the Riverside MCE, expressed as a percentage of gravity, are presented in Table 4.12-A (Probable Earthquake Scenarios for Riverside County). Peak ground acceleration, which is the maximum acceleration achieved at a site, often turns out to be the earthquake effect that predicates the most damage to buildings. Wave periods of 0.3 second and 1.0 second are the lengths of seismic waves that commonly damage structures. All of these values are well above the threshold for heavy damage.

Table 4.12-A: Probable Earthquake Scenarios for Riverside County

Event		Maximum Magnitude (M_w)	Chance of Occurring in 30 Years	Comments
Fault	**Segment**			
San Andreas	San Bernardino	7.3	28%	Very high intensity groundshaking throughout the San Bernardino Valley, including north central Riverside County.
San Andreas	Coachella	7.1	22%	Very high intensity groundshaking throughout the Coachella Valley, affecting desert resort communities and agriculture.

Event		Maximum Magnitude (M_w)	Chance of Occurring in 30 Years	Comments
Fault	**Segment**			
San Jacinto	San Jacinto Valley	6.9	43%	Highest probability of occurrence of any Southern California fault. Brought closer to failure as a result of stress field changes caused by the 1992 Landers earthquake.
San Jacinto	Anza Segment	7.2	17%	This event would be very destructive within the communities of Hemet and San Jacinto.
Elsinore	Temecula Segment	6.8	16%	Has not produced any significant earthquakes in historic time.
Elsinore	Glen Ivy Segment	6.8	16%	Would be very destructive in the communities of Lake Elsinore, Murrieta and Temecula.
Whittier	Whittier	6.8	5%	Has not broken in over 1,600 years (WGCEP, 1995). Would cause significant landslide and lifeline damage in the Chino Hills - Corona area.

Notes: Maximum Magnitude: the magnitude of an earthquake event based on the amount of energy released. This measurement is more accurate for large earthquake events.
Source: Riverside County General Plan, Appendix H - Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Riverside County General Plan, 2000.

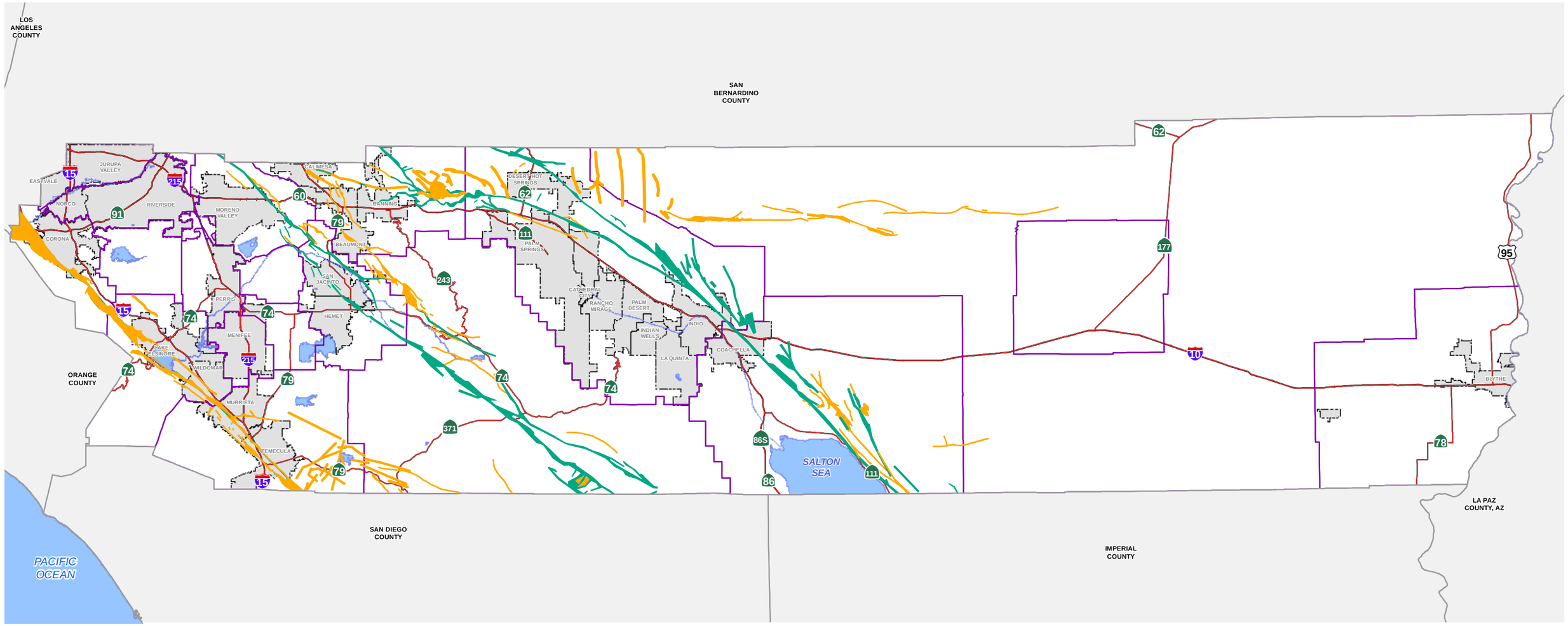
A set of design parameters for the MCE are used to estimate the damage and losses that could occur for such an earthquake (see General Plan Appendix H). With horizontal ground displacements as great as 25 feet along the fault and intense groundshaking that could last more than 60 seconds, damage and losses in Riverside County as a result of the MCE or other major San Andreas Fault earthquakes would be extensive. In addition, Riverside County must consider events on several faults. Earthquakes that are likely to occur during the design life of most buildings could be generated by segments of the Elsinore, San Jacinto or San Andreas faults. These have been evaluated by the Working Group on California Earthquake Probabilities (1995), as illustrated in Figure 4.12.2 (Earthquake Probability).

Based on this segmentation, there are seven types of probable earthquakes that threaten Riverside County (see Table 4.12-A). The event with the greatest probability of occurrence in 30 years (43%) is a maximum magnitude (M_w) 6.9 rupture of the San Jacinto Valley segment of the San Jacinto fault. The San Jacinto event is considered the maximum probable event (MPE), the scenario deemed most *likely* to occur for Riverside County (in contrast to the MCE, which is the *worst* expected earthquake).

D. Liquefaction

Liquefaction is a process by which water-saturated materials (including soil, sediment and certain types of volcanic deposits) lose strength and fail during strong groundshaking. Specifically, liquefaction is defined as "the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure." Liquefaction occurs worldwide, commonly during moderate to great earthquakes. Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation and loss of bearing strength. In California, liquefaction-related ground failures were major components of the following events:

- 1857 Fort Tejon earthquake
- 1906 San Francisco earthquake
- 1933 Long Beach earthquake



Data Source:County Geology (2013)/California Geological Survey (2008)

Fault Zones

- Alquist-Priolo
- Riverside County
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.12.1

December 16, 2013

Miles
0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

ALQUIST-PRIOLO FAULT ZONES

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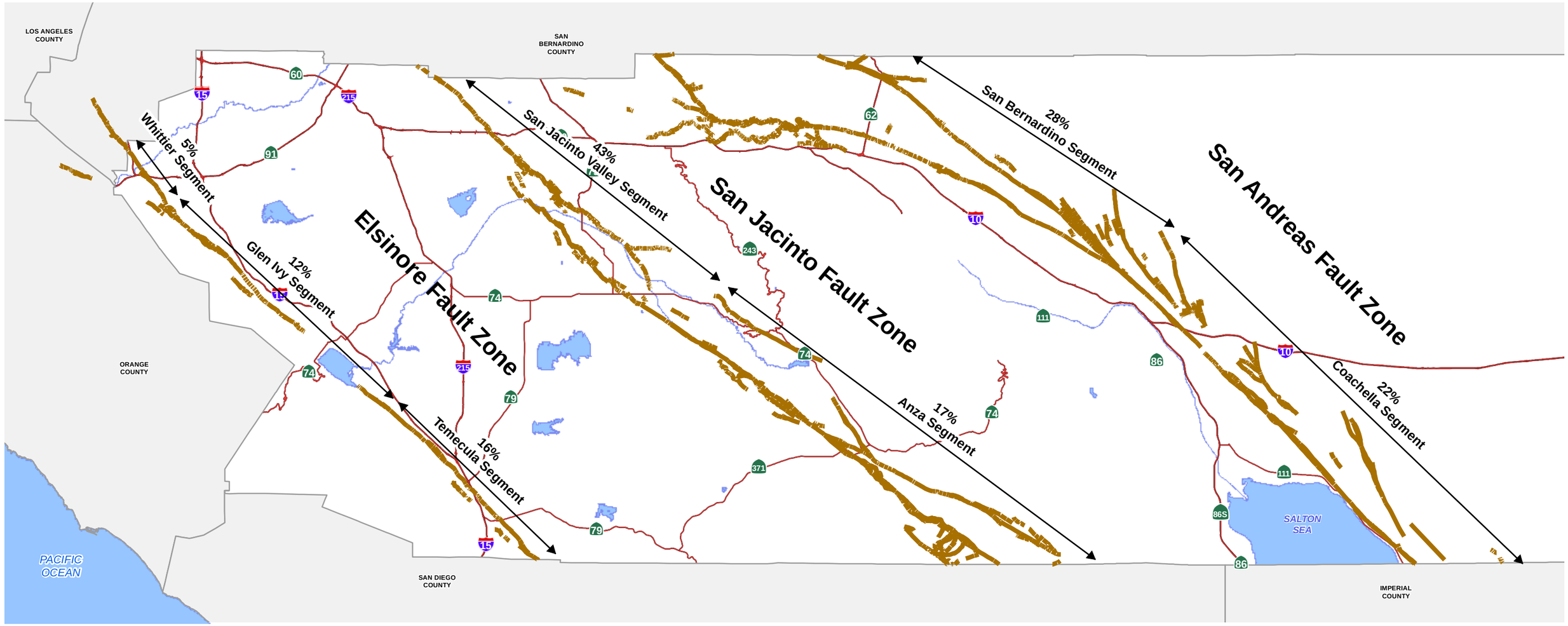

Data Source: California Geological Survey (2003)

Faults

Faults
Highways
Waterbodies

17%
Anza Segment

Probability (%) of an earthquake occuring on a fault segment in the next 30 years

Figure 4.12.2

December 16, 2013

Miles
0 5 10

EARTHQUAKE PROBABILITY

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- 1971 San Fernando earthquake
- 1973 Point Mugu earthquake
- 1979 and 1981 Imperial Valley earthquakes
- 1989 Loma Prieta earthquake
- 1994 Northridge earthquake.

In 1997 and 1998, the California Geological Survey (CGS) developed guidelines for delineating, evaluating and mitigating seismic hazards in California. In 1999, a sponsored group published "Recommended Procedures for Implementation of CGS Special Publication 117 Guidelines for Analyzing and Mitigating Liquefaction in California." In it, Liquefaction Hazard Zones are defined as areas meeting one or more of the following criteria:

- Areas known to have experienced liquefaction during historic earthquakes.
- All areas of uncompacted fills containing liquefaction-susceptible material that are saturated, nearly saturated, or may be expected to become saturated.
- Areas where sufficient existing geotechnical data and analyses indicate that the soils are potentially liquefiable.

Areas within Riverside County susceptible to liquefaction hazards are depicted in Figure 4.12.3 (Liquefaction Zones). The characteristics of the various liquefaction hazard zones are detailed in Table 4.12-B (General Liquefaction Potential Zones for Riverside County).

Table 4.12-B: General Liquefaction Potential Zones for Riverside County

Rank	Groundwater Depth[2]	General[3] Sediment Type	Recommended Policies[1]	
			General Construction	Critical[4] Facilities
High	< 30 feet	Very Susceptible	Study Required	Study Required
Moderate	< 30 feet	Susceptible	Study Required	Study Required
	30-50 feet	Very Susceptible	Study Required	Study Required
Low	> 30 feet	Susceptible	None	Study Required
Very Low	30-50 feet	Susceptible	None	Study Required
	50-100	Very Susceptible	None	Study Required
Extremely Low	50-100 feet	Susceptible	None	Study Required
None	> 100 feet	Susceptible	None	None
	No data	Bedrock	None	None

Footnotes:
1. Groundshaking potential in easternmost Riverside County is considered below the threshold for liquefaction and site-specific investigations should not be required for general construction projects.
2. Groundwater depth is based on the historic high measurement.
3. Very susceptible sediment type includes generally granular Holocene sediments; susceptible includes generally granular Pleistocene sediments.
4. Critical facilities are facilities designed to remain functional during and immediately after an earthquake.

Source: Riverside County General Plan, Appendix H - Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Riverside County General Plan, 2000.

E. Landslides and Rock Falls

Hillsides, generally speaking, can be unstable platforms for development. Unless a landslide is already occurring, a steep slope can generally be thought of as existing in a state of equilibrium. When this equilibrium is disturbed by development in hillside areas, the likelihood of slope failure, soil erosion, silting of lower slopes and downstream flooding increases.

There are predictable relationships between local geology and mass-wasting processes like landslides and rockfall. Slope stability is dependent on many factors and their interrelationships. Rock type and poor water pressure are possibly the most important factors, followed by slope steepness due to natural or man-made undercutting. In addition, many existing landslides and soil slumps have been mapped within Riverside County. Where slopes have failed before, they will fail again. Field investigation enables identification of failure-prone slopes before an earthquake occurs. Factors controlling the stability of slopes include the following:

- Slope height and inclination
- Engineering characteristics of the earth materials comprising the slope
- Intensity of groundshaking

Seismically induced landslides and rockfall would be expected throughout Riverside County in the event of a major earthquake. Factors contributing to the stability of slopes include slope height and steepness, engineering characteristics of the earth materials comprising the slope and intensity of groundshaking. It is estimated that a ground acceleration of at least 0.10 g in steep terrain is necessary to induce earthquake-related rockfall, although exceeding this value does not guarantee that rockfall will occur. Because there are several faults capable of generating peak ground accelerations of over 0.10 g in Riverside County, there is a high potential for seismically-induced rockfall and landslides to occur. Figure 4.12.4 (Steep Slopes) shows areas of steep slopes within Riverside County.

F. Seismically Induced Ground Settlement

Whether or not seismically induced settlement will occur depends on the intensity and duration of groundshaking, and the relative density of the subsurface soils (i.e., the ratio between the in-place density and the maximum density). Sediments in the alluvial valleys of Riverside County were deposited fairly rapidly, which may lead to conditions of low density sediments that can settle in an earthquake. Therefore, many of the valley regions that contain relatively recent sediments may be susceptible to some degree of seismic settlement. The extent of relatively young sediments with moderate to locally high potential for settlement may be correlated with areas of valley fill represented on subsidence susceptibility mapping.

As demonstrated by past earthquakes, seismic settlement is primarily damaging in areas subject to differential settlement. As an example, this can include cut-and-fill transition lots built on hillsides where a portion of the house is built over an area cut into the hillside with the remaining portion of the house on man-made fill. During an earthquake, even slight settlement of the fill (soil) can cause a structure to raise or lower differentially, leading to significant repair costs.

G. Subsidence and Collapsible Soils

Ground subsidence is typically a gradual settling or sinking of the ground surface with little or no horizontal movement, although fissures (cracks and separations) are common. Subsidence can range from small or local collapses to broad regional lowering of the earth's surface. While subsidence typically occurs throughout a susceptible valley, additional displacement and fissures occur at or near the valley margin. Susceptible valleys are those predominantly filled with unconsolidated sand and silty sand that includes thin layers of silt and clayey silt. Fine-grained alluvium and organic matter often underlie the fissure areas. Two types of fissures are associated with subsidence. The first is generally straight and corresponds to the traces of faults, while the second is more curvilinear on the surface and appears to correspond to the alluvium-bedrock contact at valley margins.

The causes of subsidence are as diverse as the forms of failure. They include dewatering of peat or organic soils, dissolution in limestone aquifers, first-time wetting of moisture-deficient, low-density soils (hydrocompaction), natural compaction, liquefaction, crustal deformation, subterranean mining and withdrawal of fluids (groundwater, petroleum, geothermal, etc.). Most of the damaging types of subsidence are induced by the extraction of oil, gas or groundwater from below the ground surface or the organic decomposition of peat deposits, with a resultant loss in volume. Ground subsidence can also occur as a response to natural forces, such as earthquake movements and the evolution of a sedimentary basin as it folds and subsides. And, of course, earthquakes can cause abrupt elevation changes of several feet.

Ground subsidence can disrupt surface drainage, reduce aquifer system storage, form earth fissures and damage wells, buildings, roads and utility infrastructure. Regional subsidence generally damages structures that are sensitive to slight changes in elevations, such as canals, sewers and drainages. In Riverside County, risk of damage or harm due to regional subsidence is greatest at valley margins.

Subsidence and fissuring have been caused by falling groundwater tables and by hydrocollapse when groundwater tables rise in Riverside County. In addition, many fissures have occurred along active faults that bound the San Jacinto Valley and Elsinore Trough. Figure 4.12.5 (Documented Subsidence Areas) depicts areas of documented subsidence and other areas of Riverside County that may be susceptible to subsidence. Subsidence has only been documented in three areas of the county: the Elsinore Trough, including Temecula and Murrieta; the San Jacinto Valley from Hemet to Moreno Valley; and the southern Coachella Valley.

These areas are all potentially sensitive to the withdrawal of groundwater. Depending on the depth and mechanical properties of the aquifer and the overlying sediments, they can subside if groundwater resources are not managed properly. Mitigation of ground subsidence usually requires a regional approach to groundwater conservation and recharge. Such mitigation measures are difficult to implement if the geology of the aquifer and overlying sediment is not well understood. Furthermore, conservation efforts can be quickly offset by rapid growth and attendant heavy water requirements (golf courses, for example, consume about 8 acre-feet of water per acre per year). Further, it is not uncommon for several jurisdictions to utilize a continuous groundwater aquifer. Mitigation requires regional cooperation among all agencies.

Hydroconsolidation, or soil collapse, typically occurs in recently deposited Holocene (less than 10,000 years before present time) soils that were deposited in an arid or semi-arid environment. Soils prone to collapse are commonly associated with man-made fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. Particles of these soils, which typically contain minute pores and voids, may be partially supported by clay or silt, or chemically cemented with carbonates. When saturated, collapsible soils undergo rearrangement of their grains and the water removes the cohesive (or cementing) material, and a rapid, substantial settlement may occur. An increase in surface water infiltration (such as from irrigation) or a rise in the

groundwater table, combined with the weight of a building or structure, may initiate settlement, causing foundations and walls to crack.

In Riverside County, collapsible soils occur predominantly at the bases of the mountains, where Holocene-aged alluvial sediments have been deposited during rapid runoff events. Additionally, some windblown sands may be vulnerable to collapse and hydroconsolidation. Typically, differential settlement of structures occurs when lawns or plantings are heavily irrigated in close proximity to a structure's foundation.

H. Expansive Soils

Expansive soils have a significant amount of clay particles that can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The occurrence of these soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed and they can occur in hillside areas as well as low-lying alluvial basins.

Although expansive soils are now routinely alleviated by following the Riverside County Building Code, problems related to past inadequate grading or site preparation practices constantly appear. Expansive soils are not the only cause of structural distress in existing structures. Poor compaction and construction practices, settlement and landslides can cause similar damage, but require different mediation efforts. Once expansion has been verified as the source of the problem, mitigation can be achieved through reinforcement of the existing foundation or through the excavation and removal of the expansive soils in the affected area.

I. Wind Erosion

Wind erosion damages land and natural vegetation by removing soil from one place and depositing it in another. It mostly affects dry, sandy soils in flat, bare areas, but wind erosion may occur wherever soil is loose, dry and finely granulated. It causes soil loss, dryness, deterioration of soil structure, nutrient and productivity losses, air pollution and sediment transport and deposition. The presence of dust particles in the air is a source of several major health problems. Atmospheric dust causes respiratory discomfort, may carry pathogens that cause eye infections and skin disorders, and reduces highway and air traffic visibility. Buildings, sheds, fences, roads, crops, trees and shrubs can all be damaged by blowing soil, which acts as an abrasive.

Wind and windblown sand are an environmentally limiting factor throughout much of Riverside County. Approximately 20% of the land area of Riverside County is vulnerable to high and very high wind erosion susceptibility. The Coachella Valley, the Santa Ana River channel and areas in the vicinity of the City of Hemet have been identified as zones of high wind erosion susceptibility. Areas susceptible to wind erosion hazards throughout Riverside County are identified in Figure 4.12.6 (Wind Erosion Susceptibility Areas).

Windblown sand is a well-recognized hazard for developments in the Coachella Valley. It has even forced abandonment of dwellings and subdivided tracts in the central Coachella Valley. The primary source of sand in the Coachella Valley is the Whitewater River. Increases in the amount of windblown sand are related to episodic flooding of the Whitewater River. A 15-fold increase in wind erosion rates in the Coachella Valley has been documented following heavy flood events. Therefore, mitigation of windblown sand is directly related to mitigation of flood potential on the Whitewater River.

Because windblown sand from the Whitewater River floodplain provides a large component of the sand that sustains dune fields that, in turn, are home to several endangered species, erosion intervention efforts must be cautiously considered.

J. Soil Erosion and Loss of Topsoil

Soil erosion is the process by which soil particles are removed from a land surface by wind, water or gravity. Most natural erosion occurs at slow rates; however, the rate of erosion increases when land is cleared or altered and left in a disturbed condition. The primary factors that influence erosion include soil characteristics, vegetative cover, topography and climate.

Soil characteristics that determine the erodibility of a soil are particle size and gradation, organic content, soil structure and soil permeability. Soils with a high proportion of silt and very fine clays are generally the most erodible. Organic matter creates a favorable soil structure, improves soil stability and permeability, which increases the soil's capacity for the infiltration of water, delays the start of erosion and reduces the amount of runoff. In addition, the less permeable the soil, the higher the likelihood for erosion. Vegetative cover aids erosion control by shielding the soil surface from the impact of falling rain or blowing wind. Vegetation slows the velocity of runoff, permits greater infiltration, maintains the soil's capacity to absorb water and holds soil particles in place.

Topography and the length and steepness of slopes are crucial to determining the volume and velocity of runoff. As slope length and/or steepness increases, the rate of runoff increases and the potential for erosion is magnified. Climate is a fundamental factor affecting the potential for soil erosion. When and where precipitation is frequent, intense or prolonged, the potential for soil erosion is increased.

K. Reducing Earthquake Hazards in Riverside County

Changes in the 1997 Uniform Building Code (UBC), encapsulated in the California Building Standards Code (California Code of Regulations [CCR] Title 24, in particular Part 2 which encompasses the California Building Code [CBC]) represent the most significant increases in groundshaking criteria in the last 30 years. Two changes have special significance for the County of Riverside. The first change is a revision in soil types and amplification factors. The second change incorporates the proximity of earthquake sources in UBC seismic zone 4 (refer to Figure 4.12.7 for the near-source zones that affect Riverside County). Zone 4 is the highest hazard zone and includes most of the County of Riverside. The Riverside County Department of Building and Safety defines the UBC seismic zones in the county as follows:

> *The townships T2SR16E, T3SR17E, T4SR18E, T5SR19E, T6SR20E, T7SR21E, T8SR22E are inclusive to the UBC Seismic Zone-4 and the townships lying east of listed above may be considered in the Seismic Zone-3.*

Low-rise buildings with a short predominant period of groundshaking must also consider soil effects. In the past, only long-period structures (high-rises) were influenced by UBC requirements. The groundshaking basis for code design is more complicated, because of the wide range of soil types and the close proximity of seismic sources. The new soil effects are based on observations made as a result of the Mexico City and Loma Prieta earthquakes, and affect all new buildings in western and central Riverside County. Most of the western and central portions of Riverside County are affected by the new, near-source design factors. The 1997 UBC contains detailed descriptions of the incorporation of the new near-source and soil parameters.

As shown in Figure 4.12.7 (Near Source Zone Regions UBC Zone Boundary), most of the western and central portions of Riverside County are subject to near-source design factors based on the proximity of three major fault systems (Elsinore, San Jacinto and San Andreas), as well as some smaller fault systems (Chino-Central Avenue, Burnt Mountain and Eureka Peak). These parameters, new to the 1997 UBC, address the proximity of potential

earthquake sources (faults). Groundshaking that was far more intense than expected occurred near the fault ruptures at Northridge in 1994 and at Kobe, Japan, in 1995. The 1997 UBC also includes a near-source factor that accounts for directivity of fault rupture. The direction of fault rupture played a significant role in distribution of groundshaking in both quakes. For Northridge, much of the earthquake energy was released into the sparsely populated mountains north of the San Fernando Valley. While at Kobe, however, the rupture directed energy into the city and contributed to extensive damage. Since the rupture direction of a given source cannot be predicted, the UBC requires roughly a 20% general increase in estimated groundshaking to account for directivity.

4.12.2 Policies and Regulations Addressing Geology and Soils

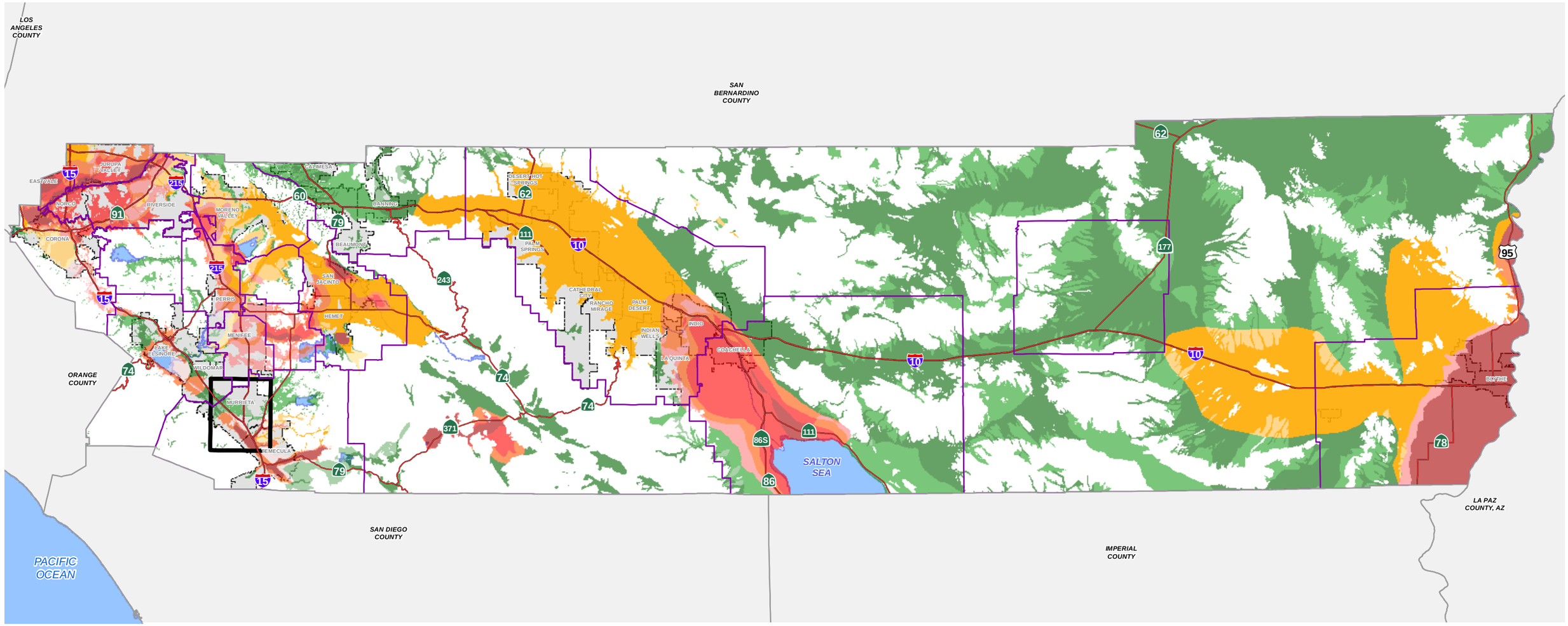
A. State and Federal Regulations

Alquist-Priolo Earthquake Fault Zoning Act (A-P Act): The major state legislation regarding earthquake fault zones is the Alquist-Priolo Earthquake Fault Zoning Act. In 1972, the State of California began delineating "Earthquake Fault Zones" (called "Special Studies Zones" prior to 1994) around and along faults that are "sufficiently active" and "well defined" to reduce fault-rupture risks to structures for human occupancy (Public Resources Code [PRC] Sections 2621–2630). The boundary of an Earthquake Fault Zone is generally 500 feet from major active faults and 200-300 feet from well-defined minor faults. The mapping of active faults has been completed by the State Geologist and these maps are distributed to all affected cities, counties and state agencies for their use in developing planning policies and controlling renovation or new construction.

Before a project can be permitted within an identified earthquake fault zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. A site-specific evaluation and written site report must be prepared by a licensed geologist. If an active fault is identified, a structure intended for human occupancy cannot be placed over the trace of the fault and must be set back, generally at least 50 feet from the fault. The A-P Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act: Passed in 1990, the Seismic Hazards Mapping Act (SHMA) addresses non-surface fault rupture earthquake hazards, including strong groundshaking, liquefaction and seismically induced landslides. The California Geological Survey (CGS) is the principal state agency charged with implementing the SHMA. The law directs the CGS to provide local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides and other ground failures. The CGS-delineated seismic hazard zones are referred to as "zones of required investigation" and per the SHMA require site-specific geotechnical hazard investigations when construction projects fall within these areas. SHMA's goal is to minimize loss of life and property by identifying and mitigating seismic hazards.

Natural Hazards Disclosure Act: This 1998 Act requires sellers of real property and their agents to provide prospective buyers with a "Natural Hazard Disclosure Statement" when the property being sold lies within one or more state-mapped hazard areas. These hazard areas include any Seismic Hazard Zone mapping issued by the State Geologist. The seller or the seller's agent must also disclose the mapping to potential buyers.



Liquefaction Susceptibility

Data Source: Riverside County Geology (2013) /California Geological Survey (2008)

Shallow Groundwater Susceptible Sediments
- Very High
- High
- Moderate
- Low
- Very Low

Deep Groundwater Susceptible Sediments
- Moderate
- Low
- Very Low

No Groundwater Data Susceptible Sediments
- Moderate
- Low
- Very Low

- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

California Geological Survey Seismic Hazard Zones
- Murrieta Quad

(See detail in Elsinore, Southwest, Sun City / Menifee Valley Area Plans)

Figure 4.12.3

December 16, 2013

Miles
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RIVERSIDE COUNTY PLANNING DEPARTMENT

LIQUEFACTION ZONES

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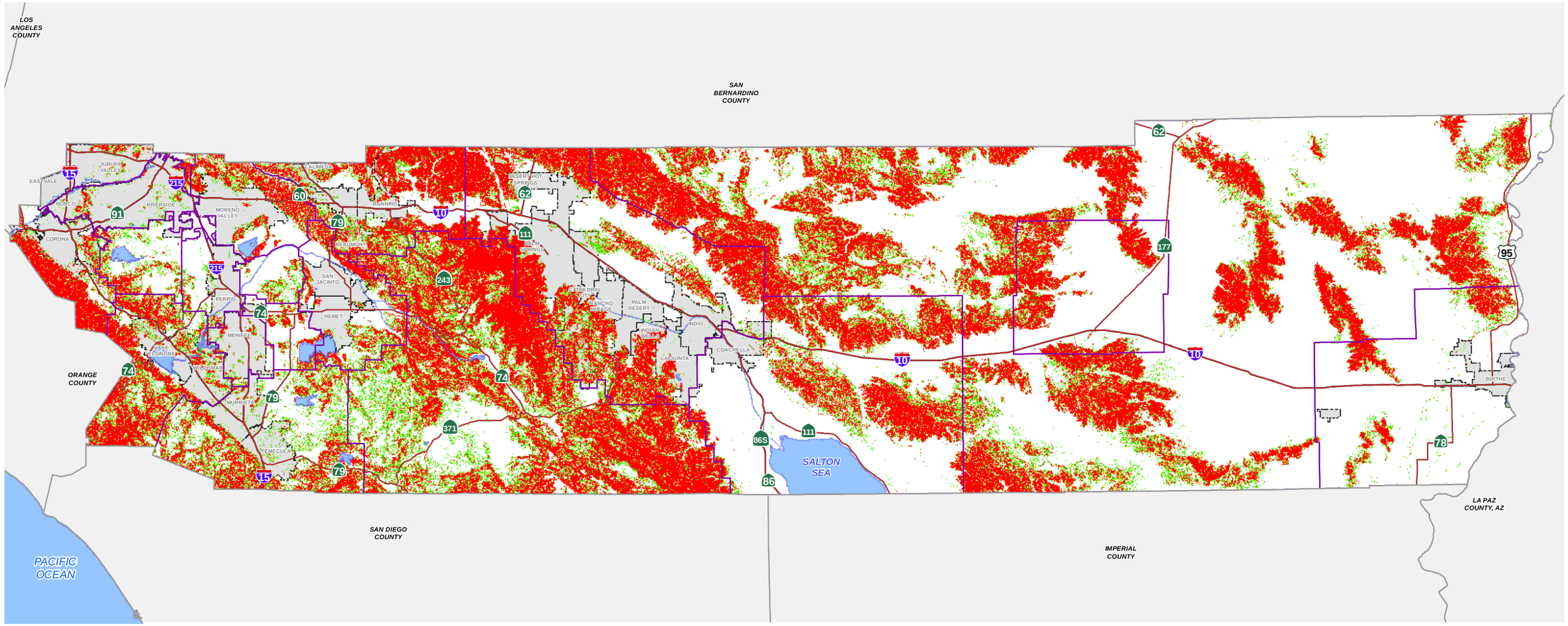

Data Source: Riverside County Contours/Intermap (2007)

Slope Angle

- Less Than 15%
- 15%-25%
- 25%-30%
- 30% and Greater
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.12.4

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

STEEP SLOPES

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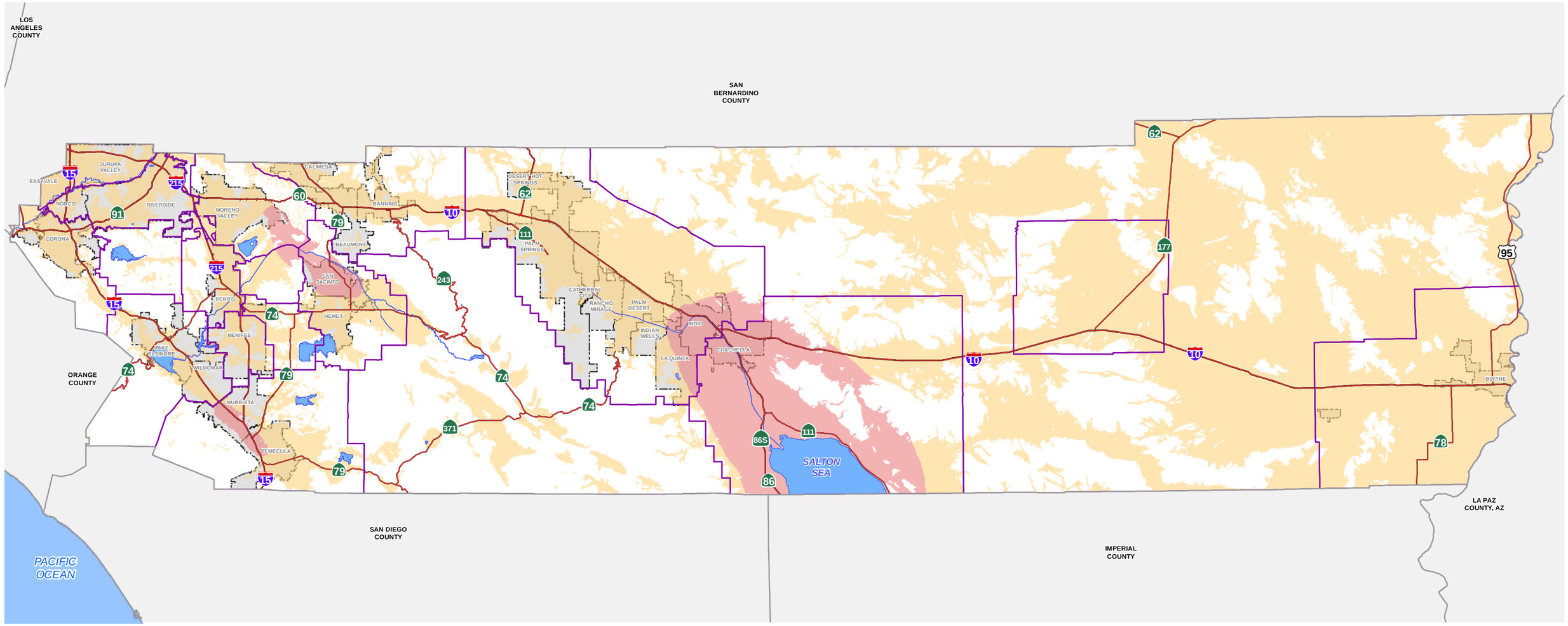

Data Source: RBF Consultants (2003) and Riverside County (2007)

Subsidence Zones

- Areas with Documented Subsidence
- Susceptible Areas
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.12.5

December 16, 2013

Miles
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RIVERSIDE COUNTY PLANNING DEPARTMENT

DOCUMENTED SUBSIDENCE AREAS

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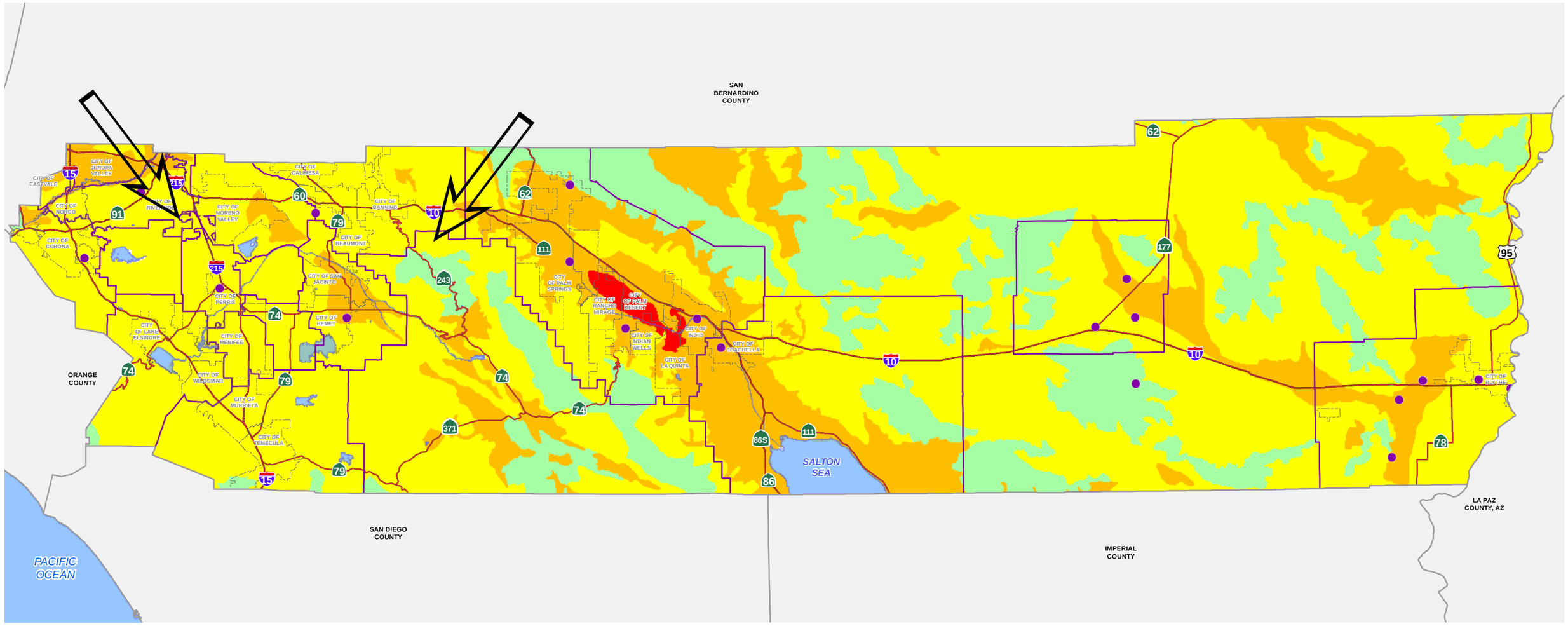

Data Source: Earth Consultants International (2003)

Wind Erodibility Rating

- Very High
- High
- Moderate
- Low
- Weather Station
- General Prevailing Wind Direction
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.12.6

December 16, 2013

Miles

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RIVERSIDE COUNTY PLANNING DEPARTMENT

WIND EROSION SUSCEPTIBILTY AREAS

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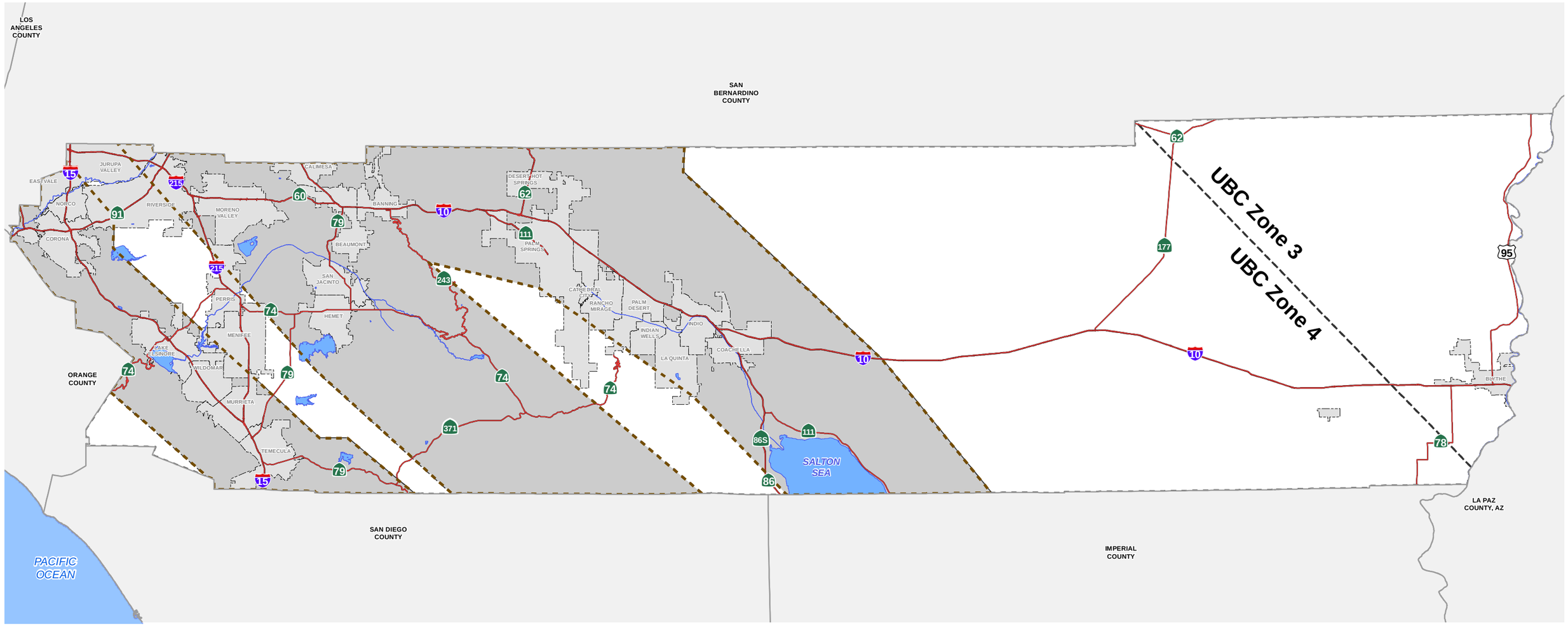

Data Source: RBF Consultants (2003) and Riverside County (2007)

Areas of Riverside County where new near-source design parameters are required under the 1997 Uniform Building Code

- Near Source Zone Regions
- Highways
- City Boundary
- Waterbodies

Figure 4.12.7

December 16, 2013

Miles
0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

NEAR SOURCE ZONE REGIONS
UBC ZONE BOUNDARY

\\agencyfs\maps\Projects\Planning\SafetyElement\Subsidence.mxd

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Building Earthquake Safety Act: This 1986 Act requires all local governments to identify all potentially hazardous buildings within their jurisdictions and to establish a program for mitigation of identified hazards. It is the legislative basis for the inventory of hazardous unreinforced masonry buildings and unreinforced masonry ordinances adopted by most counties and cities in California.

Recovery and Reconstruction Act: This 1986 Act authorizes local governments to prepare for expeditious and orderly recovery before a disaster and reconstruction afterward. It enables localities to prepare pre-disaster plans and ordinances that may include: an evaluation of the vulnerability of specific areas to damage from a potential disaster; streamlined procedures for appropriate modification of existing general plans or zoning ordinances affecting vulnerable areas; a contingency plan of action; organization for post-disaster, short-term and long-term recovery and reconstruction; and a pre-disaster ordinance to provide adequate local authorization for post-disaster activities.

B. Riverside County Regulations

Ordinance No. 457 - Riverside County Building and Fire Codes: Every three years, Riverside County's Building and Fire Codes are adapted from the California Building Standards Code (CCR Title 24), which includes both building and fire codes. These codes establish site-specific investigation requirements, construction standards and inspection procedures to ensure that development authorized by the County of Riverside does not pose a threat to the health, safety or welfare of the public. The California Building Standards Code contains minimum baseline standards to guard against unsafe development. This ordinance also adopts, in some cases with modification to a stricter standard, a number of California State's Title 24 codes (fire, building, plumbing, electrical, etc.). The Riverside County Department of Building and Safety provides technical expertise in reviewing and enforcing these codes.

Ordinance No. 547 - Implementation of the Alquist-Priolo Earthquake Fault Zoning Act: This ordinance establishes the policies and procedures used by the County of Riverside to implement the A-P Act. Among other things, it requires all projects proposed within an "earthquake fault zone," as shown on the maps prepared by the State Geologist to comply with the provisions of the A-P Act. It establishes regulations for construction, including for grading, slopes and compaction, erosion control, retaining wall design and earthquake fault zone setbacks.

Ordinance No. 484 - Control of Blowing Dust: This ordinance establishes requirements for the control of blowing sand within county-designated "Agricultural Dust Control Areas." It defines activities that may contribute to wind erosion, identifies restrictions on activities within these areas, establishes penalties for violation of the ordinance and identifies procedures necessary to obtain a valid permit.

C. Existing Riverside County General Plan Policies

The following existing and proposed General Plan polices address seismic issues, such as fault rupture, seismically induced liquefaction, landslides and rock falls. They also address steep slope risks, such as landslides, rockfall and debris flows, as well as expansive and collapsible soils, subsidence and wind erosion.

1. Safety (S) Element Policies

Policy S 2.5: Require that engineered slopes be designed to resist seismically induced failure. For lower-risk projects, slope design could be based on pseudo-static stability analyses using soil engineering parameters that are

established on a site-specific basis. For higher-risk projects, the stability analyses should factor in the intensity of expected groundshaking, using a Newmark-type deformation analysis.

Policy S 2.6: Require that cut and fill transition lots be over-excavated to mitigate the potential of seismically induced differential settlement.

Policy S 2.7: Require a 100% maximum variation of fill depths beneath structures to mitigate the potential of seismically induced differential settlement.

Policy S 2.8: Encourage research into new foundation design systems that better resist the county's climatic, geotechnical, and geological conditions.

Policy S 3.1: Require the following in landslide potential hazard management zones, or when deemed necessary by the California Environmental Quality Act:

a. Preliminary geotechnical and geologic investigations.

b. Evaluations of site stability, including any possible impact on adjacent properties, before final project design is approved.

c. Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications be prepared by State-licensed professionals.

Policy S 3.2: Require that stabilized landslides be provided with redundant drainage systems. Provisions for the maintenance of subdrains must be designed into the system.

Policy S 3.3: Before issuance of building permits, require certification regarding the stability of the site against adverse effects of rain, earthquakes, and subsidence.

Policy S 3.4: Require adequate mitigation of potential impacts from erosion, slope instability, or other hazardous slope conditions, or from loss of aesthetic resources for development occurring on slope and hillside areas.

Policy S 3.5: During permit review, identify and encourage mitigation of onsite and offsite slope instability, debris flow, and erosion hazards on lots undergoing substantial improvements.

Policy S 3.6: Require grading plans, environmental assessments, engineering and geologic technical reports, irrigation and landscaping plans, including ecological restoration and revegetation plans, as appropriate, in order to assure the adequate demonstration of a project's ability to mitigate the potential impacts of slope and erosion hazards and loss of native vegetation.

Policy S 3.7: Support mitigation on existing public and private property located on unstable hillside areas, especially slopes with recurring failures where county property or public right-of-way is threatened from slope instability, or where considered appropriate and urgent by the County Engineer, Fire, or Sheriff Department.

Policy S 3.8: Require geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence, as identified in [General Plan] Figure S-7 and the Technical Background Report [i.e., General Plan Appendix H], prior to the issuance of development permits. Within the documented subsidence zones of the Coachella, San Jacinto and Elsinore valleys, the studies must address the potential for reactivation of

these zones, consider the potential impact on the project, and provide adequate and acceptable mitigation measures.

Policy S 3.9: Develop a liaison program with all county water districts to prevent water extraction induced subsidence.

Policy S 3.10: Encourage and support efforts for long-term, permanent monitoring of topographic subsidence in all producing groundwater basins, irrespective of past subsidence.

Policy S 3.11: Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones as shown on [General Plan] Figure S-8, Wind Erosion Susceptibility Map.

Policy S 3.13: Require buildings to be designed to resist wind loads.

Policy S 3.14: Educate builders about the wind environment and encourage them to design projects accordingly.

Policy S 7.7: Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

a. Ensure that special development standards, designs, and construction practices reduce risk to tolerable levels for projects involving critical facilities, large-scale residential development, and major commercial and industrial development through conditional use permits and the subdivision review process. If appropriate, impact fees should be assessed to finance required actions.

b. Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction. Such measures shall apply to critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.

c. Require that planned lifeline utilities, as a condition of project approval, be designed, located, structurally upgraded, fit with safety shutoff valves, be designed for easy maintenance, and have redundant back up lines where unstable slopes, earth cracks, active faults, or areas of liquefaction cannot be avoided.

d. Review proposed uses of fault setback areas closely to ensure that county infrastructure (roads, utilities, drains) are not unduly placed at risk by the developer. Insurance, bonding, or compensation plans should be used to compensate the County for the potential costs of repair.

Policy S 7.8: Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities.

Policy S 7.11: Coordinate with the [California] Public Utilities Commission (PUC) and/or utilize the Capital Improvement Program, to strengthen, relocate or take other appropriate measures to safeguard high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits that:

a. Extend through areas of high liquefaction potential.

b. Cross active faults.

c. Traverse earth cracks or landslides.

Policy S 7.13: Develop a system to respond to short-term increase in hazard on the southern San Andreas fault based on probabilities associated with foreshocks.

Policy S 7.16: During countywide earthquake drills, encourage communication and cooperation between emergency response staff and designated contacts at hospitals, high-occupancy buildings and dependent care facilities.

Policy S 7.19: Establish a far-ranging, creative, forward-thinking public education and outreach campaign to inform the community about:

a. The hazards they face.

b. The costs of doing nothing to mitigate the hazards.

c. What is known about each hazard.

d. Why jurisdictions don't have all the answers.

e. Mitigation incentives.

f. What the County does for them.

g. What the County cannot be expected to do for them.

D. Proposed New or Revised Riverside County General Plan Policies

The following revisions to existing General Plan policies are proposed as part of GPA No. 960. The revisions are intended to enhance the policies' implementation and comprehensive use.

1. Safety (S) Element Policies

Policy S 2.1: Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies:

a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map.

b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented. The County may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.

c. Require that lifelines be designed to resist, without failure, their crossing of a fault, should fault rupture occur.

d. Support efforts by the California Department of Conservation, ~~Division of Mining and Geology~~ *California Geological Survey* to develop geologic and engineering solutions in areas of ~~disseminated~~ ground deformation due to faulting *and seismic activity* in those areas where a through-going fault cannot be reliably located.

e. Encourage and support efforts by the geologic research community to better define the locations and risks of county faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

Policy S 2.2: Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement ~~as part of the environmental and development review process~~, for any *building* ~~structure~~ proposed for human occupancy and any structure whose damage would cause harm*, except for accessory buildings.*

Policy S 2.3: Require that a State-licensed professional investigate the potential for liquefaction in areas designated as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all general construction projects*, except for accessory buildings* (General Plan Figure S-3).

Policy S 2.4: Require that a State-licensed professional investigate the potential for liquefaction in areas identified as underlain by "Susceptible Sediments" for all proposed critical facilities ~~projects~~ (General Plan Figure S-3).

Policy S 3.12: Include a disclosure about wind erosion susceptibility on property title *for those properties located within "High" and "Very High" wind erosion hazard zones as shown on [General Plan] Figure S-8, Wind Erosion Susceptibility Map.*

2. Land Use (LU) Element Policies

Policy LU *12.1* (Previously 11.1): Apply the following policies to areas where development is allowed and that contain natural slopes, canyons, or other significant elevation changes, regardless of land use designation:

a. Require that hillside development minimize alteration of the natural landforms and natural vegetation.

b. Allow development clustering to retain slopes in natural open space whenever possible.

c. Require that areas with slope be developed in a manner to minimize the hazards from erosion and slope failures.

d. Restrict development on visually significant ridgelines, canyon edges and hilltops through sensitive siting and appropriate landscaping to ensure development is visually unobtrusive.

e. Require hillside adaptive construction techniques, such as post and beam construction, and special foundations for development when the need is identified in a soils and geology report which has been accepted by the County.

f. *In areas at risk of flooding, limit* ~~encourage the limitation of~~ grading, cut and fill to the amount necessary to provide stable areas for structural foundations, street rights-of-way, parking facilities, and other intended uses.

4.12.3 Thresholds of Significance for Geology and Soils Resources

The proposed project would result in a significant impact related to geology or soils if it would:

A. Expose people or structures to potential substantial adverse effects including the risk of loss, injury or death involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

B. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic groundshaking.

C. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction.

D. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides.

E. Result in substantial soil erosion or the loss of topsoil.

F. Be located on a geological unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

G. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

H. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for disposal of wastewater.

4.12.4 Effect of GPA No. 960 on the General Plan and on Geology and Soils

The proposed project, GPA No. 960, would have spatial effects where it involves a variety of specific General Plan Land Use Designation (LUD) corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and standards, and an incidental commercial policy for rural areas. In addition, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County. In this section, the geology-related changes to the General Plan are outlined and the effects of proposed changes relative to geotechnical hazards are discussed. Specific impacts and mitigation for the project are then evaluated according to identified significance thresholds in the section following this one.

A. Proposed Changes to the General Plan

As part of the project review process, geological and soils-related data in the General Plan was updated and geological policies reviewed and revised where necessary. The existing General Plan addresses geological resources in the Safety (S) Element. GPA No. 960 includes the following geology-related updates; text of the revised General Plan policies is provided in Section 4.12.2.C.

Seismic Hazard Zones: Text was added and policies updated to accommodate State Seismic Hazard Zone Maps as they are released by the State of California. Several related Safety policies were revised as part of this and related exhibits were also updated: Figure S-1, Mapped Faulting in Riverside County, and Figure S-2, Earthquake Fault Study Zones.

Geological Hazard Mapping: As part of GPA No. 960 a variety of geology-related exhibits were updated to include the most recently available data. These include Figure S-3, Generalized Liquefaction (with a detail noting the quad-specific updated information released by the State of California for the Murrieta Quadrangle; specific mapping is provided in the applicable Area Plan maps); and Figure S-4, Earthquake-Induced Slope Instability Map (also with Murrieta Quad details, highlighted in the applicable Area Plans).

In addition to these geological changes, a variety of LUD and policy area changes are proposed, as per the descriptions in Section 3.0 (Project Description) of this EIR and associated Figure 3-1 (and corresponding maps within each Area Plan) that may indirectly affect geological resources. Such changes would lead to either an increase or decrease in development potential (density or intensity); the risks associated with introducing new people and property into areas potentially subject to the various geological hazards outlined herein would be increased correspondingly.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies, as others as described in Section 3.0 of the EIR. Similarly, new maps for trails and Riverside County roads (GP Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements would be determined based on site assessment of opportunities and constraints, particularly as related to geological hazards, soils and geotechnical suitability to determine environmentally preferred alignments to minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines, and such, are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services, are not presently foreseeable beyond the master countywide level already depicted in the 2003 General Plan and addressed previously in EIR No. 441. These improvements would require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation would be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage.

B. Analysis of GPA No. 960 Effects on Geology and Soils

The General Plan is concerned mainly with the physical build out of Riverside County; many of the changes associated with GPA No. 960 would affect planned land usage. In particular, proposed changes affect land use overlays, land use designations and policies that affect the conversion of rural, semi-rural, agricultural and vacant lands to suburban or urban uses in various parts of Riverside County.

Table 4.12-C: Geology Hazard Areas within Riverside County

Geologic Hazard	Riverside County Area (acres)	Areas of Potentially Affected by Project (acres)
Earthquake Zones		
Alquist-Priolo Earthquake Zones	87,490	9,610
County Earthquake Zones	103,640	7,320
Liquefaction Susceptibility		
Very High	149,020	9,470
High	123,570	14,450
Moderate	1,559,290	54,760
Low	569,370	10,720
Very Low	57,780	2,900
Subsidence		
Active Areas	267,790	18,290
Susceptible Areas	2,216,440	75,190
Landslide Hazards		
Very High	94,690	520
High	301,650	4,060
Moderate	486,220	9,100
Low	35,540	240
Wind Erosion Hazard		
Very High	21,680	270
High	839,950	56,160
Moderate	2,894,540	137,840
Low	860,310	16,890

Source: Riverside County GIS Dept., analysis of RCLIS GIS data, 2011.

Table 4.12-D: Potential Project Areas Affected by Geologic Hazard Areas

Project Components	Earthquake Zones	Liquefaction Susceptibility[1]	Subsi-dence	Landslide Hazards[2]	Wind Erosion Hazard[3]	Comments
Countywide Changes						
Parcel-Specific LUD Changes	Poss.[4]	Poss.	Poss.	Poss.	Poss.	Depending on location[4]
Incidental Rural Commercial Policy	Poss.[4]	Poss.	Poss.	Poss.	Poss.	Depending on location[4]
County Trails	X	X	X	X	X	Expected[5]
County Roads	X	X	X	X	X	
Conservation Acquisitions (OS-CH Designated Lands)	---	---	---	---	---	No development potential.
Specific Policy Areas and Overlays						
Aguanga RVSA	X	X	X	X	X	RVSA deleted[6]
Airport Policies[7]	X	X	X	---	X	
Anza Valley Policy Area	X	X	X	X	X	
Chiriaco Summit RVSA	X	X	X	---	X	Text revision[6]
El Cariso RVSA	---	---	---	---	X	RVSA deleted[6]
Fish Farms	---	X	X	---	X	
Good Hope RVLUO	---	X	X	---	X	
Lakeland Village	X	---	X	---	X	

Project Components	Earthquake Zones	Liquefaction Susceptibility[1]	Subsi-dence	Landslide Hazards[2]	Wind Erosion Hazard[3]	Comments
Meadowbrook RVLUO	X	---	X	---	X	
Northeast Business Park	---	X	X	---	X	
San Jacinto Ag. Potential Development Study Area	X	X	X	X	X	Study Area deleted[6]
Sky Valley RVO	---	X	X	---	X	No revision[6]

Key: RVO = Rural Village Overlay RVLUO = Rural Village Land Use Overlay
OS-CH = Open Space Habitat Conservation RVSA = Rural Village Study Area

Footnotes:
1. Liquefaction susceptibility within area mapped as very high, high or moderate.
2. Landslide hazards within area mapped as very high, high or moderate.
3. Wind erosion hazard within area mapped as very high, high or moderate.
4. "Poss." denotes possible geologic hazard that may apply depending on future location.
5. Depend on future locations, but due to their linearity, marked geohazards area expected.
6. Development consistent with existing LUDs remains permitted.
7. LUD revisions associated with areas around Blythe, Flabob and Riverside Municipal Airports.

Source: Riverside County GIS Dept., results of GIS mapping analysis, GPA No. 960 project information, 2010.

Table 4.12-C (Geology Hazards within Riverside County) provides an overview of the geologic hazards mapped within the county and those found to exist on or near the locations of specific spatial land use changes proposed under GPA No. 960. The table also indicates how many acres within the areas affected by GPA No. 960 would be directly affected by those same geologic hazards. The region that would be most affected by steep slopes and landslides is the Anza Valley. Of a total of over 74,700 acres in the Anza Valley, 3,600 acres (5%) have a high to very high susceptibility for slope failure. The proposed trail alignments would be most affected by liquefaction (16,300 acres), fault rupture (over 6,850 acres) and wind erosion (over 28,800 acres), but do not include habitable structures. Other areas of principal effect would be Anza Valley (nearly 20,000 acres for wind erosion and 5,300 acres for liquefaction and the Aguanga Rural Village Overlay region, with 1,540 acres within fault rupture hazard areas).

For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), geohazards cannot be delineated at present. Likewise, the potential for future development occurring within the proposed revised policy areas and overlays has been generalized for this EIR, but due to the large scale of Riverside County and these policy areas, site-specific geohazards cannot be accurately assessed at this time. More generally, future development accommodated by the updated General Plan could be affected by a variety of geologic hazards depending upon location. These include fault rupture, groundshaking, liquefaction, lateral spreading and landslide hazards associated with seismic activity, as well as subsidence and soil erosion from wind or water. Where not foreseeable at this time, such affects must be addressed programmatically, as outlined in the subsequent section.

4.12.5 Geology and Soils - Impacts and Mitigation

A. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Impact 4.12.A – Expose People or Structures to Substantial Adverse Effects Due to Rupture of a Known Earthquake Fault: Future development accommodated by the proposed project would increase rural, suburban and urban uses in Riverside County. This may increase the potential for property loss, injury or death resulting from development where it occurs on or adjacent to known or as of yet undetected earthquake fault zones. Compliance with existing laws, regulatory programs, General Plan policies and existing (EIR No. 441) Mitigation Measure 4.10.1A would be sufficient to ensure that fault rupture impacts to future development accommodated by GPA No. 960's proposed General Plan changes would be less than significant.

1. Analysis of Impact 4.12.A

Known and unknown fault zones crisscross the County of Riverside. As indicated in Table 4.12-C, within unincorporated Riverside County as a whole, there are a total of roughly 103,700 acres of County Earthquake Zones and 87,500 acres of Alquist-Priolo Earthquake Zones (note, these two categories are *not* mutually exclusive). Where project changes affect county fault hazard areas and Alquist-Priolo earthquake fault hazard zones, future development on or near these faults would increase the potential for property loss, injury or death. Table 4.12-C indicates the portions of the proposed project with known spatial impacts as they relate to the mapped seismic and geologic hazards.

As detailed in Figure 4.12.1, Alquist-Priolo earthquake fault hazard zones have been established along the traces of the Elsinore, San Jacinto and San Andreas Faults. Some lands within existing Alquist-Priolo zones or County-designated fault zones would be designated "Community Development" or "Rural" in GPA No. 960. Future development on these lands may result in the construction and occupation of structures, critical facilities and pipelines adjacent to known and/or as yet undetected earthquake fault zones. Such development would increase the number of people and the amount of developed property exposed to fault rupture hazards.

To lessen the potential for property loss, injury or death that could result from rupture of faults during earthquake events, the State of California has provided strict regulations (see below) that each county and city must follow to ensure impacts from fault rupture are reduced to less than significant levels. In addition, Riverside County ordinances, policies and mitigation measures have been identified to reduce potential impacts associated with fault rupture hazards to a less than significant level. With adherence to these regulatory measures, project impacts related to fault zones would be less than significant.

2. Regulatory Compliance for Impact 4.12.A

As detailed and explained below, compliance with the following existing laws, regulatory programs, General Plan Policies and Mitigation Measure No. 4.10.1A from EIR No. 441 are sufficient to ensure that impacts related to fault rupturing associated with future development resulting from GPA No. 960 changes to the General Plan are less than significant.

a. Compliance with Riverside County Regulations

Local regulations that would reduce impacts related to fault rupture include, but are not limited to, the following:

Ordinance No. 547 - Implementing the Alquist-Priolo Earthquake Fault Zoning Act: This ordinance establishes that all applicants for a project located within an earthquake fault zone, as shown on the maps prepared by the State Geologist, shall comply with all of the provisions of the A-P Act and the adopted policies and criteria of this ordinance. This ordinance is applicable to all grading, building and structures, and regulates numerous aspects of design to ensure that structures and facilities are designed with the appropriate level of seismic safety warranted by the geology of their location. Among other things, it addresses grading, slopes and compaction, erosion control, retaining wall design and earthquake fault zones. In addition to the requirements of this ordinance, all applicants for a building permit for a structure used for human occupancy that lies within an earthquake fault zone delineated by the State Geologist pursuant to PRC Section 2621 *et seq.* and which is subject to Ordinance No. 547, shall comply with all the provisions of this ordinance prior to issuance of a building permit. Compliance with these regulations would ensure that no habitable structure, critical facility or infra-structure is built on an active fault, minimizing the potential for fault rupture to affect the structure and cause harm to occupants and possessions. Implementation of, and compliance with, these measures would ensure potential seismic impacts, such as fault rupture risks, are reduce to less than significant.

b. Compliance with Existing and Proposed New or Revised General Plan Policies

Compliance with Policy S 2.1 (including its proposed revisions – see Section 4.12.2.C for full text of the policy) would ensure that future development complies with the Alquist-Priolo Earthquake Fault Zoning Act through the provisions of a geologic study for any project within one-half mile of any Quaternary through historic faults shown on the Earthquake Fault Studies Zones map. Based on the study, development projects may be required to adhere to specific setbacks from faults, engineer structures to specific tolerances, engineer soils, etc. This policy ensures that no habitable structure, critical facility or infrastructure is built on an active fault. Thus, revised Policy S 2.1 would contribute to ensuring that fault rupture impacts on future development are less than significant.

In addition, General Plan policies that would also contribute to avoiding, reducing or minimizing seismic risks, such as faulting hazards, include: S 2.5, 2.6, 3.1, 3.3, 3.4, 3.8, 7.7, 7.8, 7.11; as well as proposed revised Policies S 2.2, 2.3 and 2.4.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measure 4.10.1A was imposed to reduce impacts from fault rupture to less than significant by requiring geotechnical studies in areas that are within fault zones and using the resultant information to ensure that no habitable structure is built on an active or potentially active fault. Although the potential impacts of this project would be reduced to less than significant through regulatory compliance as per above, this measure was programmatic in nature and thus remains applicable to this project.

Existing Mitigation Measure 4.10.1A: Before a project is approved or otherwise permitted within an A-P Zone, County Fault Zone, within 150 feet of any other active or potentially active fault mapped in a published United States Geologic Survey (USGS) or CGS reports, or within other potential earthquake hazard area (as determined by the County Geologist), a site-specific geologic investigation shall be prepared to assess potential

seismic hazards resulting from development of the project site. The site-specific geotechnical investigation shall incorporate up-to-date data from government and non-government sources.

Based on the site-specific geotechnical investigation, no structures intended for human occupancy shall be constructed across active faults. This site-specific evaluation and written report shall be prepared by a licensed geologist and shall be submitted to the County Geologist for review and approval prior to the issuance of building permits. If an active fault is discovered, any structure intended for human occupancy shall be set back at least 50 feet from the fault. A larger or smaller setback may be established if such a setback is supported by adequate evidence presented to and accepted by the County Geologist.

3. Finding on Significance for Impact 4.12.A

Compliance with the above regulations, General Plan policies and existing mitigation measure would ensure that significant impacts related to fault rupture are less than significant.

B. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic groundshaking?

Impact 4.12.B – Expose People or Structures to Substantial Strong Seismic Groundshaking: Like all of Southern California, Riverside County has experienced and will continue to face groundshaking resulting from activity on local and regional faults. Future development consistent with GPA No. 960 may increase the potential for property loss, injury or death resulting from this groundshaking hazard. Compliance with existing laws, regulatory programs, General Plan policies and existing EIR No. 441 mitigation measures would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.12.B

The Federal Emergency Management Agency (FEMA), in association with the National Institute of Building Sciences, utilizes a standardized methodology based on GIS for earthquake loss estimation. This methodology, the United States Hazards system (HAZUS), is designed to produce loss estimates for use by state, regional and local governments in planning for earthquake loss mitigation, emergency preparedness and response and recovery operations. This methodology deals with nearly all aspects of the built environment and with a wide range of different types of losses. HAZUS estimations are based on current scientific and engineering knowledge and may incorporate data on soil type, liquefaction and landslide susceptibility and building inventory. A complete accounting of HAZUS data are provided in Appendix H of the existing General Plan.

The provisions of the California Building Standards Code (CCR Title 24) regulate the design and construction of a building's structural, plumbing, electrical and mechanical systems to ensure seismic safety, as well as fire safety, energy conservation and accessibility. In addition, Riverside County Municipal Code Chapter 15.60 adopted pursuant to the requirements of the Alquist-Priolo Earthquake Fault Zoning Act and the policies of the State Mining and Geology Board regulates all permit applications for development projects.

Increases in population and residential and non-residential development as a result of GPA No. 960's General Plan changes would increase the exposure of persons and property to groundshaking hazards. The measures identified below would mitigate potential groundshaking effects to less than significant levels.

2. Regulatory Compliance for Impact 4.12.B

As detailed and explained below, compliance with the following existing laws, General Plan policies and existing EIR No. 441 mitigation measures are sufficient to ensure that seismic groundshaking impacts to future development accommodated by the project would be less than significant.

a. Compliance with State and County Regulations

Compliance with the following State of California and County of Riverside regulations would aid in preventing significant impacts related to seismic groundshaking.

California Building Standards Code, Section 1613: This portion of the Code addresses structural design for earthquake loads, to ensure new structure meet necessary seismic safety and protection standards, thereby reducing potential impacts from earthquakes.

Riverside County Municipal Code Chapter 15.60 - Earthquake Fault Area Construction Regulations: As indicated above, the County of Riverside implements the seismic regulations via its Municipal Code Chapter 15.60 (Earthquake Fault Area Construction Regulations) and Sections 15.60.010 through 15.60.070 which are applicable to all construction in Riverside County. These regulations ensure new construction adheres to the necessary seismic standards to protect against groundshaking.

b. Compliance with Existing and Proposed New or Revised General Plan Policies

Compliance with Policy S 7.7 (see Section 4.12.2.C for text of policy) would ensure that development standards, designs and construction practices are implemented to reduce groundshaking risk to tolerable levels for projects involving critical facilities, large-scale residential development and major commercial and industrial development. Thus, Policy S 7.7 would contribute to ensuring that groundshaking impacts on future development are less than significant.

Proposed revised Policy S 2.2 would also contribute to reducing seismic risks for the reasons mentioned in the prior impact discussion. Other General Plan polices that would also contribute to avoiding, reducing or minimizing seismic risks, such as groundshaking hazards, include: S 2.5, 2.6, 3.1, 3.3, 3.4, 3.8, 7.8, 7.11; as well as proposed revised Policies S 2.2, 2.3 and 2.4.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, which was certified for the 2003 RCIP General Plan it was determined that in order to reduce impacts associated with seismic groundshaking, mitigation would be necessary. The mitigation measures listed below are from EIR No. 441 and shall also apply as part of the mitigation for programmatic EIR No. 521. Existing Mitigation Measures 4.10.2A, 4.10.2B and 4.10.2C were imposed to provide adequate mitigation for potential groundshaking hazards and to reduce impacts due to seismically induced groundshaking to less than significant. The measures also provided flexibility for the County of Riverside when requiring site-specific seismic assessments for developments potentially subject to groundshaking and complying with Riverside County design standards. Although the potential impacts of this project would be reduced to less than significant through regulatory compliance as per above, this measure was programmatic in nature and thus remains applicable to this project.

Existing Mitigation Measure 4.10.2A: The design and construction of structures and facilities shall adhere to the standards and requirement detailed in the California Building Code (California Code of Regulations, Title 24), County Building Code, and/or professional engineering standards appropriate for the seismic zone in which such construction may occur. Conformance with these design standards shall be enforced through building plan review and approval by the Riverside County Department of Building and Safety prior to the issuance of building permits for any structure or facility.

Existing Mitigation Measure 4.10.2B: As determined by the County Geologist, a site-specific assessment shall be prepared to ascertain potential groundshaking impacts resulting from development. The site-specific groundshaking assessment shall incorporate up-to-date data from government and non-government sources and may be included as part of any site-specific geotechnical investigation required in [existing EIR No. 441] Mitigation Measure 4.10.1A. The site-specific groundshaking assessment shall include specific measures to reduce the significance of potential groundshaking hazards.

This site-specific groundshaking assessment shall be prepared by a licensed geologist and shall be submitted to the County Geologist for review and approval prior to the issuance of building permits.

Existing Mitigation Measure 4.10.2C: The standards stated in [existing EIR No. 441] Mitigation Measures 4.10.2A and 4.10.2B shall apply to any structure of facility that undergoes expansion, remodeling, renovation, refurbishment or other modification.

3. Finding on Significance for Impact 4.12.B

Compliance with the above regulations, General Plan policies and existing EIR No. 441 mitigation measures would ensure that significant impacts of strong seismic groundshaking on future development accommodated by the proposed project are reduced to less than significant.

C. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction?

Impact 4.12.C – Expose People or Structures to Substantial Adverse Effects Due to Seismic-Related Ground Failure, Including Liquefaction: Portions of unincorporated Riverside County are susceptible to liquefaction, a destructive secondary effect of strong seismic shaking. Future development associated with GPA No. 960 within Riverside County would increase the potential for the placement of structures and facilities in or near areas susceptible to liquefaction. Impacts associated with seismic-related ground failure and liquefaction would be reduced through compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures. Compliance with the regulations described below would ensure that seismic-related ground failure and liquefaction risks to future development accommodated by the project would be less than significant.

1. Analysis of Impact 4.12.C

Liquefaction is a process by which water-saturated materials (including soil, sediment and certain types of volcanic deposits) lose strength and may fail during strong groundshaking. Liquefaction is defined as "the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure." Liquefaction occurs worldwide, commonly during moderate to great earthquakes. Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation and loss of bearing strength.

Areas of "very high" or "high" susceptibility to liquefaction have been identified adjacent to the Santa Ana River, in the vicinity of Hemet and San Jacinto, in the southern Coachella Valley and along the eastern boundary of Riverside County adjacent to the Colorado River. As indicated in Table 4.12-C, within unincorporated Riverside County as a whole, there are a total of roughly 150,000 acres of "very high" and 123,500 acres of "high" liquefaction susceptibility. At roughly 1,559,300 acres, the largest share of Riverside County is at moderate risk for liquefaction. Lastly, roughly 627,200 acres have a low or very low liquefaction risk. Increases in population and the residential and non-residential development accommodated by GPA No. 960 would increase the exposure of persons and property to liquefaction hazards. Table 4.12-C indicates the portions of the proposed project with known spatial impacts as they relate to the mapped liquefaction potential and other seismic and geologic hazards. The measures identified below would reduce the potentially significant seismic impacts to future development to less than significant.

2. Regulatory Compliance for Impact 4.12.C

As detailed and explained below, compliance with the following existing laws, regulatory programs and General Plan policies are sufficient to ensure that impacts to seismic-related ground failure and liquefaction as a result of GPA No. 960 would be less than significant.

a. Compliance with County Regulations

Compliance with the following Riverside County regulation would further prevent significant impacts to seismic-related ground failure including liquefaction.

Ordinance No. 547: As mentioned for the prior two impacts, this ordinance addresses design and construction for development within earthquake fault zones and Alquist-Priolo Act compliance, among other things. Compliance with these regulations would ensure that no habitable structure, critical facility or infrastructure is built on an active fault, minimizing the potential for fault rupture to affect the structure and cause harm to occupants and possessions. Implementation of, and compliance with, these measures would ensure that potential seismic impacts, including seismically-induced ground failure and liquefaction, are reduced to less than significant.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.12.2.C, Policies S 2.2 through 2.7 in particular provide mitigation for impacts associated with seismic ground failure and liquefaction. Implementation of these General Plan policies would reduce the seismic risks posed to future growth and development within Riverside County accommodated by the project. Specifically:

Policies S 2.5, 2.6 and 2.7: These policies directly address reducing seismic-related ground failure, including liquefaction, by requiring specific grading standards for those development projects that involve grading.

Other General Plan polices that would also contribute to avoiding, reducing or minimizing seismic risks, such as ground failure and liquefaction, include: S 3.1, 3.3, 3.4, 3.8, 7.7, 7.8 and 7.11.

c. Compliance with Proposed New or Revised General Plan Policies

Policies S 2.2, 2.3 and 2.4: These policies directly address potential seismically induced ground failure and liquefaction by requiring developments and construction proposed in those areas that have been identified as having a

potential for liquefaction to be reviewed by State-licensed professionals in order to ensure any potential hazards are mitigated through appropriate design and engineering.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.10.3A and 4.10.3B were imposed to mitigate potential liquefaction hazards. The measures ensure that areas subject to liquefaction are studied by a qualified geologist and that the resultant study recommendations are implemented as part of project conditions of approval. Although potential impacts would be reduced to less than significant through regulatory compliance as per above, these measures are programmatic in nature and thus remains applicable to future development accommodated by this project as well.

Existing Mitigation Measure 4.10.3A: As determined by the County Geologist, a site-specific assessment shall be prepared to ascertain potential liquefaction impacts resulting from development. The site-specific liquefaction assessment shall incorporate up-to-date data from government and non-government sources and may be included as part of any site-specific geotechnical investigation required in [existing EIR No. 441] Mitigation Measure 4.10.1A. This site-specific groundshaking assessment shall be prepared by a licensed geologist and shall be submitted to the County Geologist for review and approval prior to the issuance of building permits.

Existing Mitigation Measure 4.10.3B: Where development is proposed within an identified or potential liquefaction hazard area (as determined by the County Geologist), adequate and appropriate measures such as (but not limited to) design foundations in a manner that limits the effects of liquefaction, the placement of an engineered fill with low liquefaction potential, and the alternative siting of structures in areas with a lower liquefaction risk, shall be implemented to reduce potential liquefaction hazards. Any such measures shall be submitted to the Riverside County Geologist and the County Department of Building and Safety for review prior to the approval of the building permits.

3. Finding on Significance for Impact 4.12.C

Compliance with the above regulations, General Plan policies and existing EIR No. 441 mitigation measures would ensure that significant impacts from seismic ground failure and liquefaction are avoided or minimized to less than significant.

D. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides?

Impact 4.12.D – Expose People or Structures to Substantial Adverse Effects Due to Landslides: Landslides and rockfall can occur throughout Riverside County as a result of seismic activity and other natural processes, as well as resulting from human activity. Future development within Riverside County accommodated by GPA No. 960 would increase the potential for structures and facilities in areas susceptible to landslides or rockfall. Compliance with existing laws and General Plan policies would reduce potential landslide and rockfall impacts to less than significant levels.

1. Analysis of Impact 4.12.D

Areas highly susceptible to landslides and rockfall occur in and adjacent to mountainous areas throughout the county. Thus, as delineated in Table 4.12-D (Potential Project Areas Affected by Geologic Hazard Areas), some

of the development accommodated by the project would occur in areas highly susceptible to this hazard. Table 4.12-C indicates that within unincorporated Riverside County, there are a total of roughly 94,700 acres at "very high" landslide potential; of which, roughly 500 acres are within areas changed under GPA No. 960. Another 301,700 acres have a "high" potential; the project area includes roughly 4,100 acres of this.

Development in susceptible areas would increase the potential for injury, death or loss of property. Table 4.12-C indicates the portions of the proposed project with known spatial impacts as they relate to mapped seismic and geologic hazards, including landslides and rockfall. Riverside County policies have been identified to lessen the potential for property loss, injury, or death resulting from landslides or rockfall.

2. Regulatory Compliance for Impact 4.12.D

As detailed and explained below, compliance with the following existing laws, regulatory programs and General Plan policies would aid in avoiding or reducing potentially significant impacts to landslides and rockfall as a result of GPA No. 960.

a. Compliance with State and County Regulations

Compliance with the following state and county regulations would aid in preventing significant landslide and rockfall impacts.

Title 24 - California Building Standards Codes: All development in Riverside County is required to comply with the California Building Standards Codes in Title 24. Prior to any construction of structures, including roadways and infrastructure, in areas of steep slopes or landslide potential, a geotechnical assessment is required by a certified geologist. This report includes recommendations as to the stability of the site and outlines requirements for grading, site preparation and building foundations. Grading regulations implemented by the County of Riverside require that grading plans be prepared and reviewed by the County of Riverside prior to the issuance of grading permits and are consistent with the geotechnical study; these regulations are in place to ensure that landslide hazards are reduced to less than significant.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would further prevent significant impacts related to landslides and rockfall.

Policies S 2.5 - 2.8: For future development associated with the GPA No. 960, the County of Riverside would require implementation of Policies S 2.5 through S 2.8 to minimize the effects of landslides and rockfall on new development and infrastructure to less than significant levels.

Policies S 3.1 - 3.7: These policies require landslide potential hazard management zones, including geotechnical and geologic investigations, site stability evaluations and design recommendations, as well as adequate mitigation, against potential hazardous slope conditions.

Proposed Revised Policies S 2.2 - 2.4: For future development associated with the GPA No. 960, the County of Riverside would require implementation of Policies S 2.2 through S 2.4 to minimize the effects of landslides and rockfall on new development and infrastructure to less than significant levels. Other General Plan polices that would also contribute to avoiding, reducing or minimizing rockfall and landslide risks include: S 3.8, 7.7, 7.8 and 7.11.

3. Finding on Significance for Impact 4.12.D

Compliance with the above regulations and General Plan policies would ensure that significant impacts related to landslides and rockfall are avoided and minimized to less than significant.

E. Would the project result in substantial soil erosion or the loss of topsoil?

Impact 4.12.E – Result in Substantial Soil Erosion or Topsoil Loss: Areas exposed during future development activities accommodated by GPA No. 960 revisions to the General Plan would be prone to erosion and loss of topsoil. Wind and water are the two biggest factors in soils erosion. Human activities that remove vegetation or disturb soil are the biggest contributor to erosion potential. Compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures help reduce potential soil erosion impacts and ensure that future development would have a less than significant impact on soils.

1. Analysis of Impact 4.12.E

The future growth and development accommodated by GPA No. 960 would result in an increase in both residential and non-residential structures, as well as infrastructure, roads and facilities. Such development would result in alteration of existing topography, removal of existing vegetation layers and exposure of topsoil. Soil erosion potential, either by wind or water, is substantially increased upon the exposure of underlying soils during grading activities or other landform modifications.

Erosion by wind and windblown sand is an environmentally limiting factor throughout much of Riverside County, especially in the Coachella Valley and eastern Riverside County. Measures identified below mitigate potentially significant erosion impacts from future development accommodated by GPA No. 960. As shown in Table 4.12-C, a total of roughly 21,700 acres of Riverside County are at "very high" potential for wind erosion and nearly 840,000 acres are at "high." A large portion of Riverside County, nearly 2,900,000 acres, is at "moderate" wind erosion risk, while roughly 900,000 acres are at "low" risk.

The table also indicates the portions of the proposed project with known spatial impacts as they relate to mapped wind erosion and blowsand potential. Riverside County policies and regulations have been identified to lessen potential hazards associated with blowsand and loss of topsoil due to erosion, particularly wind erosion. Implementation of these policies and regulations would ensure that future development accommodated by the project does not result in significant erosion or impacts to topsoil.

2. Regulatory Compliance for Impact 4.12.E

As detailed and explained below, compliance with the following existing laws, regulations and General Plan policies would aid in avoiding or reducing potentially significant impacts to soil erosion and loss of topsoil to less than significant levels.

a. Compliance with County Regulations

Compliance with the following Riverside County regulation would aid in preventing significant impacts to soil erosion and the loss of topsoil.

Ordinance No. 484 – Blowing Sand Control: This ordinance establishes requirements for the control of blowing sand within County-designated Agricultural Dust Control Areas. It defines activities that may contribute

to wind erosion, places restrictions on erosive activities within these areas, establishes penalties for violations and identifies procedures necessary to obtain permits. In addition, it specifies that prior to grading, developments must have an approved erosion control plan that outlines how the site would be protected from soil run-off during rain events and erosion hazards.

b. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would further prevent significant impacts to soil erosion and the loss of top soil. See Section 4.12.2.C for full text of each of these policies. The implementation of these General Plan policies would also aid in reducing the effect of soil erosion to less than significant.

Policies S 3.5 and 3.6: For any development associated with the implementation of GPA No. 960, the County of Riverside would be required to implement Policies S 3.5 and S 3.6 to minimize the effects of soil erosion by identifying and encouraging mitigation of onsite and offsite slope instability, debris flow and erosion hazards on land undergoing substantial improvements.

Policies S 3.11, 3.13 and 3.14: These policies further reduce significant wind erosion impacts by requiring studies to determine the potential of hazardous impacts from wind erosion and identify the necessary best management practices to prevent the erosion. They also require wind erosion susceptibility to be disclosed for all parcels with high susceptibility. Compliance with these policies would aid in reducing potential adverse impacts of wind erosion to less than significant levels.

c. Compliance with Proposed New or Revised General Plan Policies

Compliance with Policy S 3.12 (see Section 4.12.2.C for full text of policy) would ensure that those parcels susceptible to wind erosion are so noted on their property titles, thereby notifying existing or future property owners of potential development issues related to wind erosion early on. Early awareness would aid in reducing potential adverse impacts related to wind erosion, helping less potential wind erosion effects.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.10.9A, 4.10.9B and 4.10.9C were imposed to reduce impacts from soil erosion and loss of topsoil to less than significant. And, Mitigation Measure 4.10.8A was proposed to address wind erosion specifically. Although potential impacts would be reduced to less than significant through regulatory compliance as per above, EIR No. 441 was programmatic and thus these measures remain applicable to future development accommodated by this project as well.

Existing Mitigation Measure 4.10.8A: New development within identified or potential (as determined by the County Geologist) wind hazard areas shall adhere to applicable provisions of Riverside County Ordinance No. 484.2 or other local, State, or federal requirements established to control or limit the windborne erosion of soil. Prior to the approval of development permits, the County Building and Safety Department shall confirm that the design of any proposed structure, facility, or use incorporates appropriate features to control and/or limit the windborne erosion of soil.

Existing Mitigation Measure 4.10.9A: Riverside County, where required, and in accordance with issuance of a National Pollutant Discharge Elimination System (NPDES) permit, shall require the construction and/or grading

contractor for individual developments to establish and implement specific Best Management Practices (BMPs) at time of project implementation.

Existing Mitigation Measure 4.10.9B: Prior to any development within the county, a Grading Plan shall be submitted to the Riverside County Building and Safety Department and/or Riverside County Geologist for review and approval. As required by the County, the grading plan shall include erosion and sediment control plans. Measures included in individual erosion control plans may include, but shall not be limited to, the following:

a. Grading and development plans shall be designed in a manner which minimizes the amount of terrain modification.

b. Surface water shall be controlled and diverted around potential landslide areas to prevent erosion and saturation of slopes.

c. Structures shall not be sited on or below identified landslides unless slides are stabilized.

d. The extent and duration of ground disturbing activities during and immediately following periods of rain shall be limited, to avoid the potential for erosion which may be accelerated by rainfall on exposed soils.

e. To the extent possible, the amount of cut and fill shall be balanced.

f. The amount of water entering and exiting a graded site shall be limited though the placement of interceptor trenches or other erosion control devices.

g. Erosion and sediment control plans shall be submitted to the County for review and approval prior to the issuance of grading permits.

Existing Mitigation Measure 4.10.9C: Where required, drainage design measures shall be incorporated into the final design of individual projects on site. These measures shall include, but will not be limited to:

a. Runoff entering developing areas shall be collected into surface and subsurface drains for removal to nearby drainages.

b. Runoff generated above steep slopes or poorly vegetated areas shall be captured and conveyed to nearby drainages.

c. Runoff generated on paved or covered areas shall be conveyed via swales and drains to natural drainage courses.

d. Disturbed areas that have been identified as highly erosive shall be (re)vegetated.

e. Irrigation systems shall be designed, installed, and maintained in a manner which minimizes runoff.

f. The landscape scheme for projects within the project site shall utilize drought-tolerant plants.

g. Erosion control devices such as rip-rap, gabions, small check dams, etc., may be utilized in gullies and active stream channels to reduce erosion.

3. Finding on Significance for Impact 4.12.E

Compliance with the above regulations, General Plan policies and existing EIR No. 441 mitigation measures would ensure that significant impacts related to soil erosion and loss of top soil, including wind erosion, are reduced and mitigated to less than significant.

F. Would the project be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Impact 4.12.F – Result in Development on Unstable Geological Units or Soils: Unstable geological units and soils occur throughout Riverside County. Additionally, both natural and human activities have the potential to cause geologic instability. If improperly engineered or constructed, some types of development, particularly those involving heavy loads (concrete dams, for example) or affecting subsurface water levels (e.g., groundwater pumping or replenishment facilities), have an increased potential to cause ground or soil failures. These types of failures are in addition to those triggered by seismic events, as described in earlier impacts above. Future development accommodated by GPA No. 960 would increase the potential for landslides, liquefaction, lateral spreading and subsidence as a result of placement on unstable geological units or soils. However, compliance with existing laws and General Plan policies discussed below would reduce potential impacts related to development on or affected by unstable geological units or soil. Compliance with these would ensure that future development accommodated by the project would have a less than significant impact.

1. Analysis of Impact 4.12.F

As the result of its varied geology, areas subject to landslide hazards, subsidence and liquefaction are found throughout Riverside County. Soils susceptible to subsidence, hydroconsolidation or soil collapse may be affected by a variety of natural or human activities, including earthquakes and the withdrawal of subsurface fluids. Documented subsidence has occurred in the San Jacinto Valley, the Elsinore Trough and the southern Coachella Valley.

Table 4.12-D indicates the components of GPA No. 960 which would be subject to these particular geologic hazards and Table 4.12-C shows the acreage of each hazard type within Riverside County, as well as the portion of the project's known spatial components that occur within these mapped areas. Also, liquefaction and landslide potential were analyzed in Impacts 4.12.C and 4.12.D, respectively.

Past construction of structures and facilities in areas of unstable geologic units and soils may increase the potential for structure damage or interruption of utility service (through disruption of the facility). As a group, the regulatory compliance measures identified below would ensure that future development accommodated by GPA No. 960 does not result in any potentially significant impacts.

2. Regulatory Compliance for Impact 4.12.F

As detailed below, compliance with the following existing regulations and General Plan policies would aid in avoiding or reducing potentially significant impacts resulting from future development on unstable geological units or soils.

a. Compliance with State and County Regulations

Compliance with the following State of California and County of Riverside regulations would further prevent significant impacts related to unstable geology and soils.

Title 24 of the California Building Standards Code: All development within Riverside County is required to be compliant with Title 24 of the California Building Standards Code which, among other things, addresses construction of structures and facilities in areas subject to subsidence and lateral spreading. Prior to any construction in areas on unstable soils, a geotechnical assessment of the site is required by a certified geologist and the resultant recommendations must be implemented as a condition of project approval. These measures address site-specific geology, slopes and soil stability, as well as the requirements for grading, site preparation and building foundations. Also, grading regulations implemented by the County of Riverside require that approved grading plans be consistent with the geotechnical study. Compliance with these regulations would ensure that impacts due to unstable geology or soils are reduced to less than significant.

b. Compliance with Existing General Plan Policies

Compliance with Policies S 3.8, 3.9 and 3.10 (see Section 4.12.2.C for full text of each policy) would ensure future development neither causes unstable geology or soils, nor introduces people and property to sites at significant risk of such. Compliance with these policies would require geotechnical studies be performed and the resultant recommended geotechnical measures be implemented as a condition of project approval to reduce any subsidence or soil collapse risks to less than significant levels.

Other General Plan polices that would also contribute to avoiding, reducing or minimizing risks associated with unstable geology and soils, such as landslide, lateral spreading, subsidence, liquefaction or collapse, include: S 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.7, 3.8, 3.9, 3.10 and 7.7; as well as proposed revised Policies S 2.1, 2.2, 2.3 and 2.4.

3. Finding on Significance for Impact 4.12.F

Compliance with the above regulations and General Plan policies would ensure that significant impacts related to future development being located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse are mitigated and reduced to less than significant.

G. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Impact 4.12.G – Result in Development on Expansive Soils: Expansive soils are widely distributed throughout Riverside County. Future development associated with GPA No. 960 would increase the potential for the placement of structures and facilities in areas susceptible to damage resulting from expansive soils. Compliance with existing laws and mitigation measures from EIR No. 441 help reduce potential impacts related to expansive soils and ensure that they are less than significant.

1. Analysis of Impact 4.12.G

Expansive soils are those soils with a significant amount of clay particles that have the ability to take on water (swell) or give up water (shrink). When these soils swell, the change in volume exerts significant pressures on loads (such as buildings) that are placed on them. Within Riverside County, expansive soils are widely dispersed and can be found in hillside areas as well as low-lying alluvial bases. Future development accommodated by GPA No. 960 could result in construction and occupation of structures in areas underlain by expansive soils. Additionally, the past construction of structures and facilities on these soils may increase the potential for structure damage or, through the disruption of utility facilities, an interruption of utility service. Measures are identified below to mitigate potentially significant impacts associated with future development accommodated by GPA No. 960.

2. Regulatory Compliance for Impact 4.12.G

As detailed below, compliance with the following existing regulations and General Plan policies would reduce potential significant impacts resulting from expansive soils.

a. Compliance with State and County Regulations

Compliance with the following state and county regulations would reduce potentially significant impacts due to expansive soils to less-than-significant levels.

California Building Standards Code (CCR Title 24): All development within Riverside County is required to be compliant with the California Building Standards Code in Title 24, as related to the construction of structures and facilities on expansive soils. Prior to any construction in areas on expansive soils, a geotechnical assessment of the site is required by a certified geologist. This report must make recommendations as to the stability of the site and the requirements for grading, site preparation and building foundations. As a condition of approval, prior to the issuance of any grading permit, the County of Riverside requires grading plans satisfactorily address the geotechnical assessment's recommendations. These measures ensure that impacts from expansive soils are reduced to less than significant.

b. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measure 4.10.7A was imposed to reduce impacts associated with expansive soils to less than significant. Although potential impacts would be reduced to less than significant through regulatory compliance as per above, EIR No. 441 was programmatic and thus this mitigation measure remains applicable to future development accommodated by this project as well.

Existing Mitigation Measure 4.10.7A: Proponents of new development within Riverside County shall adhere to applicable policies and standards contained in the most recent version of the [California] Building Code related to the construction of structures and facilities on expansive soils.

3. Finding on Significance for Impact 4.12.G

Compliance with the above regulations and mitigation would ensure that significant impacts related to expansive soils are less than significant.

H. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for disposal of wastewater?

Impact 4.12.H – Result in Development on Soils Incapable of Supporting Septic Tanks or Alternative Wastewater Disposal Systems: Future development accommodated by GPA No. 960, particularly in areas outside of existing water and sewer service providers, would increase the potential for placement of structures and facilities in areas where soils are incapable of adequately supporting septic tanks or alternative wastewater disposal systems. However, due to laws, regulations and Riverside County policies addressing sewer requirements, potential impacts associated with these types of soils would be avoided or reduced to less than significant levels.

1. Analysis of Impact 4.12.H

Extensive areas of unincorporated Riverside County lie outside of existing special districts that provide sewer services. As a result, development of these lands must rely on the use of septic tanks or alternative wastewater disposal systems. Septic systems are normally designed to function onsite and their proper functioning depends upon specific soil characteristics. For example, liquids must be able to leach (flow out of) the septic system and into the surrounding soil in order to work properly. Also, the septic system cannot be within the groundwater table nor located where it would flow into or otherwise affect nearby streams or other drainages. Thus, in some areas, soils have moderate to severe limitations on the use of septic tanks or alternative wastewater disposal systems. To the extent GPA No. 960 accommodates development in such areas, there is the potential for effects to soils that cannot adequately support the use of septic tanks or alternative wastewater disposal systems.

All septic-using development within Riverside County, however, has to comply with the provisions of the CBC (CCR Title 24, Part 2), Chapters 18 and 18A, which address soils and foundations; and Chapters 16 and 16A, as well as 17 and 17A, which address structural design, structural test and inspections. The provisions of Chapter 18 and 18A apply to all building and foundation systems. All construction, including that of septic tanks is required to have an appropriate geotechnical investigation conducted pursuant to CBC standards. Such investigation includes an assessment as to whether or not the site's soils are suitable for onsite wastewater disposal systems. Pursuant to County of Riverside enforcement of the CBC, no development utilizing onsite septic disposal shall be approved unless the geotechnical study for the site determines that onsite soil conditions are suitable for septic disposal. Developments proposing septic systems must also comply with the Regional Water Quality Control Board Basin Plan, the Riverside County Department of Environmental Health's Technical Guidance Manual and applicable Riverside County ordinances. Compliance with these existing codes, plans and ordinances would ensure that the effects of unsuitable soils on septic systems and alternative wastewater disposal systems are avoided or minimized to less than significant levels.

2. Regulatory Compliance for Impact 4.12.H

Compliance with the following regulations, policies and existing mitigation measures from prior EIR No. 441 would ensure this impact is less than significant.

a. Compliance with State and County Regulations

State and county regulations regarding required geotechnical investigations (studies) as outlined in the California Building Standard Code (Part 2, Volume CBC, Chapters 18 and 18A, "Soils and Foundations;" Chapters 16 and 16A, "Structural Design;" and Chapters 17 and 17A, "Structural Tests and Special Inspections"), as implemented by the County of Riverside, would ensure that a site's soil type, permeability, structural loads, design and integrity,

as well as overall acceptability for a septic or alternative wastewater system are sufficiently established and verified prior to project approval. This process would prevent significant impacts because project's that cannot verify acceptable septic disposal characteristics would not be allowed to be developed.

b. Compliance with Existing County General Plan Policies

Policy S 3.3 of the Riverside County General Plan would further reduce the impact associated with wastewater disposal systems, such as septic tanks and other onsite facilities. See Section 4.12.2.C for full text of this policy. Specifically, this policy requires an applicant prove to Riverside County Building Officials that the proposed building site has soils sufficient to support septic or other wastewater system onsite prior to the issuance of a building permit.

3. Finding on Significance for Impact 4.12.H

The analysis presented above indicates that future development accommodated by the project, GPA No. 960, would have less than significant impacts resulting from septic tanks or alternative wastewater systems placed on unsuitable soils. State laws and Riverside County regulations bar the issuance of building permits for facilities relying on onsite septic wastewater disposal or other alternative onsite disposal, unless geotechnical study verifies the suitability of the soils, geology and hydrology onsite. In this way, the County of Riverside would avoid any significant impacts due to septic placed on unsuitable soils.

4.12.6 Significance After Mitigation for Geology and Soil Resources

Implementation of existing regulations, General Plan policies, mitigation measures and existing requirements would reduce potential impacts associated with fault rupture hazards, groundshaking, liquefaction, landslides and rockfall, seismically induced settlement, subsidence and collapsible soils, soil erosion and loss of topsoil are either avoided or minimized to less-than significant levels. Compliance with existing laws would also ensure structures, people and property are protected from geologic hazards through engineering designed according to the applicable seismic and geological risks or that development is not permitted where such risks are excessive (i.e., higher than typical for the given area or geology) and cannot be avoided. Compliance with existing and proposed General Plan policies, as well as the EIR-specific CEQA mitigation measures presented above, would ensure that any future development activities accommodated by the proposed project, GPA No. 960, appropriately identify any known geologic hazards and fully mitigate, minimize or avoid the associated impacts. As such, project impacts associated with soils and geology would be less than significant.

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Section 4.13

Hazardous Materials and Safety

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4.13.1 Introduction

Riverside County is vulnerable to a wide range of threats or hazards to public safety and property. This section focuses on the risks posed by hazardous materials (hazmat) and safety hazards, including airports and wildfires. Safety hazards relating to landslides, wind erosion, earthquakes and other geotechnical constraints are discussed in Section 4.12 (Geology and Slopes) of this EIR, while hazards related to flooding and dam inundation are discussed in Section 4.11 (Flooding and Dam Inundation). Also, in terms of wildfire, this section focuses on the hazards and fire prevention; for specifics on the entities providing fire services in Riverside County, as well as their equipment, staffing, response times, etc., see Section 4.17 (Public Facilities).

At the outset of this section, it should be noted that there is a difference between "hazard" versus "risk." As described by the State of California in its 2010 Multi-Hazard Mitigation Plan (MHMP), page 243: Hazard is the physical condition that can lead to damage to a particular asset or resource. For example, the term "fire hazard" is related to those physical conditions related to fire and its ability to cause damage, specifically how often a fire burns in a given locale and what the fire is like when it burns (its fire behavior). Thus, "fire hazard" only refers to the potential characteristics of the fire itself.

"Risk," on the other hand, is the "likelihood of a fire occurring at a given site (burn probability) and the associated mechanisms of fire behavior that cause damage to assets and resources." This includes the impact of fire brands (embers) that may be blown some distance igniting fires well away from the main fire. Thus, in this section, for example, fire "hazards" are addressed through identification (mapping), land use restrictions, building code requirements, etc., to minimize the hazard on a regional basis. Fire "risks" are generally addressed at the site-specific level through requirements for roofing types, fire-fuel modification zones, weed abatement and the like. As with fire, most of the safety hazards discussed in this section are addressed through programmatic, regional policies and regulations, since they have the greatest ability to reduce risks to future development and are the principal means under the control and jurisdiction of Riverside County and subject to the Riverside County General Plan.

A. Background on Hazardous Materials

Our modern world, with its myriad of urban and suburban land uses, contains a vast number of facilities that routinely generate, utilize, store and transport a wide variety of hazardous materials through and within Riverside County. At present, there are thousands of different chemical compounds in regular use, and new or modified chemicals are being introduced every day. Large quantities of these materials are refined, manufactured, transported, stored and disposed of in Riverside County. Many of these compounds are also potentially hazardous and can contaminate the soil, air or water upon which human life and activity depends. If improperly handled,

transported, stored, used or disposed of, these materials can exert harmful effects to humans and the environment. Potential contaminants can enter the environment through a variety of pathways, such as improper application or use, improper storage or disposal, or accidental discharge. Hazardous materials are commonly used by all segments of society including manufacturing and service industries, commercial enterprises, agriculture, military installations, hospitals, schools and households. The General Plan indicates that anticipated residential, commercial and industrial growth within Riverside County in the coming years would make dealing with potential problems associated with the handling, transport, storage and disposal of hazardous materials an increasingly important consideration.

B. Background on Airports and Aircraft Hazards

Airports and air-related facilities represent a potential safety hazard to the public and to property due to aircraft accident risks. Public airports are required to maintain airport land use compatibility plans (ALUCPs) to promote compatibility between airports and surrounding land uses (within an established influence area) for the purpose of public safety. The Riverside County Airport Land Use Commission (ALUC) is responsible for reviewing private development and public works projects near airports to make sure they are consistent with approved ALUCPs. In 2004**,** ALUC adopted the Riverside County Airport Land Use Compatibility Plan policy document that establishes land use compatibility planning and policies near airports throughout Riverside County.

The guidelines and operating parameters for the ALUC come from the California Aeronautics Act (California Public Utility Code [CPUC] Section 21670, *et seq.*). The fundamental purpose of ALUC is to promote land use compatibility around airports and to "protect public health, safety and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."

The statutes give ALUC two primary powers by which to accomplish this objective. First, it must prepare and adopt ALUCPs. Second, its staff must review the plans, regulations and other actions of local agencies and airport operators for consistency with that plan. ALUC has no authority over either existing land uses [CPUC Section 21674(a)] or the operation of airports [CPUC Section 21674(e)]. There is little guidance in the statute on airport land use compatibility criteria; however, the law refers that issue to the Airport Land Use Planning Handbook published by the California Division of Aeronautics. Specifically, the statutes say that when preparing compatibility plans (i.e., ALUCPs) for individual airports, an ALUC shall be guided by the information contained in the Handbook. The policies in the ALUCP, including the individual airport compatibility maps, incorporate guidance in the current Handbook.

C. Background on Wildfire Hazards

Wildland fires are a serious and growing hazard in Riverside County, as development slowly encroaches on outlying hills and grasslands. At present, more than 8 million people have homes and businesses in California's wildland areas. As wildland fires meet structural developments, vegetation ceases to burn, but catastrophic fire can continue, sustained by structures igniting. Major wildland and earthquake-induced fires can overwhelm local emergency response resources and cause substantial loss of life and property damage. In Riverside County, more and more people are living in areas of wildland-urban interface, which pose the most danger for wildfire conditions because of the complex mix of fuels (vegetation), topography (hills), accessibility (roads) and structures (homes). This mixture creates the perfect situation for a serious threat to the safety of both the public and firefighters.

Wildland fires are a natural part of the ecological processes in Southern California. In the past, it was presumed that all wildland fires should be extinguished promptly. This has caused "protected" vegetation to grow denser, weakening vegetation in a struggle for living space and increasing destruction by pests and disease. Dead and dying plants add fuel for fire. In addition, the absence of fire can alter or disrupt the cycle of natural plant succession and the associated habitats that form. Recognizing this, land management agencies are now committed to finding ways, such as prescribed burning, to reintroduce fire into natural ecosystems.

Wildland fires are more costly to control and create greater risk of losses to the people, resources and improvements than urban or more isolated fires in outlying areas. In addition, many other factors contribute to making wildfires hotter and more destructive. California has extended droughts, which increase dead and dying vegetation, dry fuel per acre volumes and many days of low humidity. Furthermore, federal policy that sets aside federal lands without requiring an aggressive pre-fire management program, further limits fuel management and increases ignition sources. In some parts of Riverside County, fire danger can be worsened by steep, rugged topography, which would allow wildland fire to spread quickly and make it more difficult to fight.

Santa Ana winds also greatly increase fire danger. These hot, dry winds typically develop when a strong, but stalled, high-pressure system between Idaho and Utah's Salt Lake (the Great Basin High) meets a weak low-pressure system just offshore in Southern California. In these conditions, the easterlies (winds from the east) are turned north and south, where they are channeled and strengthened by the many canyons in the Great Basin. The result is hot, powerful and very dry winds that blow across Southern California and especially through the mountain passes.

The greatest demands on fire suppression resources occur when there are multiple ignitions. For example, widespread fires following an earthquake coupled with Santa Ana winds would constitute a worst-case fire suppression scenario. Because of dry vegetation and recurring Santa Ana winds, the fire danger for Riverside County is considered extremely high during 25% of each year, throughout the months of August, September and October. Because of many large active faults in Riverside County, the probability of a major earthquake is high year-round. Therefore, there is a statistically significant chance that this worst-case fire suppression scenario could occur.

D. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they generally existed at the time the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting constitutes the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant. Because of the countywide scope and nature of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used.

For the hazardous materials baseline data presented and used herein, the following sources were determined to be the best-supported and most current substantial evidence available in the preparation of this section:

- Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, California Government Code (GC) Section 56377; California Department of Toxic Substances Control (DTSC) database, searched March 10, 2011.

- EnviroStor Database, DTSC. Listings for federal Superfund and State Response sites, including Cortese List sites, searched March 10, 2011.

- GeoTracker Database, California Water Resources Control Board (WRCB), searched March 11, 2011.

For the airport and aircraft-related baseline data presented and used herein, the following sources were determined to be the best-supported available and were used in this section:

- Airport Land Use Compatibility Plans (2004 or 2009, as applicable) for the 13 public-serving airports and air facilities in Riverside County and the Chino Airport in San Bernardino County (see Table 4.13-C (Air Facilities In and Around Riverside County) for full listings).

- For military airspace and safety information, the U.S. Department of the Navy's Draft Legislative Environmental Impact Statement (Draft LEIS), dated August 2012, for the Chocolate Mountain Aerial Gunnery Range (CMAGR) Land Withdrawal Renewal. (The Draft LEIS assesses the potential environmental effects of continuing to use CMAGR for military training activities for another 25 years beyond 2014.)

For the wildland fire and emergency planning baseline data presented and used herein, the following sources were determined to be the best evidence available and were used for this section:

- Riverside Unit Strategic Fire Plan. California Department of Forestry and Fire Protection (CalFire). 2012.

- Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan (MHMP). California Emergency Management Agency (CalEMA), March 2005.

- Riverside County Operational Area Emergency Operation Plan. CalEMA, February 2006.

- State of California Multi-Hazard Mitigation Plan. CalEMA, October 2010; source for information on natural disasters, such as fires, earthquakes, etc., and for regulatory background.

4.13.2 Existing Environmental Setting – Hazardous Materials and Safety

A. Hazardous Materials

1. Major Areas of Known Hazardous Materials Contamination

Search of federal and state databases identified 36 major sites of hazmat contamination in Riverside County; i.e., federal Superfund or National Priorities List (NPL), State Response or Cortese List sites. Figure 4.13.1 (Locations of Major Hazardous Material Sites) shows the locations of these major hazmat sites in Riverside County as per the State of California EnviroStor database, and Table 4.13-A (Major Hazardous Material Sites in Riverside County) provides descriptions for each of these major sites. Riverside County contains four "Superfund" or federally-listed hazmat sites, 26 "State Response" sites and 19 contaminated sites on the "Cortese List" (some of which overlap with Superfund and State Response sites).

These hazmat sites may represent potentially significant impacts for any areas of future development accommodated by the proposed project, GPA No. 960, if they are proximate to these hazmat sites. In addition,

information from the Riverside County Department of Environmental Health (RCDEH) and Planning Department indicates there are nearly 9,000 individual sites in Riverside County permitted to transport, generate, handle or dispose of hazardous materials. Many of these are concentrated along major freeways (e.g., SR-91, I-10, I-215, SR-60, etc.). Many are located within the hundreds of industrial business parks or in the large expanses of land dedicated for medium to heavy industrial uses within the county. According to state records, there are also 15 voluntary cleanup sites, 14 school cleanup sites, 12 corrective action sites and 21 tiered permit sites, although some of these include the 36 major sites identified in Table 4.13-A (EnvironStor 2011). With the extensive distribution of hazmat sites throughout Riverside County, it is therefore reasonable to assume that some of the future development resulting from the project would be near sites or facilities where hazardous materials are present.

The following subsections describe various categories of uses and facilities that transport, generate, utilize or dispose of hazardous materials throughout Riverside County.

Table 4.13-A: Major Hazardous Material Sites in Riverside County

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
(1A) March Air Reserve Base (MARB): 3,545 acres total; 3430 Bundy Avenue, Riv., CA 92518 MARB was renamed the March Air Reserve Base (MARB) in 1996. It is on the federal Superfund list as an active cleanup site. Operations at the base include: maintenance and repair of aircraft, vehicles and equipment; operation of a photo lab and printing plant; and fuel management. MARB has historically generated the following hazardous wastes: petroleum, oil and lubricants (POLs), chlorinated and non-chlorinated solvents, corrosives, antifreeze, paint and paint strippers, carbon removers and photographic chemicals. Past activities which have resulted in contamination at the base include burning waste in fire fighting training exercises and discharges to sanitary sewers and storm drains. Groundwater, the primary source of potable water in the area, has been contaminated with trichloroethylene (TCE). There is potential for contamination of soils and surface water. This base was included on the National Priority List (NPL or Superfund) in 1989. A Federal Facilities Agreement (FFA) was signed between the Environmental Protection Agency (US-EPA), California Department of Health Services (DHS), the Santa Ana Regional Water Quality Control Board (RWQCB) and the Air Force in September 1990 to provide for the remediation of the base. MARB was divided into three groups, or operable units, similar to the State of California's removal actions, for remediation. These groups are: 1) groundwater and soil for areas along the east boundary and off-base contamination plume; 2) groundwater and soil for areas not included in units 1 & 3; and 3) groundwater and soil in Area 33. Parcel G is a sector located near MARB's southern boundary that consists of approximately 75 acres of open land with remnants of surface streets from World War II-era military activities.	Federal Superfund Listed	Active – Land Use Restrictions and included on Cortese List
1B) March [Joint] Air Reserve Base (MARB): This facility is an active U.S. Air Reserve Base and part of the Air Mobility Command (AMC). The base's mission is to maintain an effective air-to-air refueling operation capability. For current operations and remediation activities, see 1A above.	Federal Superfund Listed	Active and included on Cortese List
(2) Stringfellow Acid Pits: 3450 Pyrite Street, Riverside, CA 92509 This site operated as a Class I industrial waste disposal site from 1955 to 1972, taking wastes from metal finishing, electroplating, DDT production and aerospace propulsion. The site was composed of unlined ponds placed on alluvium encompassing approximately 17 acres. Quarrying and blasting on the adjacent property have been ongoing throughout the site's existence. Predominant compounds of concern at the site include TCE, heavy metals, pesticides, chloroform and perchlorate. During its life, the site accepted over 34 million gallons of industrial waste, primarily from metal finishing, electroplating and pesticide production, that was deposited in to the evaporation ponds. Spray evaporation procedures were used to accelerate the reduction of pond content volume. In 1969, heavy rainfall caused the disposal ponds to overflow and resulted in the contamination of Pyrite Creek. In 1978, heavy rains caused the RWQCB to authorize the controlled release of 800,000 gallons of wastewater from the site to prevent further wastewater pond overflow and more massive releases. An additional 500,000 gallons of liquid waste were removed to a federally approved facility. In 1979 and 1980, heavy rains again threatened releases from the waste ponds. Between the years 1975 and 1980, approximately 6.3 million gallons of liquid wastes and materials contaminated with pesticides were removed from the site. Groundwater in the vicinity of the Stringfellow site contains various volatile organic compounds (VOCs) and heavy metals such as cadmium, nickel, chromium and manganese. Soil at the site is also contaminated with pesticides, PCBs, sulfates and heavy metals. In 1981, the site was drained and capped. A plume of contaminated groundwater has migrated south from the site approximately four miles towards the Santa Ana River. As it travels southward, the plume reaches neutral acidity and most	Federal Superfund Listed	Active - Land Use Restrictions and included on Cortese List

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
contaminants are stopped within the first 3,000 feet, near the 60 Freeway. Farther south, the only site-related contaminants still detectable are TCE and perchlorate. There are approximately 80 extraction wells and 400 monitoring wells throughout the plume. The extraction wells have been effective in reducing plume migration and removing contamination.		
(3) Alark Hard Chrome: 2777 Main Street, Riverside, CA 92501 This facility was an industrial machining and plating shop where plating solutions were disposed of or spilled onto soils from tanks. The site encompasses approx. 10,000 square feet (0.23 acres) and is located in a light industrial area. Operations at the site ceased in 1985 and the facility has since remained unoccupied. The facility used an electroplating process that involved plating metal parts using chemical baths containing cadmium, chromium and nickel. Grinding equipment and chemical rinse baths were also used during the electroplating process, contributing to the contamination. The soil at the site was contaminated as a result of spills, drips and possible discharge of plating bath solutions during the 14 years of operation. A preliminary investigation completed in 1983 included soil sampling under the building and found higher than normal levels of the three metals. Exposure to these hazardous metals can occur from inhalation, ingestion or direct contact. The contaminated area is inside a secured building and thus no general exposure is anticipated. In February 1987, a Remedial Order (RAO) was issued to the responsible parties (RPs) requiring characterization and remediation of the hazardous substances at the site. In July 1989, a Final Determination of Noncompliance was issued for failure to submit required documents. Although the RPs were briefly in compliance, the California DTSC ultimately conducted the remediation activities. Because of the RP's noncompliance, this case was referred to the State Attorney General's office for enforcement. In July 1990, the DTSC conducted a soil investigation to determine the extent of the remaining contamination. The investigation confirmed high levels of chromium and lead. In June of 1994, DTSC conducted a removal action excavating the highest concentration of heavy-metal contaminated soil from the facility's middle room. A total of 1,810 tons of contaminated soil were excavated and transported to a treatment and disposal facility. The excavated area was backfilled and a temporary cap was constructed. DTSC conducted a groundwater investigation in January of 1995. Groundwater monitoring wells were constructed around the Alark facility, and initial results of the groundwater investigation detected hexavalent chromium in the groundwater. DTSC conducted an additional groundwater investigation; constructing monitoring wells and sampling from 1995 on. Due to the site's high threat to human health and a lack of state and PRP funds to perform necessary work, DTSC requested the U.S. EPA become lead agency and conduct the necessary remedial activities at the site. As a result, U.S. EPA is now the lead agency and the site is on EPA's National Priorities List (NPL). The EPA is conducting a Remedial Investigation and Feasibility Study (RI/FS) and the RI is being performed in several phases.	Federal Superfund Listed	Active and included on Cortese List
(4) Camp Haan Rifle Range: Southwest of MARB west of SR-215, CA 92518 The camp was developed in November 1940 as the Coast Artillery Antiaircraft Replacement Training Center on property adjacent to March Army Air Field. The military reservation was a trapezoidal area about four miles long and three miles wide, encompassing some 8,058 acres.	~~State Response~~ *Military Evaluation*	~~Active~~ *Backlog* and included on Cortese List
(5) Camp Haan - Site Y (J09CA029): West and north of the intersection of Nandina Ave. and SR-215, CA 92518 Firing range associated with Camp Haan; it is being remediated for lead contamination, plus explosives (Unexploded (UXO) and Munitions and Explosives of concern (MEC)) and copper.	State Response	Active and included on Cortese List
(6) Foster-Gardner: 1577 1st Street, Coachella, CA 92236 This property covers approximately 3 acres and is surrounded by a vacant lot to the north and west, a residential area to the south and southeast, and a concrete septic tank/pipe manufacturing and storage yard to the east. The site includes a truck-loading area, a service shop, a fertilizer blending room, an equipment-cleaning pad, two main storage sheds, an open area to the north of the storage sheds, two fertilizer tank farms and a sales office. From 1959 through the early 1970s, operations at this site included formulation of base fertilizer and repackaging and mixing (blending) of pesticides and fertilizers. From the early 1960s to 1990, this company formulated aqueous ammonia at the facility by mixing anhydrous ammonia with water. The company ceased mixing pesticides in the early 1970s. Currently, this company stores herbicides, soil and grain fumigants, insecticides, nematocides, fungicides and fertilizers onsite. Fertilizers are stored and sold in bags and as bulk liquids. Other agricultural chemicals are stored and sold in the original bags and in small metal containers. Operation and maintenance is on-going at the site for natural attenuation. Past manufacturing uses has left pesticides as the contaminant of concern for the site. DTSC is evaluating if monitored natural attenuation is working at the site.	State Response	Active - Land Use Restrictions ~~and included on Cortese List~~
(7) Lockheed – Propulsion, Beaumont No. 1: Highland Springs Road, Beaumont, CA 92223 Historically, the predominant activity at this site was ranching. In the 1950s, the Grand Central Rocket	State Response	Active and included on

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
Company purchased the land and began a remote testing facility for space and defense programs. The Lockheed Propulsion Company purchased the property in 1960 and began operations at the testing facility in 1963. The Beaumont facility is comprised of two sites. Site #1 consists of approximately 9,100 acres where the majority of the testing activities were conducted. Site #2 consists of 2,500 acres and is located approx. 5 miles from Site #1. The two sites were used for the processing, testing and disposal of solid rocket propellant, among other products, in the 1960s and early 1970s. Operations at the facility ceased in 1974. Between 1974 and 1986, portions of the overall site were used for sheep ranching and training heavy equipment operators. These practices were ceased when the potential for contamination was discovered. Hazardous substances that were stored or released onsite during Lockheed's operations include: solvents, purgable organics, TCE, 1,1-dichloroethylene (1,1-DCE), 1, 1-dichloroethane (1,1-DCA), 1,1,1-trichloroethane (1,1,1-TCA) and beryllium. Initial sampling in 1986 confirmed the presence of solvents used to clean and degrease metals in the upper groundwater aquifer. These solvents included DCE, DCA, trichloroethane (TCA), TCE, 1,2-DCA and 1,2-DCE. This relatively small reservoir of groundwater, which is used only for dust control and fire protection, is thought to be separated from the deeper aquifer by a layer of rock, so it is unlikely that the chemicals have entered the deeper aquifer. In June 1989 an Assessment/Site Inspection and limited remedial investigation was conducted at the site. It was agreed by both Lockheed and the DTSC to split the facility into two separate sites. In September 1989, samples were collected from the burn pits, landfill and an area of onetime low-level radioactive waste burial. Laboratory analysis of samples from the burial pit area found very low, nonhazardous (background) levels of two radioactive materials: carbon-14 and tritium (H-3). Sulfur-35, a third radioactive compound suspected to be present, was not detected (it has a short half-life). Principal areas of concern at Site #1 are the pits where various wastes were burned and also a permitted sanitary landfill. The main of exposure risks--inhalation from soil vapors and through consumption of groundwater--are considered very low because the site is located in a very remote area and is currently vacant. The Current Riverside County General Plan designation is Specific Plan–Residential; Current zoning consists of a variety of industrial zoning designations for Riverside County. Future development proposed for the site includes: a proposed master planned community of 11,870 dwelling units with supporting commercial, office, civic, recreational, educational and open space uses. In 2002, perchlorate and 1,4-dioxane were also identified as potential groundwater chemicals of concern. Appropriate treatment technologies being identified to remediate both chemicals.		Cortese List
(8) Lockheed – Propulsion, Beaumont No. 2: Jack Rabbit Trail, Beaumont, CA 92223 See description for Site #1 above.	State Response	Active *and included on Cortese List*
(9) MARB – Poorman Gunnery Range: Located two miles east of MARB near Lake Perris, in Sections 28, 29, 32 and 33 of Township 3 South, Range 2 West, Moreno Valley, CA Firing range associated with MARB, it is being remediated for lead contamination, plus explosives (UXO and MEC) and copper.	State Response	~~Active and included on Cortese List~~ *No further action*
(10) Temecula Bomb Target #107: "Via Carlotta," 5 mi. west of downtown Temecula, CA 92593 The Navy acquired use of the 160-acre property prior to October 1945 and established a bombing target for rocket firing. Temecula Bombing Target No. 1 is located east of downtown Temecula in southern Riverside County, on Via Carlotta. Disposal information for this site is neither complete nor specific. The termination date of the lease is unknown but the Navy had restored the property (implying termination of use) by March 1946. The property is now located in a rural residential area of Temecula. No evidence of military improvements remains on the property.	State Response	~~Active~~ *Backlog* and included on Cortese List
(11) Thomas Ranch: South of Palisades Drive, West of Serfas Club Drive, Corona, CA 91720 This site consists of four former disposal ponds for oil field and refinery wastes, believed to have been in operation from about the 1930s to 1950s. Sampling of the former ponds indicated naphtha, benzene, xylene, ethyl benzene and acids in the tarry materials present. Groundwater has been found to contain thiopenes, an odiferous substance found in crude oil fractions and refinery wastes. The four ponds are fenced, but may present a threat of direct contact with acidic substances. Disturbances of the pits can release volatile aromatic hydrocarbons to the atmosphere. The non-potable groundwater is contaminated. A residential development is located within 300 feet of the site. The site is currently fenced to preclude public access and direct contact with pond materials. Signs are posted on the fences to warn the public against unauthorized entrance to the site. A Remedial Action Order was issued by DHS in August 1986. Onsite investigation and remediation continued in 1990 along with groundwater sampling to clarify prior groundwater information. By the end of 1994, RP maintained the site and had sampled the groundwater. RP filed a lawsuit in Los Angeles against five oil refinery companies as generators responsible for disposal of the waste at the site and in 1995 a Settlement Agreement was signed between the DTSC and the RP.	State Response	~~Active - Land Use Restrictions and included on Cortese List~~ *Certified and Operational*

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
(12) Wyle Labs – Norco Facility: 1841 Hillside Avenue, Norco, CA 92860 This site encompasses 429 acres of land. Wyle started operation in 1957 on the western portion of the site and then developed the site eastwards over time. The site is divided into several areas identified by letters (Areas A, B, etc.). Each typically consists of one or more small buildings, structures and/or outdoor testing areas built for specific testing procedures and to house specific testing apparatus. Testing for the defense, aerospace and manufacturing industries occurred on the site. Components and systems tested include: pumps, valves, piping, propulsion systems, electronic equipment, ordnance and weapons systems. Generally, Wyle's activities were restricted to the central portion of the site; and the edges were left undeveloped to act as a buffer zone between test areas and residential areas located beyond the site boundaries. Adjacent properties include residences to the south, west and north, and a golf course to the east. The site lies in a westward sloping drainage basin, with considerable topographic relief. An ephemeral stream runs through the site and exits near its southwestern corner. Surface water, present in the stream only during and after rainfall events, generally flows from east to west in the ephemeral stream channel. Groundwater on the site is limited to areas adjacent to the stream channel and within a few feet below ground surface.	State Response	Active and included on Cortese List
(13) Techalloy: 2500 A Street, Perris, CA 92370 This site contains unspecified sludge waste, pesticide containers and more than 30 gallons of unspecified contaminants.	State Response	Refer: RCRA
14) Cadiz Lake Sonic Target #7: 68 miles east of 29 Palms, Cadiz, CA 92277 The site encompasses 2,560 acres in eastern Riverside County, owned by the Bureau of Land Management (BLM) and known or suspected to contain military munitions and explosives of concern (e.g., unexploded ordnance), which may present an explosive hazard. The site was used for desert warfare training and Department of Defense (DoD) activities as early as 1942. The site was also used by the Fourth Air Force stationed at March Field, California. Some of this training involved use of live ordnance. No known DoD improvements to site were documented.	State Response	Inactive – Action Required
(15) Camp Young (J09CA029600): 25 miles east of Indio (SR-195/I-10) Camp Young is located on approx. 3,280 acres in the Mojave Desert, east of Indio, and was headquarters for the California-Arizona Maneuver Area (CAMA) during WWII. It was used to train conventional ordnance, ammunition units and several chemical units. The camp is known or suspected to contain military munitions and explosives of concern (unexploded ordnance) and may present an explosive hazard. The Army Corps of Engineers is responsible for the investigation.	State Response	Inactive – Action Required
(16) Corona Annex (J09CA112000): Fifth Street and Hamner Ave., Corona, CA 91720 The 714-acre site was used by the Navy for testing and targeting activities during the 1940s, and included land in-fee and direct purchased for the former Corona Naval Hospital, located north of the City of Corona. The site is bounded by Fifth Street to the north and Hamner Avenue to the east. A former hospital site, it was transferred to Bureau of Naval Weapons for use by the Naval Ordnance Laboratory in 1959. In 1962, 92 acres were transferred to the State of California for use as a Narcotics Rehabilitation Center. In 1962, 14.6 acres were transferred to the Corona Unified School District. Approx. 219 acres were transferred to Lewis Homes and Crestwood Homes development, and 142 acres were also subsequently purchased by other housing developers. The Seal Beach Naval Weapons Station currently owns 245.75 acres. Military munitions were produced or demilitarized at this location and therefore may present an explosive hazard. Facilities known to have existed as part of Corona Annex include a missile evaluation building, fuse assembly examination lab, fuse detonator magazine, high-explosive magazine and an explosive disposal incinerator. An identified burn pit/ordnance disposal incinerator, along with a nearby disposal area (landfill) have minor potential for remaining munitions and explosives of concern (MEC). In 1990, the Riverside Community College undertook a cleanup activity with oversight from the DTSC and removed incinerator ash material.	State Response	Inactive – Action Required
(17) Rice Valley Sand Dunes: Rice Valley, CA 92277 The 5,000-acre site is located in the Rice Valley Sand Dunes and the West Riverside, Riverside and Big Maria Mountains. Current information indicates the site is owned and maintained by the Department of Interior (DoI). This property is known or suspected to contain military munitions and explosives of concern (e.g., unexploded ordnance) and therefore may present an explosive hazard. During World War II, the site was used for practice strafing and bombing runs as part of the Rice Army Airfield and Rice Divisional Camp installation created as part of the CAMA Desert Training Center. The northwestern third of the site is believed contaminated with subsurface unexploded ordnance. A handful of deteriorated 5-gallon cans marked as automotive grease were also found on site.	State Response	Inactive – Action Required
(18) Gavilan Plateau – Maneuver Area: Section 35, Township 4 S, Range 5 W, Perris, CA 92507 This is a former defense site with potential ordnance and explosives contamination. The site will remain idle until the Army Corps of Engineers receives funding to start site investigations with DTSC oversight.	State Response	Inactive – Action Required

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
(19) Riverside Community College – Norco Campus: 2001 3rd Street, Norco, CA 92860 This Formerly Used Defense Site (FUDS) was part of the Corona Annex facility (see Site #16 above).	~~State Response~~ *Voluntary Clean Up*	~~Inactive – Needs Evaluation~~ *Active*
(20) State Lands Commission – Norco: Tract 23507, Sections 11-14, Township 3S, Range 7W, Norco, CA 91760 This State Lands Commission (SLC) property was once part of the U.S. Naval Fleet Analysis Center, Corona Annex (see Site #16 above). In 1984, more than 300 acres of the Corona Annex, including the SLC property, were declared excess by the U.S. Navy and transferred to the General Services Administration. The Navy retained about 129 acres of the Corona facility, which are currently still in operation. An Initial Assessment prepared in 1985 by the U.S. Navy identified various activities involving hazardous materials at the site, including: use of chemicals in a research laboratory, painting and printing operations, auto shops, pesticide application and testing of mechanical and electrical fuses. Lewis Homes of California is in escrow to purchase the SLC property and plans to develop it into single-family dwellings. In 1989, a Preliminary Site Assessment was performed, and subsurface and near-surface soil samples were collected and analyzed for priority pollutants. Results did not indicate the presence of hazardous substances at the site. Therefore, no further action is required at the site.	State Response	De-Listed
(21) University of California Riverside (UCR): 1060 Pennsylvania Avenue, Riverside, CA 92521 Site consists of seven pits in UCR's Agricultural Operations yard on-campus. The pits were used from the mid-1950s to late 1960s for disposal of agricultural wastes. The site was also used for research on experimental pesticides; a wide variety of organic chemicals have been identified at the pit, including organo-chlorine pesticides, chlorinated herbicides, solvents, hydrocarbons and polychlorinated biphenyls (PCBs). The disposal pits are not lined and there is potential for contamination of groundwater used for domestic supply. The pits are covered and there is little potential direct exposure. The first stage of a two-stage RI/FS, which identified the types of soil contamination and location of the pits, has been completed.	State Response	Certified Operation and Maintenance – Land Use Restrictions Only
(22) Certainteed – Riverside: 2100 Avalon Street, Riverside, CA 92509 The facility is a former cement pipe manufacturing plant that routinely used raw asbestos to produce cement pipes and fittings. During its operation, it was suspected through neighbor complaints that asbestos was being improperly disposed and stored at the site. Contamination of soil onsite was confirmed from improper cleaning of a storage area and storing bags of asbestos on the ground instead of immediately transporting waste to a landfill. Facility operations did not contribute to contamination. The site was investigated in 1983 and asbestos soil contamination was found. In 1984, it was confirmed by DHS that the site had been cleaned up properly and a certification was issued.	~~State Response~~ *Corrective Action*	~~Certified~~ *Inactive*
(23) Crossroads Investors III, LLC: 24250 Adams Avenue, Murrieta, CA 92562 The approx. 20-acre site is a vacant lot bounded by a private elementary school to the southeast, Jefferson Ave. to the northeast, single-family dwellings to the northwest and Adams Ave. to the southwest. In the 1950s, part of the site was used for a lead acid battery reclamation and processing facility. Some buildings were used as a Christian school between 1960-1977. Due to lead contamination from the battery recycling operation, in 1988 the U.S. EPA conducted site investigation and emergency remediation at the request of RCDEH. The emergency remediation work included scraping up contaminated soil and capping it beneath an asphalt cover onsite. A draft Removal Action Workplan proposes removal of all contaminated soil posing health risk and offsite disposal at a regulated facility. Some less-contaminated soil posing a lower health risk will also be removed from the site and may be processed elsewhere for reuse.	State Response	Certified
(24) Liston Aluminum Company Site: 9107 Cajalco Road, Corona, CA 92881 The site is adjacent to a stream bed and near drinking water wells. Approximately 25 tons of hazardous waste were deposited at Liston Aluminum Company site in June 1984. This material was sampled, tested and found to contain hazardous levels of zinc and lead.	State Response	Certified
(25) MARB – Site 24: 7,123 acres, east of Riverside, CA 92518 This is a former landfill at West March Air Reserve Base. The landfill occupied an area of approx. 4 acres and received approximately 12,000 cubic yards of waste ash from the Camp Haan solid waste incinerator between 1941 and 1965. The southwestern portion of the landfill also received domestic solid waste, shop waste and demolition debris. There is no apparent remaining threat to groundwater, public health or the environment. Site 24 has been clean closed. Future land use for Site 24 is industrial.	State Response	Certified
(26) MARB – Site 40: 7,123 acres, east of Riverside, CA 92518 This is a former landfill used for disposing wastes from March ARB. It occupies approximately 18 acres of rolling land and a pond in the central portion of the property accumulates surface runoff. Buried drums at this landfill were filled with sodium hydroxide, roofing tar, asphalt solids and waste as well as oil and grease.	State Response	Certified

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
There is potential contamination of surface water and storm water due to exposure to the drums and debris. March ARB was included on the NPL in 1989. An FFA was signed between the U.S. EPA, DHS, Santa Ana RWQCB and U.S. Air Force in September 1990 to provide for the remediation of the base. For details on other efforts at March AFB refer to March ARB site IDNUM 33970002.		
(27) Riverside National Cemetery: East of Riverside, CA 92518 Formerly a part of March Air Reserve Base, this site is part of Operable Unit #2, which is an inactive landfill that overlaid Site 20 and received lime and soda ash precipitate between 1941 and 1984, from Colorado River water treated at settling and evaporation impoundments. The landfill was located on a relatively thin zone of soil or unconsolidated sediments overlying decomposed granitic bedrock. Monitoring results indicate no apparent degradation of groundwater quality at the site. The clean-up required the complete removal of contaminated soil and waste to other sites. And, as confirmed by sampling results, no additional remedial work is necessary at the site. The site is clean and closed.	State Response	Certified
(28) Parkside Drive Site: Parkside Drive and American Canal North Shore, North Shore, CA 92254 The site was formerly referred to as part of the All-American Canal and consisted of approx. one acre with scattered, deteriorated drums and spilled chemical materials thought to be from plating operations. In 1985, the site underwent removal of drums and soil. Post-cleanup soil sampling and field screenings indicated that cleanup was completed to acceptable levels.	State Response	Certified
(29) Universal Propulsion: Pyrite Canyon, Riverside, CA 92509 The site first came to DTSC attention as a result of illegal dumping of hazardous materials there. After investigations it was concluded that wastes, including barium nitrates, phosphates and borates, had been disposed of in a pond on the site. In 1983, a cleanup program was begun at the site, but stopped when bomb casings were uncovered. After investigations determined that the casings did not contain explosive materials, cleanup resumed. Universal Propulsion Company leased the site from 1965 to 1980. In 1984, the DTSC issued Universal Propulsion Company an order to pay for civil penalties and the cost of the investigation and cleanup of the site.	State Response	Certified
(30) Banning Rifle Range: Sections 13 and 14 of Township 3S, Range 1E, Banning, CA 92222 The Banning Rifle Range (RR) is a Formerly Used Defense Site (FUDS) located in the City of Banning along the Interstate 10 corridor in Riverside County. The approximately 84-acre site was used by the U.S. Army as a small arms (rifle) firing range during World War II. The exact location of the rifle range could not be confirmed from available documents or maps. According to the 1994 INPR, 30.3 acres of the site is undeveloped land owned by private individuals. The remaining 63.44 acres is owned by the City of Banning and used for the Banning Wastewater Treatment Plant (WWTP) operations.	Military Evaluation	~~Active and included on Cortese List~~ *Inactive- Requires Action*
(31) Camp Coxcomb: East side of SR-177 approx. 24 miles SW of Freda Camp Coxcomb encompassed 11,520 acres in an undeveloped region of Riverside County, approx. 24 miles west of Freda, California, and 16 miles northeast of Desert Center. The site was established in 1942 as one of several division camps dedicated to training and conditioning troops and testing military equipment. Seven firing ranges were used on the site. Camp Coxcomb was declared surplus in 1944, at which time 10,560 acres were transferred to the DoI. At present, approx. 8,563 acres of the site are owned by the U.S. DoI and under the jurisdiction of the BLM. Approximately 2,957 acres of the site are owned by the Metropolitan Water District of Southern California and various private parties. In addition, approx. 50 mining claims occur on the Camp Coxcomb site. As a result of it former military use, the property is known or suspected to contain military munitions and explosives of concern (e.g., unexploded ordnance) and therefore may present an explosive hazard.	Military Evaluation	~~Active and included on Cortese List~~ *Inactive- Requires Action*
32) Thermal Ground Air Support Base: Approx. 6 miles south of Highways 86 and 111 This 2,555-acre site was acquired by the War Department in the 1940s. The airfield was improved with approximately 250 buildings, heating, lighting, telephone, sewer, water and power systems. In 1948, approx. 2,473 acres were transferred to the County of Riverside for use as a municipal airport (now known as the Jacqueline Cochran Regional Airport). Approx. 40 acres were deeded to the Coachella Valley Water District and approx. 39 acres were deeded to the United Date Growers of California. Currently, the site encompasses 17 parcels totaling 2,549 acres of land owned by both public and private entities. The balance is used for agriculture and airpark development.	Military Evaluation	~~Active and included on Cortese List~~ *Inactive- Requires Action*
(33) Torney General Hospital: 1150 North Indian Canyon Blvd., Palm Springs, CA 92262 The site is a Formerly Used Defense Site (FUDS) that involved conversion of the El Mirador Hotel in Palm Springs to a temporary military hospital. However, no records of survey or potential contamination were on file in the DTSC database.	Military Evaluation	*Backlog* ~~Active and included on Cortese List~~
(34) Blythe Army Air Field – Bombing Target #1: Approx. 7 miles west of Blythe The approximately 1,570-acre Blythe Army Air Field (AAF) is a Formerly Used Defense Site (FUDS). Also	Military Evaluation	~~Active and included on~~

(Map #)* Facility Name-Description-Address	Facility Type	Cleanup Status
known as the Blythe Army Air Base, it is currently part of the Blythe Municipal Airport, located 7 miles west of the City of Blythe. The Blythe AAF was used to train heavy bombardment squadrons as part of a CAMA training field. The Blythe AAF later became a sub-base of Muroc Army Air Field (now Edwards Air Force Base). In 1948, the site was declared excess and the lease with Riverside County was terminated. Only a few of the military improvements still remain on site, including five buildings, two runways and the parking apron. The City of Blythe currently owns the former Blythe AAF and operates it as the Blythe Municipal Airport. Explosives and munitions debris are contaminants of concern for the site.		~~Cortese List~~ *Inactive-Requires Action*
(35) Palm Springs Regional Airport: 3400 East Tahquitz Canyon Way, Palm Springs, CA 92262 The Palm Springs Regional Airport, located in Palm Springs, is a former Army Air Force installation that provided an air field, unit logistic and housing support. Constituents of potential concern at the site are petroleum hydrocarbons, solvents and metals.	Military Evaluation	~~Active and included on Cortese List~~ *No Further Action*

* See Figure 4.13.1
Source: California Department of Toxic Substances Control "EnviroStor" Database, *November 2014* ~~March 2011~~.

2. Hazardous Waste Generators

According to the State of California's EnviroStor database, the five largest generators of production-related hazardous materials in Riverside County produce over 15 million pounds of these materials, including: lead compounds, ammonia, hydrochloric, sulfuric and phosphoric acids and xylene. These hazardous waste generators include food and beverage processors as well as battery, semi-conductor and metal container manufacturers. Although hazardous waste generators are scattered throughout Riverside County, most of the large producers of these materials are located in the western portion. Of the five largest generators described above, two are located in Corona. The other three are located in Riverside, Temecula and Mira Loma, respectively.

3. Commercial and Industrial Uses

Many types of retail businesses within Riverside County commonly store and sell hazardous materials. These materials may be subject to uncontrolled release during an earthquake, fire or other upset. Typical hazardous materials sold at retail outlets includes paints, solvents, cleaning fluids and garden pesticides and fertilizers. The adverse effects produced by the accidental release of hazardous materials may be compounded by the release and co-mingling of several different hazardous materials during such an event. In addition, retail establishments that provide propane or other compressed fuels to the public represent a potentially significant explosive hazard. Hazardous materials are also typically encountered in a number of common businesses. Automotive repair shops and auto parts stores commonly use or carry halogenated cleaning solvents, antifreezes (ethylene glycol), freon and various oils and greases. Auto body shops commonly use a variety of paints, paint solvents and thinners in their operations. Although changes in dry-cleaning processes have reduced the number of hazardous material incidents within this industry, the potential for misuse of materials, including chlorinated solvents, remains.

4. Underground Storage Tanks (USTs)

These are most often associated with automotive service stations, airports and truck stops and represent a risk for the accidental release of hazardous materials into the environment. The effect of such a release may be compounded by the presence of a high groundwater table in the area surrounding the tank. USTs may leak gasoline, diesel or waste oil. Recent and increasingly stringent government regulations for USTs, such as double-walled construction, leak detection systems and protective coatings, continue to reduce UST leaks in the future.

5. High-Tech Industries

Many "high-tech" industries are moving to Riverside County, with more plants predicted to open in the future. To support these industries, the County of Riverside is beginning to experience a considerable increase in the transportation of highly toxic and corrosive materials into and out of the county. Along with these hazardous materials comes the problem of hazardous waste management and disposal. The closing of hazardous waste disposal sites are also forcing the transportation of these materials over greater distances, making these types of waste a continuing hazard.

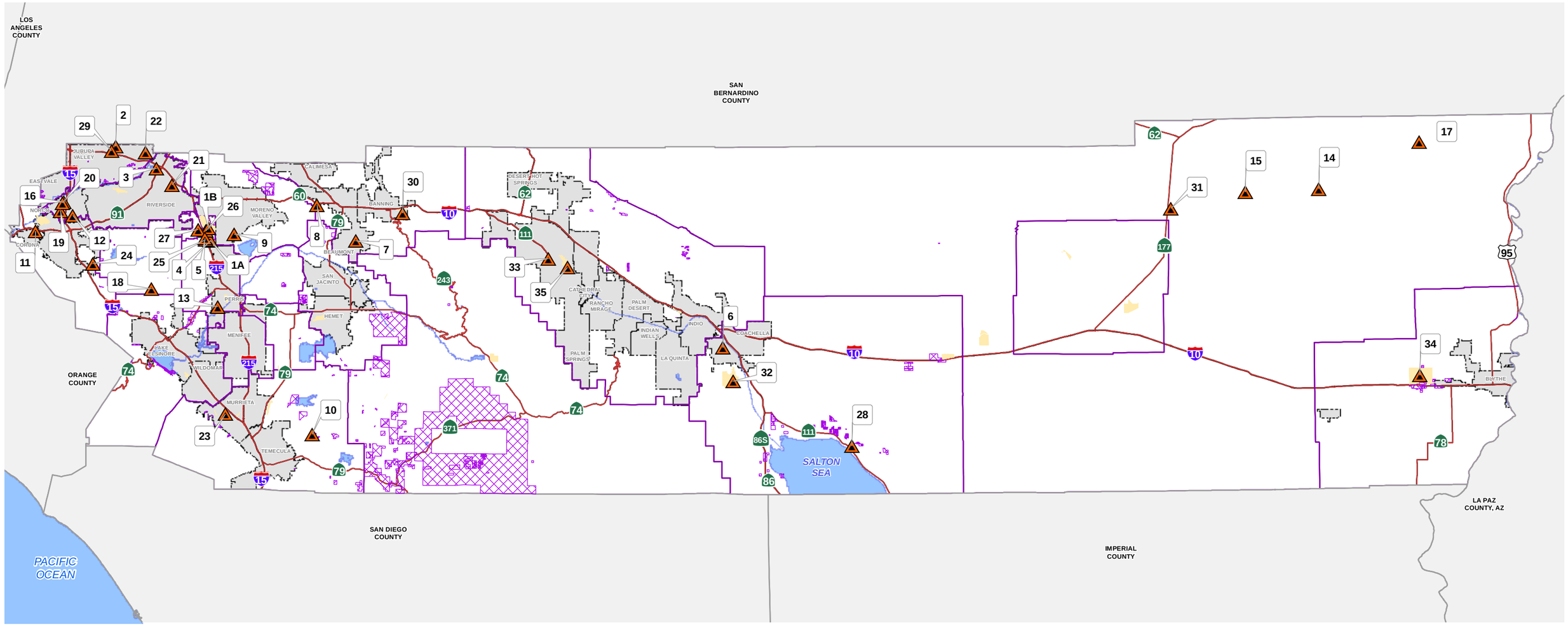
6. Agriculture

There is a long history of agricultural production in Riverside County. Agricultural activities typically include the storage and periodic application of pesticides, herbicides and fertilizers, as well as the storage and use of toxic fuels and solvents. Pesticides and herbicides vary widely in toxicity and persistence in the soil. Pesticides that degrade slowly over time may leave undesirable residues on crops or in the soil, resulting in higher levels of pesticides in the food chain. These substances may also leach into local groundwater supplies, presenting an elevated risk of groundwater contamination. The over-application of chemical substances such as fertilizers, herbicides and pesticides in agricultural production has resulted in the localized contamination of top soils and groundwater. Increased salinity and nitrate levels caused by agricultural runoff are problems throughout Riverside County where dairy farming, crop raising and citrus groves are prevalent.

In addition to chemical substances applied to agricultural crops, large-scale dairies, feed lots or poultry farms pose a potential environmental hazard. Animal waste from these uses could, if not properly disposed of (or otherwise managed), affect the quality of local and regional groundwater; increasing nitrate levels in local drinking water supplies, for example. An examination of groundwater quality has determined that agriculture-induced groundwater contamination occurs primarily in the dairy preserve of Norco, the San Jacinto Valley and the Colorado River Basin.

7. Household Uses

Nearly all Riverside County residents have some type of hazardous material in their homes; for example, motor oil, paints, cleaners and pesticides. Household hazardous materials pose serious health issues for people who improperly use or dispose of these materials. Adverse environmental impacts can occur when household hazardous materials are disposed of in unlined sanitary landfills, where they can leach through the soil and contaminate groundwater. Rural home sites, removed from community natural gas distribution networks often rely upon propane or other compressed fuels for heating and cooking purposes. Fuels of this type are often stored in onsite aboveground tanks, which are periodically replenished by mobile propane (or other compressed gas) providers. These tanks pose potentially significant explosive and fire hazards if improperly maintained.



Data Source: California Department of Toxic Substances (2011) and Riverside County (2011)

Major Hazmat Site
GPA960 Changed Areas
Airports
Highways
Area Plan Boundary
City Boundary
Waterbodies

1A. MARCH AIR FORCE BASE
1B. MARCH AIR RESERVE BASE
2. STRINGFELLOW HAZARDOUS WASTE SITE
3. ALARK HARD CHROME
4. CAMP HAAN RIFLE RANGE
5. CAMP HAAN, SITE Y (J09CA029)
6. FOSTER-GARDNER
7. LOCKHEED PROPULSION-BEAUMONT NO. 1
8. LOCKHEED PROPULSION-BEAUMONT NO. 2
9. MARCH AFB - POORMAN GUNNERY RANGE
11. THOMAS RANCH
12. WYLE LABS - NORCO FACILITY
13. TECHALLOY
14. CADIZ LAKE SONIC TARGET #7
15. CAMP YOUNG (J09CA029600)
16. CORONA ANNEX (J09CA112000)
17. RICE VALLEY SAND DUNES
18. GAVILAN PLATEAU MANEUVER AREA
19. RIVERSIDE COMMUNITY COLLEGE-NORCO CAMPUS
20. STATE LANDS COMMISSION - NORCO
21. UNIVERSITY OF CALIFORNIA RIVERSIDE
22. CERTAINTEED, RIVERSIDE
23. CROSSROADS INVESTORS III, LLC
24. LISTON ALUMINUM COMPANY SITE
25. MARCH AIR FORCE BASE - SITE 24
26. MARCH AIR FORCE BASE - SITE 40
27. RIVERSIDE NATIONAL CEMETERY
28. PARKSIDE DRIVE SITE
29. UNIVERSAL PROPULSION
30. BANNING RIFLE RANGE
31. CAMP COXCOMB
32. THERMAL GROUND AIR STA BASE
33. TORNEY GENERAL HOSPITAL
34. BLYTHE ARMY AIR FIELD BOMBING TARGET 1
35. PALM SPRINGS REGIONAL AIRPORT

Figure 4.13.1

December 16, 2013

Miles
0 10 20

LOCATIONS OF MAJOR HAZARDOUS MATERIAL SITES

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8. Illegal Dumping

The dumping of household hazardous wastes and unreported industrial wastes in municipal landfills is not uncommon. This illegal disposal may contribute to the degradation of soil and groundwater quality, thereby increasing the potential for adverse effect on humans and the environment. Illegal dumping of hazardous wastes is a widespread problem that occurs in a variety of forms, including disposal of hazardous substances on unimproved land (including illegal disposal outside of landfills).

9. Wastewater Treatment

Wastewater treatment plants process millions of gallons of effluent daily within Riverside County. Although they are subject to stringent regulations, the improper design, installation, maintenance or operation of these facilities could allow the release of untreated or partially treated sewage with high pathogen concentrations and/or toxic compounds, posing a threat to public health or natural resources. Monitoring of wastewater treatment facilities is the responsibility of the local RWQCBs. Within rural communities, wastewater treatment is accommodated by individual septic systems. Riverside County maintains regulations for the design of septic systems and leach fields to ensure their proper operation. However, if not properly maintained, septic systems could potentially contaminate groundwater with nitrates, ammonia, salts, metals, organic solvents, grease and oil, and other substances, impairing the beneficial uses of local water supplies.

10. Landfills

Landfills are classified according to the disposal site's ability to contain waste based on an analysis of various criteria, including the site's underlying geology, hydrology, topography and climatology. The principal goal of classifications is the protection of surface and subsurface water quality. There are three main categories of landfills:

Class I Landfills: These landfills are qualified to accept and manage hazardous waste. The primary objective at a Class I landfill is the protection of surface and subsurface water quality. A Class I landfill is required to be located where natural geographic features provide optimum conditions for the isolation of wastes from surface and subsurface waters.

Class II Landfills: Waste facilities under the Class II designation are required to be located where site characteristics and containment structures isolate waste from surface and subsurface waters. Select types of hazardous materials may be deposited at Class II facilities, provided a special variance from standard hazardous waste management procedures is granted.

Class III Landfills: This class of landfill is required to have adequate separation between nonhazardous solid wastes and surface and subsurface waters. They are not permitted to accept hazardous waste.

There are currently seven active landfills within the unincorporated Riverside County. Of these, six are operated by the Riverside County Waste Management Department, while one (El Sobrante) is privately owned and operated. All landfill facilities conditionally accept waste from outside of Riverside County.

All of the landfills currently located in Riverside County are Class III landfills and accept only nonhazardous solid waste. Hazardous waste generated within Riverside County must be disposed of in Kern County or Santa

Barbara County, which have active Class I landfills. Some waste, such as low-level radioactive materials, is also transported out of state for disposal. See Section 4.17.4 for more on landfills.

11. Power Plants and Electrical Substations

These facilities are located near urban areas, providing potential for hazardous materials to come in contact with the public. Hazardous materials commonly found at power plants and substations include fuels used to operate the facility (e.g., gasoline or diesel) and also polychlorinated biphenyls (PCBs), formerly used for insulation. These persistent chlorinated organics are often found in the transformer oil at the base of power transformers. PCBs can enter the soil and groundwater and do not easily deteriorate in the environment. Studies have linked PCBs to cancer in laboratory animals. There are dozens of electrical substations located throughout Riverside County.

12. Military Installations

The County of Riverside contains a number of military installations, the largest is the March Joint Air Reserve Base (MARB, formerly March Air Force Base) located adjacent to the cities of Moreno Valley and Perris, approximately nine miles from downtown Riverside. Contaminated sites exist on the base as a result of the storage, use and disposal of household refuse, construction debris, hazardous substances and petroleum products and their derivatives over the course of the installation's nearly 100-year history. A total of 43 "Installation Restoration Program" (IRP) sites have been identified on MARB. Of these, 16 are located on lands proposed to be released for non-military uses, three additional sites are located on Air Force Village West property and two are located on National Cemetery lands. See Table 4.13-A for full details on each of these sites.

MARB also has 31 active and three inactive underground storage tanks. The majority of these are located in the northeastern portion of the base. In addition, MARB has numerous aboveground storage tanks. A bulk fuel storage area in the northern portion of the base and two hydrant fueling systems utilize the largest of these tanks. The bulk storage consists of three aboveground tanks with a total capacity of 5.88 million gallons of jet fuel (JP-8). This fuel is delivered via an 8-inch pipeline running from Colton in southwestern San Bernardino County. Maintenance and monitoring of this system is conducted by the Air Force Reserves in compliance with the Aboveground Petroleum Storage Act.

An Environmental Baseline Survey (EBS), Base Realignment and Closure (BRAC) and Cleanup Plan (BCP) have been prepared for MARB. These Air Force documents outline the status, management and response strategy, and action items related to the cleanup of on-base contaminated and hazardous sites. These programs outline the cleanup of hazardous materials contamination and restoration of the base, as well as selected areas surrounding the base; a necessary step for eventual property disposal and reuse.

The IRP process for MARB commenced September 1993, with the majority of the cleanup sites completed or near completion at time of base realignment in April 1996. There remain some areas where jet fuel byproducts have contaminated groundwater offsite. These plumes of contamination are likely to require several more years to clean up.

In addition to MARB, the only other active military site in use in Riverside County is the Chocolate Mountain Aerial Gunnery Range (CMAGR), a military training facility located in the desert east of the Salton Sea. See Section 4.15 (Noise) for a full description of the activities occurring at CMAGR, plus additional discussion of the other military sites in or affecting Riverside County. The CMAGR spans nearly 460,000 acres, of which roughly 25% (approximately 108,400 acres) are within Riverside County; the remainder is in Imperial County. Public access is restricted within the range, protecting the public from both the hazards of live-fire exercises and from

unexploded ordnance, hazardous materials (such as depleted uranium and other heavy metals used in munitions, for example) and other safety threats.

According to the Draft Legislative EIS (Draft LEIS) prepared for the continued operation of the CMAGR (page 3-105), in 1992 the Navy performed a Preliminary Assessment of the CMAGR to look for signs of hazardous waste disposals or spills. Of seven sites identified, one (an open burn pit for scrap metal) was eliminated through range operations and maintenance. Another site was cleaned up through the excavation and proper disposal of roughly 45 cubic yards of diesel-fuel contaminated soil. The remaining five sites were trash and debris (empty drums, paint cans, glass bottles, construction materials and old bombing vehicles) disposal sites that occurred in a portion of CMAGR where Navy SEAL training activities had taken place. After research and testing, no hazardous materials were identified, so debris from the site was consolidated and disposed of properly off site. To prevent future spills or contamination, particularly due to petroleum products associated with vehicles and equipment, a number of standard operating procedures (SOPs) are in place for the CMAGR. These SOPs also address stormwater management and ammunition and explosives safety.

Lastly, Riverside County also contains a host of former military bases, camps, facilities, etc., as outlined in Table 4.13-A. The most significant hazardous material found on or near these facilities is unexploded ordnance (e.g., bombs).

13. Medical Facilities

These facilities include clinics, hospitals, professional offices, blood and plasma centers and medical research facilities, which collectively generate a wide variety of hazardous substances in the form of "medical wastes," which may also be biohazardous. These substances may include contaminated medical equipment or supplies, infectious biological matter, prescription medicines, laboratory chemicals, cleaning products and radioactive materials used in medical procedures and for research. Major medical facilities in Riverside County include Riverside County Regional Medical Center (Moreno Valley), Riverside Community Hospital (Riverside) and Eisenhower Medical Center (Rancho Mirage) as well as nearly two dozen other hospitals and major care centers located throughout the county.

14. Medical Waste

Virtually every medical facility, including doctors' offices, surgery centers, health clinics, dental offices and other health professional offices, laboratories, medical research facilities laboratories, and even veterinary offices and clinics, generate medical wastes to one degree or another. Pursuant to the State of California's Medical Waste Management Act (MWMA) (Sections 117600-118360 of the California Health and Safety Code [HSC]), a "large quantity generator" is defined as a "medical waste generator, other than a trauma scene waste management practitioner, that generates 200 or more pounds of medical waste in any month." Small-quantity generators fall under 200 pounds per month.

Pursuant to HSC Sections 119735 and 117960, medical waste generators (both "large" and "small") are required to file a "medical waste management plan" with the County of Riverside. The plan serves to disclose the types and amounts of medical waste generated by a site, as well as specify the onsite waste treatment methods used to render the waste non-hazardous prior to disposal (if applicable), for example through steam sterilization, incineration, etc. The plan must also address the storage and disposal of sharps, biohazardous substances, radioactive waste, chemotherapeutics, human tissues, etc., as well as mixed wastes (containing both medical and non-medical waste types).

The disposal of medical waste is normally performed by on-site autoclaving of red-bagged waste (any medical waste that could possibly transmit a pathogen) to render it inert with subsequent transport to a Class III landfill. The RCDEH has regulatory control over the disposal of medical and biological waste. Needles, syringes and other sharp objects containing blood, body fluids, human or animal body parts as well as clothing stained with blood and/or body fluids generated from non-regulated sources, such as crime scenes, traffic accidents and private residences, are not classified as regulated waste under the MWMA (i.e., HSC Sections 117935 and 117960). However, as these materials may be potentially infected with pathogens, care should be utilized in handling and disposing of such materials.

15. Radioactive Waste

The Riverside County Hazardous Waste Management Plan does not address the management of radioactive waste because the handling, treatment, storage and disposal of these wastes involve complex issues above and beyond those involving general hazardous wastes. The use and disposal of radioactive materials used, produced or otherwise associated with medical procedures is regulated by the RCDEH and the State of California. Disposal of these substances takes place outside of Riverside County under the jurisdiction of the federal government (e.g., the Nuclear Regulatory Commission).

16. Hazmat Transport

Rail and highway transportation routes, and the varied industries that use them, create the potential for hazardous materials incidents within Riverside County. The accidental release of a hazardous material into the environment could have serious consequences on the environment, property and human health depending upon the size, location, type and quantity of the release. Although incidents can happen almost anywhere, certain areas of Riverside County are at higher risk for inadvertent release of hazardous materials. Locations near freeways and roadways that are frequently used for transporting hazardous materials (e.g., SR-91, I-15) and locations near industrial facilities that use, store or dispose of these materials all have an increased potential for a release incident, as do locations along Riverside County's freight railways.

Releases of explosive and highly flammable materials have the potential to cause fatalities and injuries, necessitate large-scale evacuations and destroy both public and personal property. Toxic gas releases could cause injury and fatalities among emergency response personnel and passers-by. Serious health and environmental effects may result from the release of toxic materials into either surface or groundwater supplies. Releases of hazardous materials may be particularly serious if they occur in highly populated areas and/or along heavily traveled transportation routes.

17. Highways

The amount of hazardous materials transported over county roadways on a daily basis is unknown, but is estimated to be steadily increasing due to the growth of overall traffic and industry in Riverside County. In addition to the accidental release of gasoline, diesel, oil and other automotive products during vehicle collisions, the transport of hazardous materials on highways within Riverside County presents a risk of upset and/or release of these substances. Besides the immediate effect of a truck-related hazardous material incident, there are also ancillary effects such as the impact on water and drainage systems, the evacuation of schools, business districts and residential areas, and the effect on traffic in the area. Several major highways traverse Riverside County, including I-10, I-15, I-215, SR-60 and SR-91. These highways provide regional access, as well as access to industrial operations throughout Riverside County, thereby allowing for the transport of a wide variety of

hazardous materials. The areas most vulnerable to accidents along these routes are generally considered to be the on/off ramps and interchanges, where vehicles accelerate and merge.

Of major concern in the trucking industry is the safe operation of the trucks. With the regulation of the trucking industry, spot checks of trucks in many states, including California, have shown that at least 25% of trucks currently in service are not considered safe enough to operate on public highways. The California Highway Patrol (CHP) is responsible for the general enforcement of motor carriers hauling hazardous materials. Truck scales are located on I-10 in Banning, I-15 in the Cajon Pass and on SR-91 in Orange County. Scale masters at these locations issue "compliance ratings," which monitor maintenance, vehicle code, safety and cargo compliance with federal, state and local laws. In addition to inspections at these scales, the CHP Motor Carrier Safety Units also conduct inspections at areas or yards where trucks are parked temporarily between trips. "Mobile Road Enforcement" entails the patrol and inspection of vehicles on city and county roadways, as well as state highways.

The growth of high-tech industry in Riverside County requires the transport of increasing quantities of toxic and corrosive materials into and out of the County of Riverside. The transportation of chlorine is also a concern in Riverside County. Chloride is a particularly hazardous material commonly transported and used for water treatment. Used to purify/treat water, the Metropolitan Water District of Southern California (MWD) operates one of the largest fleets of chlorine-transport trucks in the state, with trucks in daily operation throughout Riverside County.

18. Rail Transport

The many rail lines running through Riverside County often carry hazardous cargoes. Although hazmat transport on railroads is not as prevalent as on truck routes, the substantially greater volumes involved in rail transport pose a greater hazard when an accident does occur. In particular, if there are volatile or flammable substances on the train, and the train is in a highly populated or densely forested area, death, injuries and damage to homes, infrastructure and the environment could occur in the event of a train accident, derailment or fire.

Major rail lines which cross Riverside County are shown in Section 4.18 (Transportation and Traffic). The most common hazardous material incidents involving rail transport are due to train wrecks and derailments. A number of incidents have occurred in Riverside County within the last decade including a trail derailment in Palm Springs in 1999 where 10,000 gallons of diesel oil into the San Gorgonio River and a railcar fire in Beaumont in 2003 which leaked white sand. These types of incidences allow quantities of hazardous materials to enter the soil and groundwater. The location of rail corridors in the vicinity of natural gas and/or petroleum pipelines presents a potential risk of catastrophic release of these fuels in the event of a rail derailment or similar incident. These potential impacts are addressed in Section 4.13.6.

19. Pipelines

Because it spans over 200 miles from east to west, and lies in between Arizona and the Los Angeles metropolis, Riverside County is home to an extensive network of pipeline distribution systems. In particular, Southern California Gas Company (SCGC) has three high-pressure natural gas transmission pipelines that pass through the San Gorgonio Pass (including crossing the San Andreas Fault), supplying a major portion of Southern California's non-transportation energy supply (roughly 28% of the energy consumed annually in the state, according to the MHHP, page 353). Most of the natural gas used in California comes from out of state. The SCGC pipeline system delivers natural gas from the southwestern states into Southern California. A more detailed discussion of natural gas pipelines, including a map of their general locations across Riverside County, may be found in Section 4.10 (Energy Resources).

SCGC transports high-pressure natural gas through two types of lines: transmission ("backbone") and distribution lines. Natural gas is delivered through the utilities' backbone pipeline systems into local transmission and distribution pipeline systems, or to natural gas storage fields. The backbone lines connect to local systems at regulation stations where changes in pressure (from high to low and vice versa) take place. Natural gas for domestic and commercial uses is delivered via underground in-street pipelines. The rupture of these facilities, either during a natural disaster or by an accidental breach caused by human activity, could potentially result in explosive consequences. Such an accident occurred in Pedley in 2002 and resulted in 131 structures being evacuated and 150 people being displaced. No release or accident in Riverside County has reached such devastating proportions. However, all areas with natural gas pipelines are at risk for potential pipeline failure and gas-release hazards.

Petroleum products are also stored and distributed at many major points throughout Riverside County. Of particular interest are the aviation fuel tanks and pipelines located at March Air Reserve Base (MARB). A jet fuel (JP-8) pipeline runs from Colton in southwestern San Bernardino County to the fuel storage facilities at MARB.

Increased urbanization is resulting in more and more people living and working closer to existing gas transmission pipelines that were built prior to adoption of some of the modern land use and pipeline safety regulations that exist today. According to the State MHHP (page 353), compounding the potential risk is the age and gradual deteriorating of the gas transmission system due to natural causes. Significant failure, including pipe breaks and explosions, can result in loss of life, injury, property damage and environmental impacts. Causes and contributors to pipeline failures include construction errors, material defects, internal and external corrosion, operational errors, control system malfunctions, outside force damage (e.g., accidental excavation, vehicle crashes, etc.), subsidence and earthquakes. Growth in population, urbanization and land development near transmission pipelines, together with the addition of new facilities to meet new demands, increase the likelihood of pipeline damage due to human activity and the exposure of people and property to pipeline failure hazards.

20. Airports

Riverside County is host to municipal airports, a military air base and an aerial gunnery range, as well as home to a number of private fields and airstrips. Most of the twelve public-use airports in Riverside County (including cities) are small and serve the needs of local residents for civilian light aircraft flights.

See Section 4.13.2.B, below, for additional details on airport facilities throughout Riverside County. The transport of hazardous materials onboard aircraft is regulated by the DoT. These regulations prohibit the transport of certain categories of hazardous materials, restrict the amount of material transported per flight and establish appropriate safeguards for transport of hazardous materials. Yet, even with stringent regulations on hazardous materials, accidents still occur. Air transport aside, the types of incidents most commonly occurring at airports in Riverside County are illegal disposal of hazardous materials, fuel spills and leaking underground storage tanks (USTs); that is, activities related to aircraft and airport maintenance, rather than air transport.

21. Leaking Underground Storage Tanks

Based on data from the State Water Resources Control Board's "Leaking Underground Storage Tank Information System" (LUSTIS), there are currently 1,190 open or active cases of leaking "Underground Storage Tanks" (USTs) in Riverside County. The majority of UST releases are of vehicular fuels, either diesel or gasoline of various formulations. The most common constituents that are found in gasoline are benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and also methyl tertiary butyl ether (MTBE). These organic compounds pose a threat to groundwater due to the benzene and MTBE's carcinogenic effects on

humans. In addition, MTBE's pervasiveness in groundwater adds to its risk potential. A small percentage of UST releases involve chlorinated industrial solvents, which are suspected carcinogens. The majority of the sites where UST releases have occurred are automotive service stations, with tanks from industrial facilities contributing a smaller, but significant, minority. To date, fuel-related groundwater contamination has not grown to a point where drinking water supply wells are significantly affected. However, the Regional Water Quality Control Boards maintain and periodically update the LUSTIS database with data for their localities.

B. Airports and Aircraft Hazards

Aircraft, airspace and air travel are predominantly regulated by the Federal Aviation Administration (FAA) and the U.S. Department of Defense (DoD) for military aircraft and airspace. Specific public airports and airspace within Riverside County are also addressed by the Riverside County Airport Land Use Commission (ALUC), a regional entity that oversees many of the safety and operational issues associated with airports (including their physical development, configurations and safety). As such, the jurisdictional authority of the County of Riverside lies mainly with land use decisions for unincorporated lands surrounding the air facilities. This sub-section focuses on safety hazards associated with airports and air travel. For specifics on land use and compatibility issues, see Section 4.2 (Land Use).

1. Airport Safety Issues

Statistically, the greatest safety risks associated with aircraft and air travel occur at takeoff and landing (i.e., the first and last two minutes in the air). Accordingly, this translates into the greatest safety hazards being located closest to the airport runways. For this reason, airport master plans and airport land use compatibility plans are created to ensure that people and property are kept out of the most dangerous portions of the runways and that land uses permitted in proximity to the airport are compatible with the air hazards. For example, the Riverside County ALUC's Riverside County Airport Land Use Compatibility Plan Policy Document ("Policy Document") establishes safety zones that limit building heights, restrict hazardous materials and fuel tanks, bird-attracting industries, etc., from close proximity to airport runways. As per the Policy Document (page 2-25), "the intent of land use safety compatibility criteria is to minimize the risks associated with an off-airport aircraft accident or emergency landing." Table 4.13-B (Airport Compatibility Zone Safety and Airspace Protection Factors), below, shows the safety factors associated with various standards compatibility zones used by ALUC. For further discussion on land use compatibility, see Section 4.2.

Risks to People and Structures on the Ground: According to ALUC, "the principal means of reducing risks to people on the ground is to restrict land uses so as to limit the number of people who might gather in areas most susceptible to aircraft accidents" (Policy Document, page 2-25). With this in mind, there are certain land uses of "special concern" because of occupants having reduced effective mobility or being unable to respond to emergency situations. Such uses include children's schools and day care centers, hospitals, nursing homes and other similar uses for young, elderly or handicapped people. Other land uses with restrictions or limitations include: multi-story buildings (because of the increased difficulty in evacuating them), hazardous materials storage facilities (due to the risk of fire or explosion in the event of an air accident) and critical community infrastructure (power plants, electrical substations, communications facilities, etc.) due to the importance of uninterrupted utilities.

Airspace Hazards: Tall structures, trees, towers and other objects, particularly when located near airports or on high terrain, may constitute hazards to aircraft in flight. Federal regulations establish the criteria for evaluating potential obstructions in the development of airspace protection policies by ALUC. Ideally, ALUC, the local government(s), and the state work together to ensure that hazardous obstructions to the navigable airspace do not

occur. The ALUC Policy Document sets out a number of height criteria and restrictions to ensure airspace and avigation safety. Care must also be taken in certain areas to avoid creating electrical interference, glare or other potential flight hazards.

Other Flight Hazards: The ALUC Policy Document (page 2-30) states that, "new land uses that may cause visual, electronic or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area." This also includes avoiding things like: glare or distracting lights which could be mistaken for airport runway lights; sources of dust, steam or smoke which may impair a pilot's visibility; sources of electrical interference with aircraft communications or navigation equipment; and, uses such as landfills and certain agricultural uses that could attract large flocks of birds.

2. Airport Land Use Compatibility

Airports in Riverside County provide an important function for passengers as well as benefit regional economies. Future population growth in Riverside County would create additional demand for air transportation. At the same time, growth and urbanization can also threaten existing as well as future airports by introducing incompatible land uses, people and property into airports' vicinities. To protect airports' future expansion needs from encroaching incompatible land uses and to ensure the public is protected from excessive noise and air-related safety hazards, the State Aeronautics Act (Public Utilities Code Section 21670 *et seq.*) calls for the adoption of airport land use compatibility plans by the Riverside County ALUC to ensure that existing and future land uses planned around public use airports are compatible and safe.

As defined by ALUC, all of the public airports listed in Table 4.13-C, except Palm Springs International and Perris Valley, have influence areas that affect lands within unincorporated areas of Riverside County. These are mapped in the General Plan; for more details, refer to the appropriate Area Plan's Airport Influence Area section for the airport in question.

Table 4.13-B: Airport Compatibility Zone Safety and Airspace Protection Factors

Zone	Zone Name / Type	Safety Risk Level and Airspace Protection Factors
A	Runway Protection Zone and Within Building Restriction Line	**Risk Level:** Very High • Lateral to runways, zone boundary defined by the Building Restriction Line as depicted on adopted Airport Layout Plan drawing. • Length set to include Runway Protection Zones as indicated on Airport Layout Plan drawing. • Nearly 40% of off-runway general aviation accidents near airports occur in this zone.
B1	Inner Approach / Departure Zone	**Risk Level:** High • Encompasses areas overflown by aircraft at low altitudes, typically only 200 to 400 feet above the runway. • Some 10% to 20% of off-runway general aviation accidents near airports take place here. • Object heights restricted to as little as 50 feet.
B2	Adjacent to Runway	**Risk Level:** Low to Moderate • Area not normally overflown by aircraft; primary risk is with aircraft (especially twins) losing directional control on takeoff. • About 3% of off-runway general aviation accidents near airports happen in this zone. • Object heights restricted to as little as 35 feet.
C	Extended Approach / Departure Zone	**Risk Level:** Moderate • Includes areas where aircraft: o Turn from base to final approach legs of standard traffic pattern and descend from traffic pattern altitude. o On departure, normally complete transition from takeoff power and flap settings to climb mode and begin turns to en route heading.

Zone	Zone Name / Type	Safety Risk Level and Airspace Protection Factors
		○ On an instrument approach procedure, have descended below about 500 feet AGL [above ground level]. • Some 10% to 15% of off-runway general aviation accidents near airports occur in this zone. • Object heights restricted to as little as 50 feet.
D	Primary Traffic Patterns	**Risk Level:** Low • Aircraft on instrument approaches below 1,000 feet. • About 20% to 30% of general aviation accidents take place in this zone, but the large area encompassed means low likelihood of accident occurrence in any given location. • Risk concern is primarily with uses for which potential consequences are severe (e.g., very-high intensity activities in a confined area). • Object height limits generally at least 100 feet.
E	Other Airport Environs	**Risk Level:** Low • Only 10% to 15% of near-airport accidents occur here. • Risk concern only with uses for which potential consequences are severe (e.g., very-high intensity activities in a confined area).
*	Height Review Overlay	**Risk Level:** Moderate • Modest risk because high terrain constitutes an airspace obstruction. • Concern is tall single objects (e.g., antennas).

Source: Riverside County Airport Land Use Commission, Riverside County Airport Land Use Compatibility Plan Policy Document, October 2004, Table 3A, page 3-3.

Since 2004, the Riverside County ALUC has adopted new airport land use compatibility plans for all but three of the fourteen airports addressed in the General Plan (see Table 4.13-C). March Air Reserve Base, Hemet-Ryan and Perris Valley Airports do not yet have completed land use compatibility plans. The specific airports covered by the Riverside County ALUC adopted the Riverside County Airport Land Use Compatibility Plan Policy Document ("Policy Document") and the date when each plan was adopted with respect to each airport are listed in Table 4.13-C. As required by state law, either this plan or an earlier one has been adopted for all of the public use and military airports in Riverside County, while preparation of compatibility plans for private use airports is at the option of ALUC. It should be noted that the Chino Airport is located in San Bernardino County, but is included in Table 4.13-C because part of that airport's influence area extends into Riverside County. Similarly, the LA-Ontario International Airport and the Chocolate Mountain Aerial Gunnery Range are also included in the table because associated airspace from these facilities occur in Riverside County. Private air facilities are also included in the table; they are not required to have ALUCPs, but still must conform to FAA requirements regarding airspace and airport operations. The location of the public-serving airport facilities in Riverside County are shown in Figure 4.13.2 (Location of Public Airports in Riverside County).

3. Commercial Aircraft Overflight

The western part of Riverside County has some of the busiest air traffic in the United States, including very heavy commercial, as well as military, air traffic. The airspace in Riverside County is constantly occupied by aircraft arriving and departing from other airports in the region. Frequently, overflights experienced in the communities near Riverside County airports are from distant, rather than nearby, airports. The number of near misses reported by pilots underscores the increasing possibility of a mid-air collision over Riverside County. Accordingly, the use of airspace and aircraft overflight represents a remote hazard to many portions of Riverside County.

There are two major airports in Riverside County, March Joint Air Reserve Base and Palm Springs International, a military air bombing range (the Chocolate Mountain Aerial Gunnery Range), 13 smaller public commercial airports and dozens of private airstrips throughout the county. Airport planning information on these facilities is provided in Table 4.13-C. Four major out-of-county airports also have substantial flight paths over Riverside County:

- John Wayne Airport (Orange County)
- Long Beach Airport (Los Angeles County)
- Los Angeles International (LAX) Airport (Los Angeles County)
- Ontario Airport (San Bernardino County)

4. Military Air Facilities

With its large expanses of open land, Riverside County is home to a number of military bases, including three active facilities: the Chocolate Mountain Aerial Gunnery Range (part of the Bob Stump Training Range Complex), March Joint Air Reserve Base and the Naval Surface Warfare Center (in Corona). The Naval Warfare Center provides technical operations, testing and assessment, and engineering support for the Navy and is not associated with aircraft, munitions or other significant military safety issues. Thus, it is not discussed further in this chapter.

Table 4.13-C: Air Facilities In and Around Riverside County

Air Facility	Location (City)[1]	Date of Adopted Compatibility Plan
Larger Public Airports		
March Global Port / Joint Air Reserve Base (Joint Use)	Moreno Valley	May 29, 1986
Palm Springs International	Palm Springs	March 10, 2005
LA / Ontario International [2]	Ontario, San Bernardino County	NA
Smaller Public Use Airports		
Banning Municipal	Banning	October 14, 2004
Bermuda Dunes	Bermuda Dunes (Riv. Co.)	December 9, 2004
Blythe	Blythe	October 14, 2004
Chino [2]	Chino	March 20, 2000
Chiriaco Summit	Chiriaco Summit (Riv. Co.)	October 14, 2004
Jackie Cochran (formerly Desert Resorts Regional)	Thermal (Riv. Co.)	June 9, 2005
Corona Municipal	Corona	October 14, 2004
Flabob [3]	Jurupa Valley	December 9, 2004
French Valley Airport	Murrieta/Temecula	December 9, 2004
Hemet-Ryan	Hemet	March 18, 1992
Perris Valley	Perris	October 23, 1975
Riverside Municipal [3]	Riverside	March 10, 2005
Private Air Facilities (No Public Use)		
Lake Riverside Estates	Anza	NA
AHA-Quin	Blythe (Colorado River Tribes)	NA
Blythe Service Center, Southern California Edison Company	Blythe	NA
Clayton	Blythe	NA
CYR Aviation	Blythe	NA
W R Byron	Blythe	NA
SCE Palm Springs District, Southern California Edison Co.	Cathedral City	NA
Chapin Medical Pad	Corona	NA
Corona Regional Medical Center	Corona	NA
Desert Center	Desert Center (Riv. Co.)	October 14, 2004
Julian Hinds Pump Airstrip, Metro. Water Dist. of So. Cal.	Desert Center (Riv. Co.)	NA
Devers Substation, Southern California Edison Company	Desert Center (Riv. Co.)	NA
Landells	Desert Hot Springs	NA
Ernst Field	Hemet	NA

Air Facility	Location (City)[1]	Date of Adopted Compatibility Plan
Hemet Valley Hospital Helistop	Hemet	NA
John F Kennedy Memorial Hospital	Indio	NA
Skylark	Lake Elsinore	NA
University Medical Center	Moreno Valley	NA
Tenaja Valley	Murrieta	NA
Desert Air Sky Ranch	North Shore, Salton Sea (Riv Co.)	NA
Desert Regional Medical Center	Palm Springs	NA
Castle	Perris	NA
Eisenhower Medical Center	Rancho Mirage	NA
Riverside Community Hospital	Riverside	NA
Johnson	Riverside	NA
Lake Mathews, Metropolitan Water District of So. California	Riverside	NA
Riverside Metro Center	Riverside	NA
Southern California Edison San Jacinto Valley Service Center	Romoland	NA
Billy Joe	Temecula	NA
Wolf Ranch	Temecula	NA
Inland Valley Regional Medical Center	Wildomar	NA
Pines Airpark	Winchester	NA
Military Air Facilities		
Chocolate Mountain Aerial Gunnery Range[4]	East of Salton Sea (Riv. Co.)	NA
March Joint Air Reserve Base / Global Port (Joint Use)	Moreno Valley	May 29, 1986

Footnotes:
1. Closest city or community to the air facility location. Public facilities in unincorporated areas noted with "Riv. Co."
2. Facility located outside of Riverside County, although affected airspace does occur within Riverside County.
3. Due to incorporation, airport now located within a municipality and does not affect unincorporated Riverside County.
4. Aerial bombing range with restricted military airspace; not an airport per se.

Source: Riverside County, Riverside County Airport Land Use Compatibility Plan, October 14, 2004, as amended.

Bob Stump Training Range Complex: Spanning over 1.2 million acres in southwest Arizona and southeast California, including a portion of Riverside County, the Bob Stump Training Range Complex (BSTRC) is the largest military training facility in the world. The U.S. Marine Corps complex encompasses the CMAGR in Riverside and Imperial counties, the El Centro Range Complex (in southern Imperial County, near the Mexico border), the Air Ground Combat Center at Twenty-nine Palms in San Bernardino County, the Barry M. Goldwater Range in Yuma County, Arizona, and also the U.S. Army's Yuma Proving Ground also in Arizona. See Figure 4.13.3 (Military Airspace Over Riverside County) and Figure 4.13.4 (Military Training Airspace and Training Routes Over Riverside County).

In addition to providing territory for various wide-ranging ground force and surface-fire activities, the BSTRC is used for training exercises that frequently also involve jet and other military aircraft flying high speeds at low altitudes. Thus, in addition to aircraft overflight over and near airports and the military bases and training facilities themselves, portions of the western U.S., particularly the remote desert regions around the Bob Stump Range Complex, may be subject to military jet and helicopter overflight, as well as other military uses of airspace across much of Riverside County, particularly the eastern desert half.

Chocolate Mountain Aerial Gunnery Range: The CMAGR is the other most notable source of military noise in Riverside County. The northern tip of CMAGR is located in Riverside County immediately east of the Salton Sea. In total, the range encompasses nearly 460,000 acres, roughly half of which is public land administered by the U.S. Bureau of Land Management (BLM) and half is federal land administered by the Department of the Navy. A total of 108,363 acres of CMAGR are within Riverside County; the remainder (roughly 75% of the site) is in Imperial County.

Since the 1940s, CMAGR has provided support training that is essential to the readiness of the nation's Marine Corps and Naval Air Forces. CMAGR is a live-fire tactical aviation training range that takes advantage of the area's desert mountain terrain, which is ideal for air-to-ground attack and air-to-air combat training. According to the Navy (Draft LEIS, page 3-10), "25 types of tactical aviation training activities currently occur on a regular basis at the CMAGR and its adjacent MTRs." Tactical military exercises at CMAGR involve live explosives and large force-on-force aviation training, including bombing, rocketry and strafing practice. Artillery, demolitions, small arms and Naval Special Warfare training are also conducted within the range, as well as parachute air drops and helicopter operations. Aircraft use the CMAGR as well as the special use airspace associated with it. According to the Navy Draft LEIS, CMAGR sees 6,000-7,000 training sorties annually for fixed wing aircraft (one sortie represents one flight by one aircraft from takeoff to landing, but may include any number of bombing, strafing or other training runs). Sorties per day tend to average between five and roughly 20 for most CMAGR airspace areas.

In terms of ordnance operations, in a Final EIS issued for the West Coast Basing of the F-35B (jets), the Navy reports that an average of 204,000 rounds of large caliber munitions are expended annually and "approximately 42,000 of those rounds were high explosives" (Final EIS, page 6-18). It also notes that "approximately 80% of all rounds fired are associated with air-to-ground activity on the range and 15% and 2% of the total expenditure were during the CNEL evening and nighttime periods, respectively." Based on the data provided, the Final EIS notes that CMAGR range use occurs 305 days per year.

March Joint Air Reserve Base: March is one of the oldest airfields operated by the U.S. military, having been established as Alessandro Flying Training Field in 1918. March Field's primary mission was pilot training, then in 1931 it became used as an operations base. (It was also home to Bob Hope's first USO show in 1941.) After World War II, the base became part of the Air Force's Tactical Air Command, later the Strategic Air Command (until 1992). Since 1996, March has been an Air Reserve Base under the Air Force Reserve Command (renamed a Joint Air Reserve Base in 2003). The base is still an active military airport, hosting operational flying missions, particularly humanitarian missions, the 4th Air Force of the Air Force Reserve Command and multiple California Air National Guard units. It is also to be used for air cargo (as part of the adjacent March Global Port) in the future.

5. Military Airspace and Overflight

A variety of military airspace uses can lead to conflicts between military and civilian aircraft if an error is made by one or more pilots, mechanical failure, etc. Such operations can take place over vast stretches of public and private lands outside of the military facilities. Because of the speed and power of the aircraft involved, these airspaces can stretch a hundred or more miles from the associated military facility. As a result, there is a very small risk of accident for the thousands of people and properties on the ground below these routes.

The Draft LEIS (page 3-101) states that the FAA is responsible for ensuring safe and efficient use of airspace by military and civilian aircraft and supporting national defense requirements. To do so, the FAA has established regulations for airspace safety, developed airspace management guidelines, implemented a civil-military common system and coordinates cooperative activities between the FAA and DoD. The military schedules all or portions of seven restricted areas associated with the CMAGR and has adopted specific air safety rules to protect users of the airspace above and surrounding the range. In addition, all aircraft operating within the CMAGR are issued specific "rules of engagement" to ensure air activities are conducted safely.

Military Operations Areas: A "military operations area" (MOA) is defined in the Code of Federal Regulations [CFR] (Title 14, Section 1.1) as "airspace established outside Class A airspace to separate or segregate certain non-hazardous military activities from IFR traffic [i.e., aircraft navigating by instrument, such as commercial jetliners]

and to identify for VFR traffic [i.e., aircraft navigating visually, such as civilian light planes, etc.] where these activities are conducted." MOAs are designed for routine training or testing maneuvers. Areas above military bases, near actual combat or other military emergencies are generally designated as "restricted airspace." MOAs have restrictions or prohibitions that occur periodically, rather than continuously, and apply only to the aircraft not participating in the military operation. Typically, MOAs restrict non-military aircraft to certain elevations or speed, but do not prohibit them entirely.

MOAs are often positioned over isolated, rural areas to provide ground separation for any noise nuisance or potential accident debris. Each designated MOA appears on the relevant air avigation sectional charts, along with its normal hours of operation, lower and upper altitudes of operation, controlling authority contact and using agency. Although live-fire training with aircraft weapons can only occur within restricted airspace, the adjacent MOAs enhance the versatility and realism of this training by expanding the airspace available for tactical maneuvers before or following ordnance delivery actions, for example at the CMAGR (Draft LEIS, page 3-8). MAOs in Southern California, including portions of eastern Riverside County, are shown in Figure 4.13.3 (Military Airspace Over Riverside County).

Military Training Routes: As shown in Figure 4.13.4 (Military Training Airspace and Training Routes Over Riverside County), a number of "military training routes" (MTRs) link the various facilities of the Bob Stump Complex, as well as providing routes across the country. MTRs are aerial corridors established jointly by the FAA and DoD in which military aircraft can operate below 10,000 feet mean sea level (MSL) at speeds exceeding the 250 knot limit (nearly 290 miles per hour) that all other aircraft are normally restricted to when below that elevation (the exception is when a craft is instructed otherwise by an air traffic controller, e.g., for hazard avoidance reasons, emergencies, etc.). These runs are conducted as part of military low-altitude, high-speed training and at times may exceed the 10,000 foot MSL level. Military craft are supposed to, however, stay at or below Mach 1 (the speed of sound). According to the U.S. Marine Corps, aircraft using these military training routes may fly as low as 200 feet above ground level at speeds up to, but not exceeding, the speed of sound. As with any dangerous exercise, such as flying so close to the ground, there is an increased risk of accident associated with the activity in the event of mechanical failure, bird strike or other air mishap. However, due to the infrequency of these flights and the distances these military aircraft cover, the overall risk of any single person being harmed by such a mishap is very small.

Military Airspace and Routes Over Riverside County: Thirteen MTRs, which share nine centerlines, are currently located within five nautical miles of the restricted airspace at CMAGR (see Figure 4.13.4). Three of these MTRs are used for training missions at the CMAGR, providing entry to the CMAGR and allowing aircrews to practice long-distance, low-level, terrain following, high-speed flight as a tactic for attacking a target while using terrain to mask their approach and evade detection. Four other MTRs transit airspace near the CMAGR, but do not directly support its operations. Others link the southeastern California bases with other military facilities further north (such as the Twenty-nine Palms Air Ground Combat Center north of Riverside County) and in Arizona to the east (e.g., Yuma Proving Ground and Laguna Army Airfield) and southeast (such as the Yuma Air Station and the Barry M. Goldwater Range). All of these facilities are within 100 miles of CMAGR (Draft LEIS, page 3-8).

As shown in Figure 4.13.4, a number of military facilities are associated with "special use airspace" where limitations exist for non-military aircraft. These include "restricted airspace" (combat zones, roughly directly over the facilities) where civilian and unauthorized aircraft are not allowed and "military operation areas" that are "airspace established outside Class A airspace to separate or segregate certain nonhazardous military activities from IFR Traffic and to identify for VFR traffic where [those] activities are conducted" (14 CFR Section 1.1). The MOAs also provide ground separation for any noise nuisance or potential accident debris associated with

military air and ground training activities. Although MOAs do not restrict VFR operations, pilots operating under VFR should exercise extreme caution while flying within, near or below an active MOA.

According to the Riverside County ALUC, per its 2004 Riverside County Airport Land Use Compatibility Plan Policy Document (page I-3), there are also military and restricted flight areas in Riverside County associated with the Quail Military Operations Area, located north of Blythe Airport and the Kane and Abel Military Operations Areas (part of the CMAGR). Additionally, there is a restricted flight area associated with Camp Pendleton (a U.S. Marine Corps Air Station in San Diego County) located southwest of French Valley Airport.

6. Other Military Safety Hazards

According to the CMAGR Draft LEIS (page 3-101), only about 5% of the range supports "surface uses that cause or may cause moderate to complete levels of physical disturbance." The balance of the site is used for various safety zones to ensure a "99.9999% level of containment." This is a probability of munitions (for inert ordnance) or a hazardous fragment (of live ordnance) escaping the containment area of one in a million, per the Draft LEIS. Figure 4.13.5 (Weapon, Laser and Surface Danger Safety Zones at CMAGR) shows the various weapon and surface danger zones associated with the CMAGR.

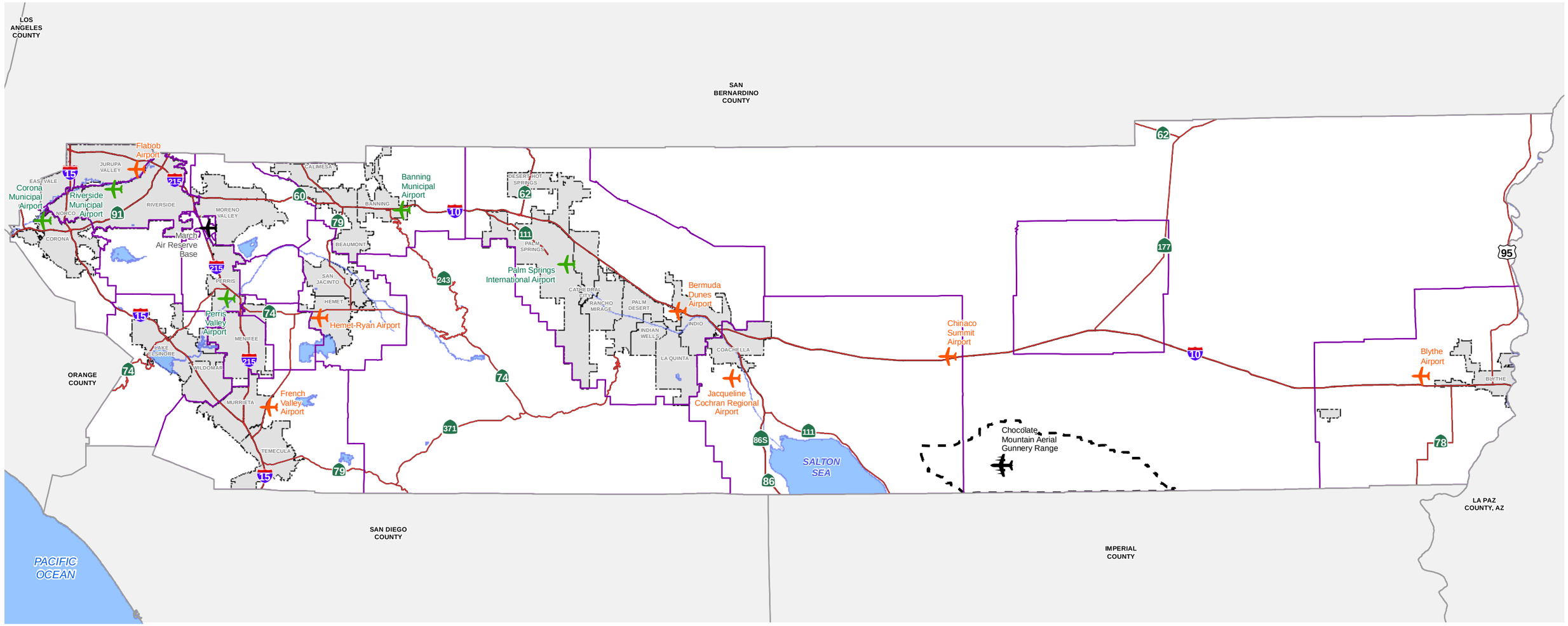
To protect the general public from intentional or accidental entry onto the CMAGR, warning signs are posted along the range perimeter in both Spanish and English. The range boundaries are patrolled by both local and federal law enforcement officials, as well as the military. Procedures are in place to terminate any live fire exercises immediately if unauthorized personnel or vehicles (most often "scrappers" looking for recyclable metal) are found within range boundaries or spotted by airborne crew.

Lastly, the U.S. Marine Corps routinely performs explosive ordnance disposal (EOD) to "neutralize hazards from live fire training exercises" (Draft LEIS, page 3-103). Despite these, unexploded ordnance (bombs, rockets, cannon rounds, etc.) can be found scattered throughout the CMAGR lying anywhere, on the ground or partially to fully buried due to impact and the resultant explosion. Since it is impossible to tell if ordnance is safe from its appearance, it must be treated as if it were live and must not be touched. The military provides EOD personnel with a 24-hour first-response capability for both CMAGR and civil authorities in the event unexploded ordnance is encountered anywhere on or off the CMAGR.

C. Wildland Fires

Among California's three primary hazards, wildfire, and in particular, wildland-urban interface fires, represent the third-most destructive source of hazard, vulnerability and risk. Within California, ten of the 20 largest wildland fires on record have occurred in the last decade alone. Together, these ten fires consumed over 1.7 million acres (an area larger than the entire state of Delaware), over 5,000 structures and, sadly, took 31 lives. See Table 4.13-D (Largest Fires in California Over the Past Decade), below.

As people and developed areas encroach further into wildlands, the risk for wildfires increases. In addition, increasingly dry years in California due to climate change, insect predation and other factors has led to record amounts of dead and dying vegetation accumulating in the state's wildlands. The MHMP (page 234) notes that since 2000, the total annual average acres burned is nearly twice that burned in the pre-2000 period. Hence, both in terms of recent state history and the probability of future destruction of greater magnitudes than previously recorded, the State of California and Riverside County face steep challenges in preventing wildfire losses.



Data Source: Riverside County (2011)

- Public Use General Aviation Airport (Unincorporated Area)
- Public Use General Aviation Airport (Within Cities)
- Military/Civilian Facility
- Military Facility
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.13.2

December 16, 2013

0 10 20 Miles

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RIVERSIDE COUNTY PLANNING DEPARTMENT

AIRPORT LOCATIONS

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U.S. Marine Corps Bob Stump Training Range Complex (BSTRC)
1. Primary mission—training support for all aspects of Marine Corps tactical aviation
2. CMAGR and BMGR West provide the core training capabilities and capacities
3. ECR and YPG provide supplementary training capabilities and capacities
4. Close to Marine and Navy air stations, Camp Pendleton, and aircraft carriers
5. Year-round flying weather

R-2501N
MCAGCC
R-2501W
R-2501S
R-2501E
Twentynine Palms Expeditionary Airfield

U.S. Marine Corps Air Ground Combat Center at Twentynine Palms (MCAGCC)
1. Primary mission—training combined elements of Marine Air Ground Task Forces
2. Premier pre-deployment training range for Marine expeditionary forces
3. Current training capacity – expeditionary units of up to 3,000 troops
4. Proposed expansion would train expeditionary brigades of 15,000 troops
5. Ranges support combined arms training of infantry, armored, air, and support units
6. Fixed-wing aircraft and helicopter aircrews trained in support of ground forces

U.S. Marine Corps Base (MCB) Camp Pendleton
1. Primary mission—training in amphibious and air assault and ground combat
2. Five amphibious assault landing beaches and inland ground combat ranges
3. Aviation training emphasis is on helicopter air assault and support of ground forces
4. MCAS Camp Pendleton is within the MCB

Camp Pendleton
R-2503C
R-2503B
R-2503A
R-2503D
Marine Corps Air Station Camp Pendleton

U.S. Marine Corps Chocolate Mountain Aerial Gunnery Range (CMAGR)
1. Primary mission—training in air-to-ground attack and air-to-air combat
2. Premier Marine Corps range for air-to-ground training with live explosive ordnance
3. Emphasis on training individual aircrews in flights of one, two, and four aircraft
4. Supports training with most types of conventional explosive and inert ordnance
5. Realistic air-to-ground targets in diverse terrain settings
6. Landing zones, observation posts, other ground sites that support air-ground training
7. Supports large force-on-force aviation training exercises that use all of the BSTRC
8. Hosts Navy SEALs desert training

R-2507N
R-2507E
R-2507S
Kitty Baggage Range
Shade Tree Range
R-2510B
R-2510A
Inkey Barley Range
R-2512
Naval Air Facility El Centro
Loom Lobby Range

U.S. Army Yuma Proving Ground (YPG)
1. Primary mission—testing ground combat and aircraft weapons systems
2. Restricted airspace available for air combat training when not needed for testing
3. Air-to-ground target range with limited training capability
4. Ground units deployment areas to support air combat training

R-2306D
R-2308C
R-2306B
R-2306C
R-2308B
R-2308A
Yuma Proving Ground
R-2306A
R-2309
R-2307
R-2306E
Laguna Army Airfield
R-2311

Luke Air Force Base

U.S. Marine Corps Barry M. Goldwater Range West (BMGR West)
1. Primary mission—training in air-to-air, air-to-ground, and surface-to-air combat
2. Instrumented air combat training range (Tactical Aircrew Combat Training System)
3. Numerous ground units deployment areas to support air combat training
4. Air-to-ground range supporting urban combat operations training
5. Realistic battlefield settings in diverse terrain – limited to inert ordnance
6. Individual aircrew training as well as large-scale air-ground combat exercises
7. Core range for large force-on-force aviation training exercises hosted at the BSTRC

Marine Corps Air Station Yuma
Barry M. Goldwater Range West
R-2301W
R-2301E
Barry M. Goldwater Range East
R-2305
R-2304

Marine Corps Air Station Miramar

Marine Corps Recruit Depot
1. Primary mission – basic training to make civilians into Marines
2. Individual and small unit training

MC Recruit Depot San Diego
Naval Air Station North Island
Naval Amphibious Base (NAB) Coronado

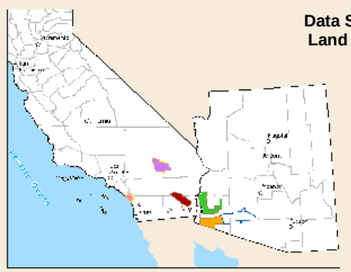
U.S. Navy El Centro Ranges (ECR)
1. Primary mission—training in air-to-air and air-to-ground combat
2. Four small air-to-ground ranges with basic training capabilities
3. Limited to inert ordnance
4. Restricted airspace can be scheduled to support CMAGR missions

Military Airfield
Bob Stump Training Range Complex
Other Marine Corps Range
Other DoD Range

Special Use Airspace
Restricted Airspace
Military Operations Area / Air Traffic Control Assigned Airspace

50 Mile Distance from CMAGR
100 Mile Distance from CMAGR
150 Mile Distance from CMAGR
200 Mile Distance from CMAGR
State Boundary

BMGR West - Barry M. Goldwater Range West
BSTRC - Bob Stump Training Range Complex
ECR - El Centro Ranges
MCAGCC - Marine Corps Air Ground Combat Center
MCAS - Marine Corps Air Station
MCB - Marine Corps Base
YPG - Yuma Proving Ground



Data Source: US Department of Navy, CMAGR Land Withdrawl Draft LEIS, Figure 3-13 (2010)

Figure 4.13.3

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December 16, 2013

0 20 40 Miles

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RIVERSIDE COUNTY PLANNING DEPARTMENT
BOARD OF SUPERVISORS Riverside County California

MILITARY AIRSPACE OVER SOUTHERN CALIFORNIA

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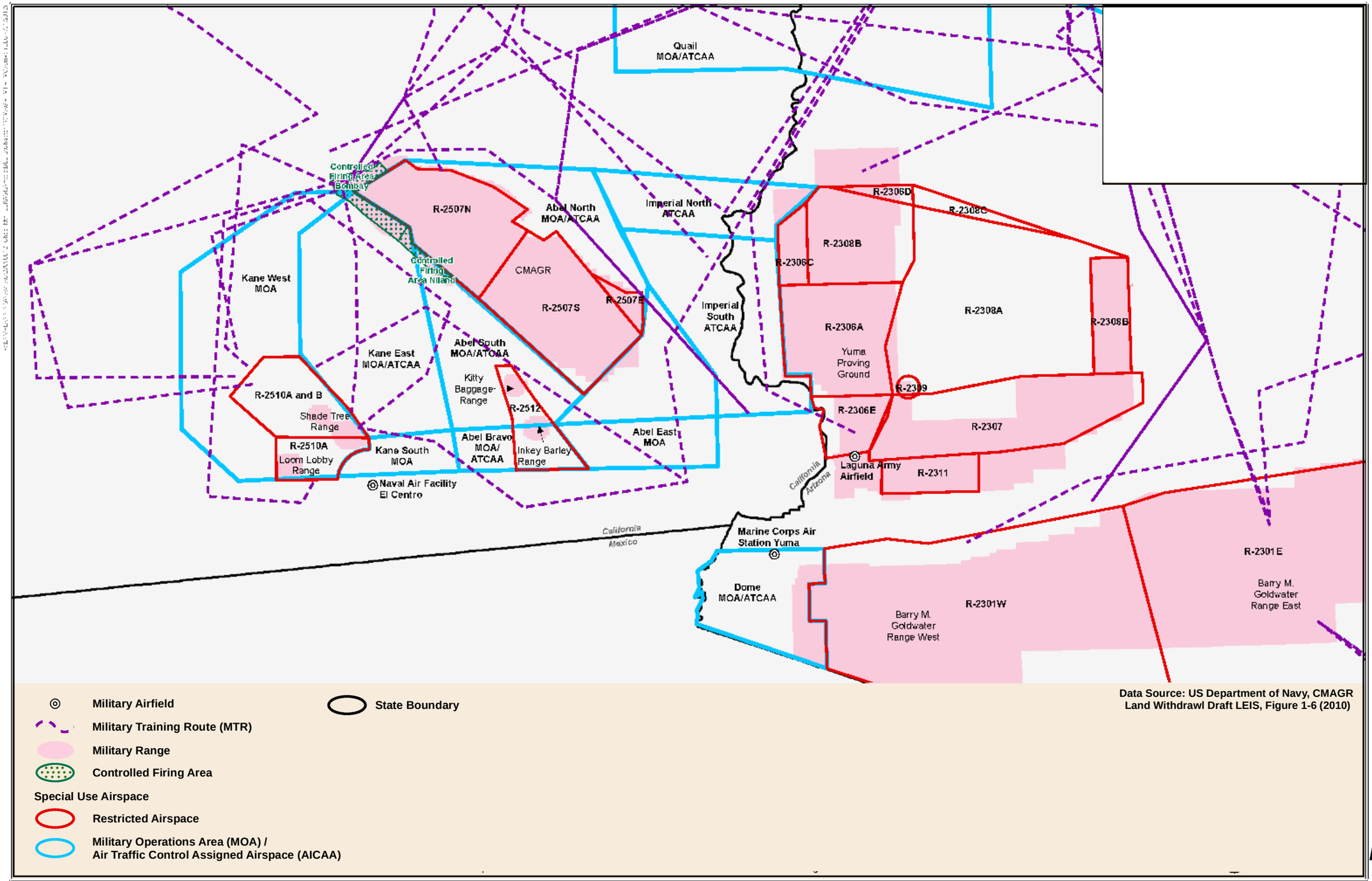

Figure 4.13.4

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December 16, 2013

0 15 30 Miles

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RIVERSIDE COUNTY PLANNING DEPARTMENT

MILITARY TRAINING AIRSPACE AND TRAINING ROUTES

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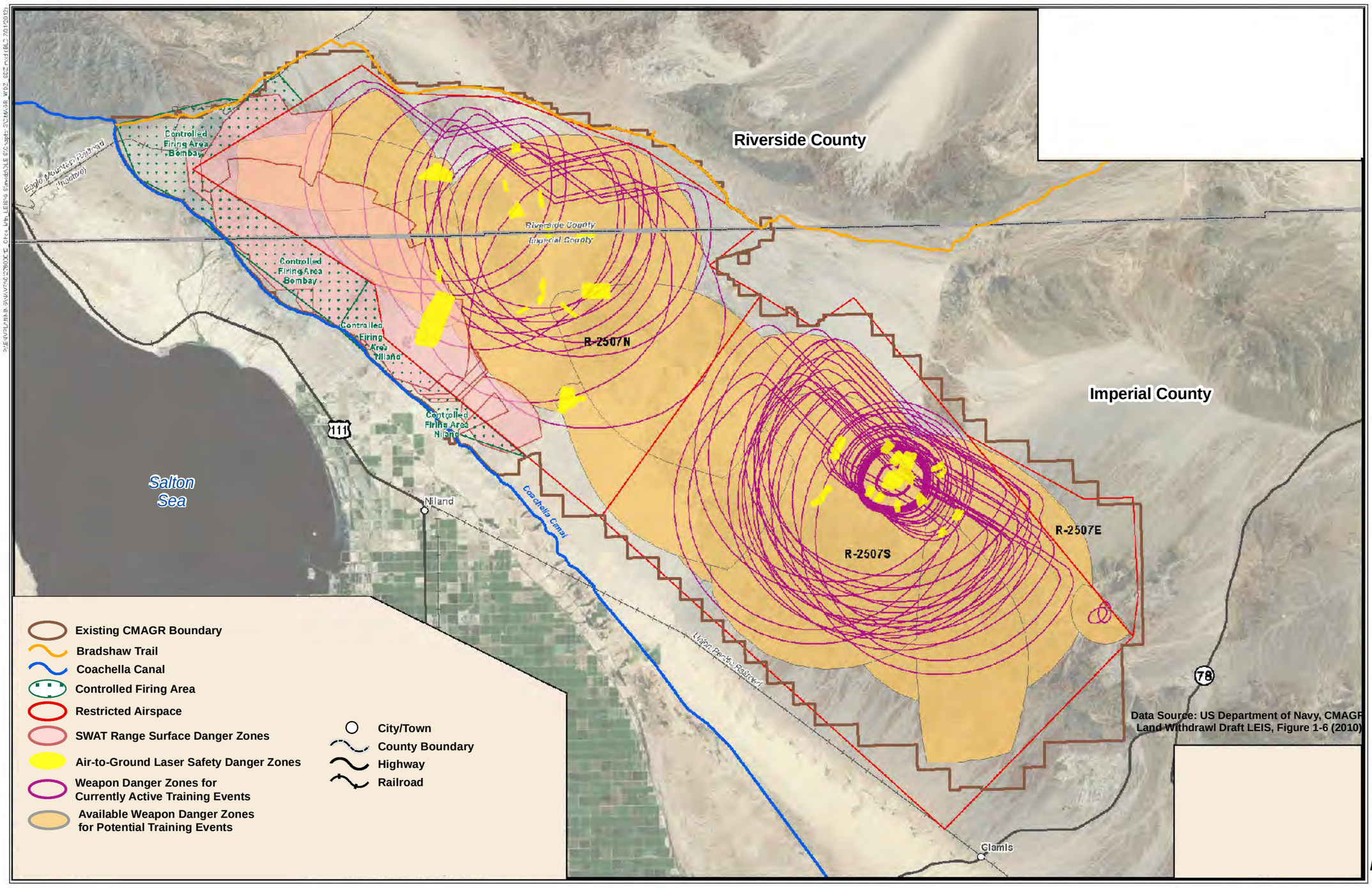

Figure 4.13.5

December 16, 2013

Miles
0 10 20

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RIVERSIDE COUNTY PLANNING DEPARTMENT

WEAPON, LASER AND SURFACE DANGER SAFETY ZONES AT CMAGR

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In Riverside County, the most severe fire disaster to-date occurred during the *2006 Esperanza Fire* ~~Station Fire in August 2009~~, which burned *43,000* ~~160,000~~ acres and killed *five* ~~six~~ firefighters. In October 1993, power lines knocked down by Santa Ana winds started a fire that destroyed 107 homes and burned 25,100 acres in Riverside County. The Governor proclaimed a state of emergency and the President issued a "Major Disaster Declaration" during these events as well as other fire events in Riverside County.

Table 4.13-D: Largest Fires in California Over the Past Decade

	Fire Name (Cause) [1]	Date	County	Acres [2]	Structures	Deaths
1	Rush Fire (lightning)	Aug. 2012	Lassen[3]	315,600	1	0
2	Cedar (human)	Oct. 2003	San Diego	273,200	2,820	15
4	Zaca (human)	July 2007	Santa Barbara	240,200	1	0
5	Witch (power lines)	Oct. 2007	San Diego	198,000	1,650	2
6	Klamath Theater Complex (lightning)	June 2006	Siskiyou	192,000	0	2
9	Basin Complex (lightning)	June 2008	Monterey	162,800	58	0
10	Day Fire (human)	Sept. 2006	Ventura	162,700	11	0
11	Station Fire (human)	Aug. 2009	Los Angeles	160,600	209	2
17	Simi Fire (under investigation)	Oct. 2003	Ventura	108,200	300	0
19	Iron Alps Complex (lightning)	June 2008	Trinity	105,800	2	10
	Totals			**1,875,500**	**5,052**	**31**

Footnotes:
1. Number denotes fire's rank among the top 20 largest fires in California of all time (through the end of 2012). Top 20 records date back to 1932, "the year accurate record keeping began," according to the CDF.
2. Rounded to nearest hundred.
3. Includes acreage from fire's spread into Nevada. California portion totaled 271,900 acres; second largest fire in modern California history.

Source: California Dept. of Forestry and Fire Protection, "20 Largest California Wildland Fires (By Acreage Burned)," 2008. Cal. Dept. of Forestry and Fire Protection, Archived Fires website (http://cdfdata.fire.ca.gov/incidents), accessed May 6, 2013. National Wildlife Coordinating Group, InciWeb website (http://inciweb.org), accessed May 6, 2013.

Table 4.13-E: California State Jurisdiction Wildfire Statistics for 2000-2010

Year [1]	# of Fires	Acres Burned [2]	Dollar Damage [3]	Structures Destroyed
2001	6,223	91,000	$87,295,000	389
2002	5,759	122,800	$173,977,000	327
2003	5,961	404,300	$974,187,000	5,394
2004	5,574	168,134	$126,790,000	1,016
2005	4,908	74,000	$49,393,000	102
2006	4,805	222,900	$60,270,000	431
2007	5,647	425,200	$253,157,000	3,079
2008	4,923	347,800	$151,085,000	992
2009	3,546	73,100	$33,385,000	121
2010	2,961	23,200	$3,217,000	94
Average	***5,031***	***195,200***	***$191,276,000***	***1,195***

Footnotes:
1. Only includes fires under the jurisdiction of the California Dept. of Forestry and Fire Protection.
2. Rounded to nearest hundred.
3. Rounded to nearest thousand.

Source: California Dept. of Forestry and Fire Protection, "CalFire Jurisdiction Fires," 2011.

1. Fire Threats

a. Types of Fires

As delineated by the State MHMP (page 236), there are three types of fires. The first are urban fires, the type of fire most people think of when considering the topic. Urban fires tend to be of limited extent - a single building or block - except in the more rare case of an urban conflagration. (A 'conflagration' is generally used to describe extraordinarily destructive or extensive fires, usually with a moving rather than stationary fire front.) The second type are wildland fires, which generally occur in open lands, vegetated and undeveloped. Wildland fires are the 'classic' wildfire or forest fire that may burn across fields, hills and other natural areas. As shown in Table 4.13-F (Housing Density Classes for Defining Types of Fire Hazard Lands), below, wildlands can have some homes associated with them, though at a lower density than in 'interface' areas. This last type of fires, wildland-urban interface (WUI) fires, occur in the most hazardous and risky areas in which the urban environment extends into open areas, resulting in a complex mixture of fuels, properties and threats. Because of the severe risk to people and property associated with WUI fires, they are the focus of the most extensive fire planning and prevention efforts.

According to the MHMP (page 236), California experiences an average of 5,000 WUI fires each year. The wildland-urban interface is defined by the State of California as "the area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels." Most WUI fires are controlled, limiting their damage and acreage. The remainder cause extensive damage. Wildland-urban interface fires represent a widespread vulnerability for counties like Riverside in which population growth and development pressure continue to push humans into previously vacant, undeveloped wildlands. With the homes, private property and other structures present, WUI fires are the most damaging and even small fires can cause substantial losses. Such losses include damage to infrastructure, the built environment, loss of socioeconomic values and injuries to people.

In addition to homes, businesses and possessions, WUI fires can also cause damage to critical infrastructure, such as electrical transmission towers, railroads, water reservoirs and tanks, communications relay facilities and other assets. In addition to direct fire losses for humans, as well as direct habitat loss for plant and animal species, there may also be secondary negative impacts from the wildland fire related to air quality; loss of prey, foraging, dens, nesting and roosting sites for wildlife; soil erosion resulting in siltation of streams and lakes; mudslides and also downstream flooding. (Non-interface wildland fires also can cause these types of habitat and wildlife impacts.)

According to data released by CalFire, over a five-year average (2000-2005), within CDF's jurisdiction, causes of wildfires included the following: equipment use (27%), vehicles (14%), undetermined (14%), miscellaneous (13%), debris burning (10%), arson (7%), lightning (5%), campfires (3%), power lines (3%) smoking (2%), playing with fire (2%) and railroad activities (<1 %). The State of California notes that "the most common extreme fire behavior factor is high wind, such as Santa Ana winds, that follow a predictable location and seasonal pattern."

Table 4.13-F: Housing Density Classes for Defining Types of Fire Hazard Lands

Class	Description	Lot Size	Density
Wildland	Less than one housing unit per 20 acres.	> 20 acres	> 0.05 du/ac
Rural	From 1 housing unit per 5 acres to 1 housing unit per 20 acres.	5 - 20 acres	0.05 - 0.20 du/ac
Interface	From one housing unit per acre to one housing unit per 5 acres.	1 - 5 acres	0.20 - 1.00 du/ac
Urban	Greater than one housing unit per acre.	< 1 acres	> 1.00 du/ac

Source: State of California Multi-Hazard Mitigation Plan, October 2010, Table 5.Y, page 247.

b. Conflagrations

An urban conflagration is a large, disastrous fire in an urban area, as the result of a wildfire, earthquake, gas leak, chemical explosion or arson, among many possible causes. As noted by the State MHMP, the urban conflagration that followed the 1906 San Francisco Earthquake did more damage than the earthquake itself. Historically, a huge source of danger to cities throughout human history, urban conflagration has been reduced as a general source of risk to life and property through improvements in community design, construction materials and standards, and fire protection systems and services. Although the frequency of urban conflagration fires has been reduced, as noted by the MHMP, they still remain a risk to human safety, particularly because of the current trend toward increased urban density and infill in areas adjacent to the wildland-urban interface. As growth pressures create ever-growing demand for housing close to jobs and urban centers, areas previously left as open space due to steep slopes and high wildfire risk are being reconsidered as infill areas for high-density housing.

2. Wildfire Potential Associated with Vegetation

a. Fire and Vegetation Relationship

As reported by the State of California (MHMP, page 250), "Fire is a natural and critical ecosystem process in most of California's diverse terrestrial ecosystems, dictating in part the types, structure and spatial extent of native vegetation in the state." Many of California's ecosystems are adapted to a historic 'fire regime,' which characterizes historic patterns of fire occurrence in a given area. Fire regimes include temporal attributes (e.g., frequency and seasonality), spatial attributes (e.g., size and spatial complexity) and magnitude attributes (e.g., intensity and severity), each of which have ranges of natural variability (MHMP, page 250).

Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability, which currently is prevalent throughout California. In general, when compared to historic fire regimes, many mixed-conifer forests now experience fires that are more intense and severe, while chaparral shrublands experience fire at a greater frequency. Both trends have profound impacts on ecosystem stability throughout California.

A principal cause of intensifying wildfire severity in mixed-conifer forest types in the state is the mounting quantity and continuity of forest fuels that have been brought about by a century of fire exclusion. Fire exclusion in California and throughout the western U.S. has been attributed largely to fire suppression, elimination of Native American ignitions and introduction of grazing that removed fine fuels necessary for fire spread in and between forested stands. Conifer forests that historically experienced frequent but low-intensity surface fires, which are prevalent throughout California, are now predisposed to high-intensity, high-severity crown fires (because of the greater infrequency of fires due to greater fire suppression efforts).

Conversely, native chaparral shrublands, which typically burn in high-intensity stand-replacing events, are threatened due to too-frequent ignitions, which are leading to a type conversion to non-native grasslands. This trend is particularly acute in Southern California where burgeoning population growth in fire-prone areas has resulted in increased ignitions through accident or arson. As a result, this has contributed to the conversion of much of the original sage scrub habitats, particularly in flatlands and low hills, to non-native grasslands and ruderal (weedy) fields.

b. Fire-prone Vegetation and Fuels in Riverside County

In Riverside County, as well as in San Bernardino and San Diego counties, there have been dramatic and historic changes in the montane chaparral and timber fuel types in the last few years. The persistent drought, insect damage, frost damage and disease have killed huge stands of timber and brush over tens of thousands of acres in wildland areas, particularly in the local mountain ranges. Wildland fires can also occur in suburban and rural areas of the county, as well as vacant weedy land in developed areas, timber or forestland, range land, watershed, brush or grasslands.

Much of Riverside County is considered to have a moderate to high potential for wildland fires according to CalFire. In these areas, special state statutes govern development. The CalFire Riverside Unit categorizes wildfire risk by vegetation type, moisture content, terrain and topography, among other factors. The following descriptions of the vegetative fuel types occurring within Riverside County, and the relative fire risks associated are from the Riverside Unit's 2012 Strategic Fire Plan.

Generally, Battalion 1 (Perris) consists of a light grasses in the more populated areas, with medium fuels found in the hills of the more sparsely populated areas, such as along Santa Rosa Mine Road and in the Juniper Flats area. The Battalion 2 (Lake Elsinore) area east of Interstate 15 (I-15) is comprised mainly of open grasses and weeds, typically providing greater than 50% ground cover and having a significant fire history. The west portion of the battalion consists of a mix of SRA, LRA and USFS lands in a CalFire Direct Protection Area (DPA) and USFS lands in a federal DPA. This area is known collectively as the Ortega Front country and is bordered on the south by La Cresta and to the north by the border between Battalions 2 and 4. This area poses one of the greater fire risks in Riverside County and consists primarily of coastal chaparral (heavier brush). There are portions of this area with significant fire history and areas that have no recorded fire history.

Battalion 4 covers the Corona area, including the Santa Ana River, which features a continual bed of fuels in the river bottom from just east of the Van Buren Boulevard Bridge in Pedley extending west to Highway 71 along the county line. The river bottom fuel load is made up of annual grasses, bamboo (arundo) and various species of brush and trees. In the Chino Hills area, annual grasses are abundant, with small patches of brush and a few oak and sycamore trees in the canyons. Most of this area was burned in the 2008 Freeway Fire. In the Dawson Canyon and Spanish Hills area further down the Temescal Valley, the fuels are annual grasses and light brush. With the exception of a few canyons, these hills have been burned numerous times over many years. Because of the light fuel load, the large fires in this area have been predominantly wind driven. In the foothills that run along the Cleveland National Forest (on the west side of the valley) the fuels are generally light grasses with heavy brush (chaparral). CalFire and USFS have been maintaining the fuel breaks that run along the Main Divide Truck Trail and down several main ridge lines into the Temescal and Corona Valleys.

In the Beaumont (Battalion 3) region, fuels vary widely, ranging from grass, coastal sage scrub, chemise and Russian thistle to scrub oaks. In the area north of Cherry Valley, manzanita (a tall chaparral shrub species) is the predominate fuel. The south area of the battalion, on the northern slopes of the San Jacinto foothills, has been primarily reduced to annual grasses due to conversion from recent fires. However, some larger pockets of coastal sage and chaparral still remain.

In the San Jacinto (Battalion 5) region, below 2,000 feet elevation fuels consist mostly of grasses and coastal sage scrub. Above 2,000 feet, the fuel type is dictated by the length of time since the last fire. Areas burned less than 20 years ago feature grass and medium brush; those that have burned over 20 years ago are composed of heavier mixed brush and tall chaparral. Due to the persistent drought conditions over the last few years, the mature chaparral fuels in the San Jacinto region show a high dead-to-live ratio.

The five stations comprising Battalion 11 in the San Jacinto Mountains encompass: Station 23 (Pine Cove), Station 29 (Anza), Station 30 (Pinyon), Station 53 (Garner Valley) and Station 77 (Lake Riverside). In the Pine Cove/Idyllwild area covered by Station 23, fuels are composed of mature chaparral with a mixed conifer forest overstory. The predominant understory species include manzanita, chaparral whitethorn, deer brush and chemise. The area has a persistent grass understory of 12 to 18 inches high and often matted down, which adds to the fuel loads. The overstory consists of mixed stands of Jeffery pine, ponderosa pine, Coulter pine, incense cedar, white fir and sugar pine. There is no recorded fire history for the area since fire records started being kept around 1924, therefore it is assumed the vegetative community is at least 75 years old. In the Anza area (Station 29), the fuel types consist of approximately 25% grass groundcover, mostly located on the valley floor on the Cahuilla Indian Reservation and along the Cooper Cienaga Truck Trail to the south. Heavier mixed brush and chaparral cover roughly 30% of the area, intermixed through the valley. Grass and medium brush cover approximately 45% of the area and include larger stands of manzanita and red shank averaging 10-15 feet high. The Station 30 (Pinyon) area features brush of varying thickness and height, with patches of grass intermixed throughout. Along Highway 74 and some of the communities, a fuel reduction project has helped thin and remove fuels to allow safe egress from the mountain. In the Garner Valley (Station 53), the extended drought has left an abundance of dead and downed fuels as well as a high dead-to-live ratio in the chaparral fuels and an extensive grass understory. Fuel reduction projects have helped thin and remove fuels near transportation corridors, local communities and camping areas. Lastly, the Lake Riverside (Station 77) area, near Aguanga, consists mainly of tall grasses near Highways 79 and 371. Further to the northeast along Highway 371 the fuels change into medium brush and tall chaparral at the slightly higher elevations.

Battalion 15 (Temecula) covers the southwestern portion of Riverside County and includes Station 12 (Temecula), Station 75 (Bear Creek), Station 92 (Wolf Creek) and Station 96 (Glen Oaks). The region displays the classic fuel pattern of inland Riverside County with annual grasses and weeds predominant in the flatter areas, trending to brush, such as chamise, sage, buckwheat and similar sage scrub species, in the less disturbed areas and hills. In the higher hills, the brush tends towards chaparral species. Battalion 13 (Menifee), which covers roughly 42 square miles, is located north of the cities of Murrieta and Wildomar, south of the City of Perris, west of the Winchester area and northeast of the City of Lake Elsinore. Fuels in this area consist of light native brush, i.e., classic Riversidean sage scrub species. The area is surrounded and interspersed with extensive grass understory, particularly in disturbed areas. Lastly, Battalion 17 (Cajalco) lies between Perris Valley to the east and Temescal Valley to the west. It encompasses two ecological reserves: Lake Matthews-Estelle Mountain Reserve and Harford Springs Reserve. Fuels in the area consist mostly of annual grasses and coastal sage scrub with some pockets of chaparral species in canyons and on the northern slopes.

3. Fire Responsibility Areas

a. Types of Fire Responsibility Areas

In the 2010 MHMP (page 239), the State of California notes that "There are literally hundreds of agencies that have fire protection responsibility for wildland and WUI fires in California." Often the primary responsibility for a parcel will come down to two organizations, one for wildland fire protection and the other for structural or 'improvement' fire protection. Thus, in order to ensure that these layers of responsibilities, as well as the myriad of rules, regulations, policies and ordinances addressing fire, do not cause conflict or confusion, in 1981 the State of California established specifically defined "Federal Responsibility Areas," "State Responsibility Areas" and "Local Responsibility Areas." Under California State law, each of these areas is specifically defined and the lands falling within each are explicitly mapped as well. The MHMP (page 239) describes each of these areas as follows. See Section 4.13.3.C for specifics on related regulations.

Federal Responsibility Areas: Federal Responsibility Areas (FRAs) are fire-prone wildland areas that are owned or managed by a federal agency such as the U.S. Forest Service, National Park Service, BLM, U.S. Fish and Wildlife Service or DoD. On FRA lands, primary financial and rulemaking jurisdictional authority rests with the federal land agency. In many instances, FRAs are interspersed with private land ownership or leases. Fire protection for developed private property is usually *not* the responsibility of the federal land management agency; structural protection responsibility is that of a local government agency.

State Responsibility Areas: State Responsibility Areas (SRAs) are those lands within California that meet specific geographic and environmental criteria (see below). In these are areas CalFire has legal and financial responsibility for wildland fire protection. CalFire also administers the fire hazard classifications and building standard regulations that apply. Specifically, SRAs are defined as lands that 1) are county unincorporated areas; 2) are not federally owned; 3) have wildland vegetation cover (forest, brush, grasslands, etc.) rather than agricultural or ornamental plants; 4) have watershed, range, forage or other such value; and, 5) have housing densities not exceeding three units per acre. Similar to the FRAs, where SRAs contain built environment or development, the responsibility for fire protection of those improvements (non-wildland) is that of a local government agency. Essentially, SRAs are private lands in WUI areas within the unincorporated county. SRA wildlands also require disclosure for real estate transactions and owners of properties in wildland areas are subject to the maintenance requirements of California Public Resources Code (PRC) Section 4291. SRA maps are updated by the State of California every five years.

Local Responsibility Areas: Local Responsibility Areas (LRAs) include land within incorporated cities, cultivated agriculture lands and non-flammable areas (e.g., deserts) and those lands that do not meet the criteria for SRA or FRA. LRA fire protection is typically provided by city fire departments, fire protection districts and counties. *Many cities in Riverside County receive fire protection by CalFire, under contract to local governments.* ~~Or, in some cases, such as for many of the cities in Riverside County, by CalFire under contract to local governments.~~ LRAs may include flammable vegetation and wildland-urban interface areas where the financial and jurisdictional responsibility for improvement and wildland fire protection is that of a local government agency.

b. Fire Responsibility Areas in Riverside County

As shown in Figure 4.13.6 (Fire Responsibility Areas in Riverside County), in Riverside County, SRAs comprise the largest portion of unincorporated territory. LRAs are associated mostly with the cities, and there are large swaths of FRAs within Riverside County as well. As calculated by the Riverside County GIS Department, the acreage for each of these jurisdictional areas is as follows:

- **State Responsibility Areas (CalFire):** 544,180 acres of unincorporated Riverside County. (In addition to the unincorporated Riverside County territory, the CalFire Riverside Unit also encompasses 2,630 acres of adjacent San Diego County and 620 acres of Orange County.)
- **Local Responsibility Areas (CalFire):** 13,206 acres of unincorporated Riverside County through wildland contract with the County of Riverside. Plus the incorporated cities contracted to use CalFire as their local firefighting service.
- **Local Responsibility Areas (Local Agencies):** 572 acres of unincorporated Riverside County are under the jurisdiction of other agencies (e.g., city fire departments, etc.).
- **Federal Responsibility Areas (BLM):** 52,650 acres of Riverside County are under BLM jurisdiction.
- **Federal Responsibility Areas (USFS):** 62,520 acres of Riverside County are under USFS jurisdiction.

4. Fire Hazard Legislation and Severity Zones

Since the early 1990s, a number of regulations have been promulgated by the state to address fire hazards within the wildland-urban interface, in which the risk of fire hazards is substantial. To ensure land use and building standards adequately reflect and protect a region's fire hazard in WUIs, the State (CalFire) has prepared, and periodically updates, sets of "fire hazard severity zone" maps. These fire hazard severity zones (FHSZs) are defined under Section 4702.1 of the 2007 California Fire Code (CFC) as "geographical areas designated pursuant to [PRC] Sections 2401 through 4204 and classified as Very High, High or Moderate in State Responsibility Zones or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to [GC] Sections 51175 through 51189."

Each of these zones is described below. These zones are used to determine the appropriate construction materials for new buildings within the WUI. Specifically, the regulations of the California Building Code (CBC) Chapter 7A ~~(as amended via Riverside County Ordinance No. 787)~~ are mandatory in SRA FHSZs and LRA very high FHSZ areas.

The FHSZs also dictate when a natural hazard disclosure must be prepared when a property is sold. Specifically, since 1991 each seller of real property in an SRA is required to disclose to any prospective purchaser that the property for sale is in a wildland area that may be subject to wildfire risks and hazards. Each seller must also disclose that the property must meet the flammable vegetation clearance requirements of PRC Section 4291. The seller must also disclose that it is *not* the state's responsibility to provide fire protection services to any building or structure located within the wildland unless that state has entered into an agreement with the local government to provide structure fire protection. Since 1998, all SRA lands pursuant to PRC 4125 are included on the Natural Hazard Disclosure maps and very high FHSZ areas in LRAs are also on the Natural Hazard Disclosure maps.

a. Types of Hazardous Fire Severity Zones

The fire hazard severity zone (FHSZ) mapping effort is done under authorities defined in PRC Section 4201 and GC Section 51175. The effort incorporates wildland fire behavior science, data sets and engineering information on structure ignition mechanisms during conflagrations. As noted in the code (PRC Section 4202), the zones are based on "fuel loading, slope, fire weather and other relevant factors present."

State Responsibility Areas: For SRAs, CalFire completed and adopted new FHSZ maps in late 2007. Per the California Code of Regulations (CCR), Section 701A.3.2, new buildings located in any FHSZ within an SRA are subject to the WUI building standards of the 2008 (or later) California Building Code. Within SRAs, CalFire maps a range of fire hazard severities (moderate, high, very high); these maps are updated every five years.

Local Responsibility Areas: As noted above, CalFire is also tasked with identifying the very high fire hazard severity zones for LRA so that public officials for the local agencies can identify appropriate measures to "mitigate the rate of spread and reduce the potential intensity of uncontrolled fires that threaten to destroy resources, lives and property" (PRC Section 4201). Once received from the state, the local agency is required to designate, by ordinance, the very high fire hazard severity zones in its jurisdiction. As outlined further below, the County of Riverside has accomplished this for its LRAs via Riverside County Ordinance No. 787.

b. Mapped Hazardous Fire Severity Zones in Riverside County

Much of the hilly portions of unincorporated Riverside County are mapped as having substantial fire risks; being designated as SRAs with moderate, high or very high fire hazard. See Figure 4.13.7 (Fire Hazard Severity Zones

in Riverside County), which shows the fire hazards in Riverside County broken down by SRA and LRA, as well as severity level (moderate, high or very high). Since the hillside terrain of Riverside County is predominantly mapped as having a substantial fire risk, much of the County of Riverside is subject to PRC Sections 4291-4299 which require property owners in these areas to conduct maintenance to reduce the fire danger. These sections affect all buildings and structure in or adjoining any mountainous area or forest-, brush- or grass-covered land, or any land covered with flammable material.

5. Fire Protection Services in Riverside County

The County of Riverside contracts with the State (i.e., CalFire) for fire protection. Under CalFire management, the Riverside County Fire Department (RCFD) operates 95 fire stations in 17 battalions. Fifty-one of these stations, as well as three stations operated directly by CalFire, are located in the unincorporated portion of Riverside County (see Table 4.17.2-A in Section 4.17.2 for full details).

RCFD provides fire suppression, emergency medical, rescue and fire prevention services and is equipped to fight both urban and wildland emergency conditions. Equipment in the RCFD inventory includes: structural engines, rural engines, brush engines, telesquirts, trucks, paramedic units, a helicopter, hazardous materials unit, incident command units, water tenders, fire crew vehicles, mobile communications centers, breathing support units, lighting units, power supply units, fire dozers, mobile training vans and emergency feeding units.

For fighting wildfires, CalFire has extensive ground forces, including volunteer firefighters from prisoner populations and an air force that includes (statewide): fifteen Grumman S-2A 800-gallon airtankers, four S-2T 1,200-gallon airtankers, two 2,000-gallon contract airtankers, eleven Super Huey Bell UH-1H helicopters, six O-2A air attack aircraft, eleven OV-10A air attack craft and one C-26B fire mapping airplane. In operation, the air attack planes fly overhead directing the airtankers and helicopters to critical areas of the fire for retardant and water drops. The retardant used to suppress fires is diammonium phosphate plus iron oxide, which acts as a fertilizer as well as fire suppressant.

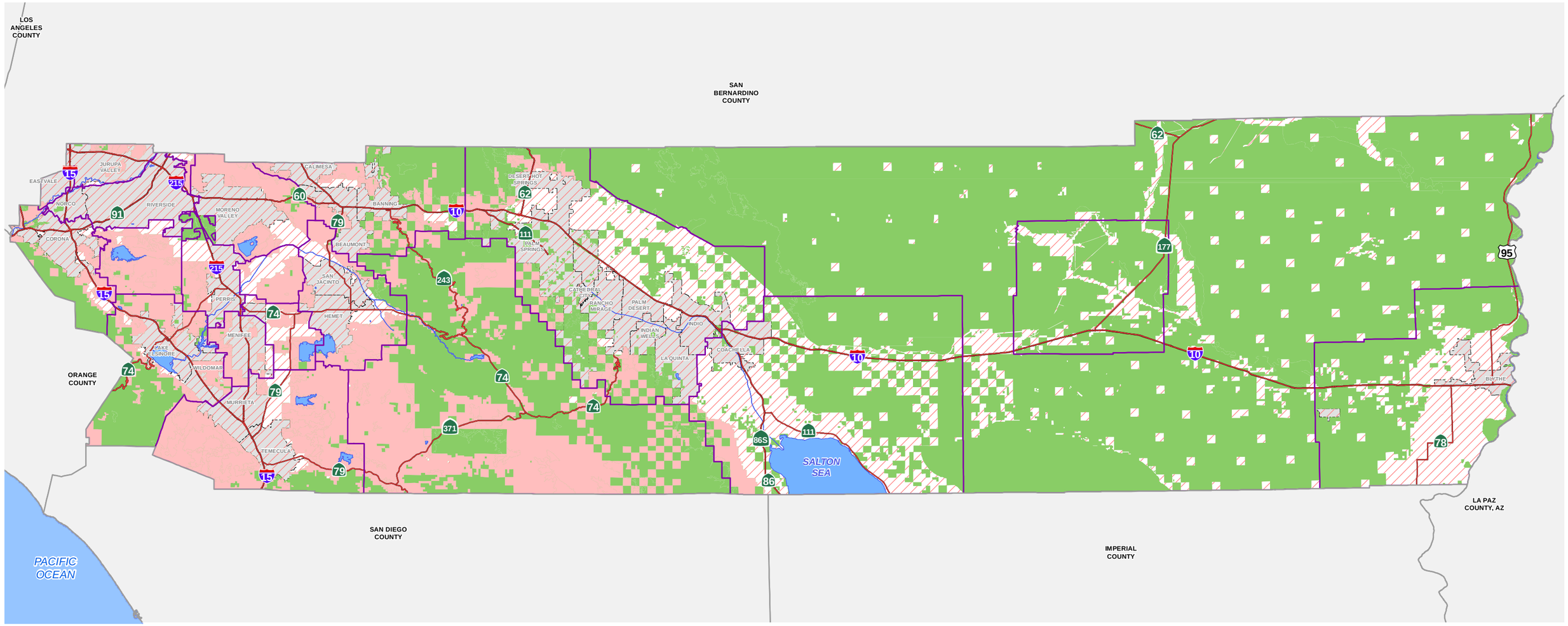
In addition to serving Riverside County's unincorporated areas, the RCFD provides fire protection services to 18 cities and one Community Service District (Rubidoux CSD) on a contractual basis providing fire protection specialists to review plans for all new developments, commercial and industrial buildings located within the contract cities and unincorporated areas of Riverside County. More information on RCFD services and facilities is provided in Section 4.17.2 of this EIR.

6. Standards for Ensuring Fire Protection

a. California Fire Codes and Wildland-Urban Interface Codes

In late 2005, the California Building Commission adopted the Wildland-Urban Interface Codes, with an effective date of January 2008, as part of a set of new California Fire Codes. The new WUI Codes included provisions for ignition-resistant construction standards in WUI areas. As noted above, the WUI codes apply to new building applications in three specific areas:

- All State Responsibility Areas (any Fire Hazard Severity Zone).
- Local Responsibility Areas (only the Very High Fire Hazard Severity Zone).
- Any wildland-urban interface fire area designated by the enforcing agency (i.e., County of Riverside).



Data Source: California Department of Forestry and Fire Protection (CAL FIRE), (2010)

Fire Responsibility Areas

- State Responsibility Areas
- Federal Responsibility Areas
- Local Responsibility Areas
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.13.6

December 16, 2013

Miles
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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

FIRE RESPONSIBILITY AREAS IN RIVERSIDE COUNTY

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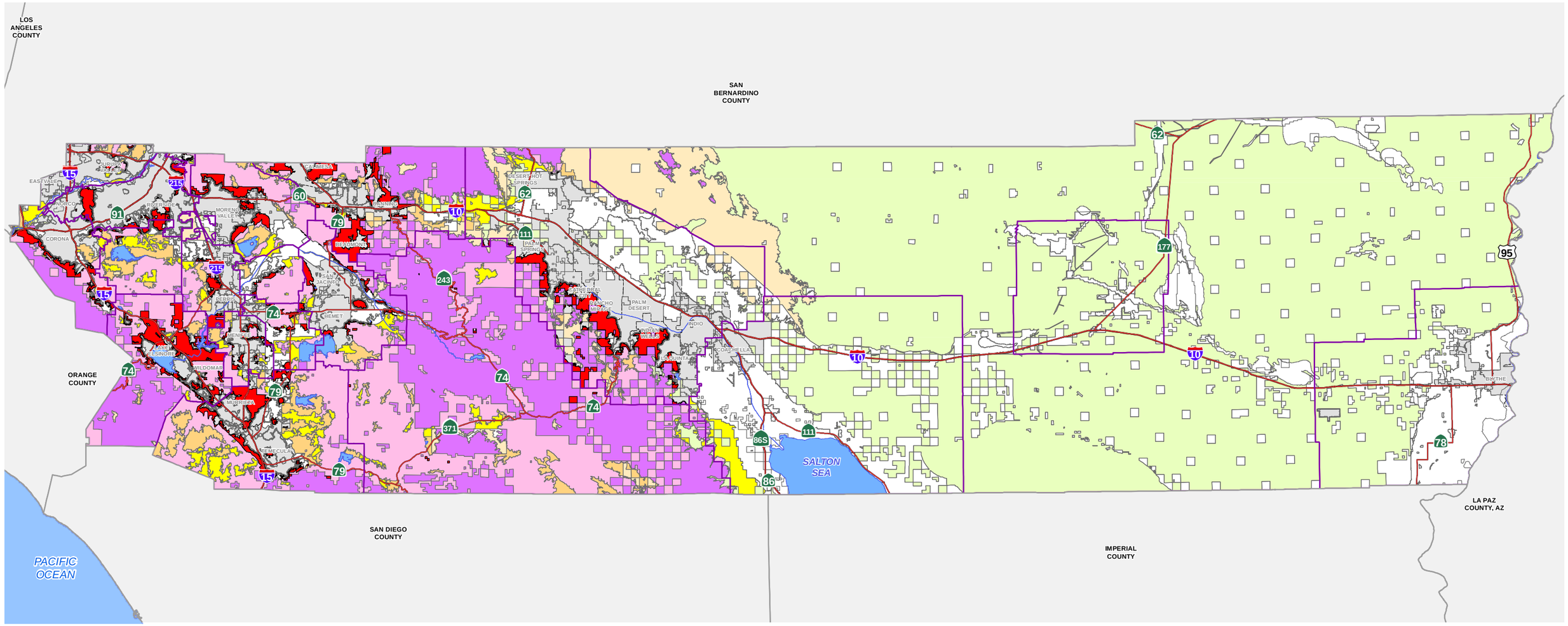

Data Source: California Department of Forestry and Fire Protection (CAL FIRE), (2010)

Fire Hazard Severity Zones (FHSZ)

Local Responsibility Areas	State Responsibility Areas	Federal Responsibility Areas	
Very High	Very High	Very High	Highways
All Others	High	High	Area Plan Boundary
	Moderate	Moderate	City Boundary
			Waterbodies

Figure 4.13.7

December 16, 2013

Miles
0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

WILDLAND FIRE HAZARD SEVERITY ZONES

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As noted by CalFire, "the broad objective of the WUI Fire Area Building Standards is to establish minimum standards for materials and material assemblies and provide a reasonable level of exterior wildfire exposure protection for buildings in WUI areas." It further notes that "The use of ignition resistant materials and design to resist the intrusion of flame or burning embers projected by a vegetation fire (wildfire exposure) will prove to be the most prudent effort California has made to try and mitigate the losses resulting from our repeating cycle of interface fire disasters." (WUI Building Standards Information Bulletin, CalFire, Sept. 2007)

b. Ordinance No. 787 - Fire Code Standards

This ordinance addresses implementation of the California ~~Building~~ Fire Code, based on the International ~~Conference of Building Officials~~ *Code Council*. The codes prescribe performance characteristics and materials to be used to achieve acceptable levels of fire protection and include the WUI fire area building standards mentioned above. Collectively, the ordinance establishes the requirements and standards for fire hazard reduction regulations within Riverside County (including additions and deletions to the California Fire Code) to fully protect the health, safety and welfare of existing and future residents and workers of Riverside County.

Among other things, this ordinance assures that structural and nonstructural architectural elements of the building do not: a) impede emergency egress for fire safety staffing/ personnel, equipment, and apparatus; nor b) hinder evacuation from fire, including potential blockage of stairways or fire doors. In addition, for the purposes of CFC implementation, the ordinance also adds a statement noting: "In accordance with Government Code sections 51175 through 51189, Very High Fire Hazard Severity Zones are designated as shown on a map titled Very High Fire Hazard Severity Zones, dated April 8, 2010, and retained on file at the office of the Fire Chief and supersedes other maps previously adopted by Riverside County designating high fire hazard areas." It also defines a "hazardous fire area" as: "Private or public land not designated as state or local fire hazard severity zone (FHSZ) which is covered with grass, grain, brush or forest and situated in a location that makes suppression difficult resulting in great damage. Such areas are designated on Hazardous Fire Area maps filed with the office of the Fire Chief."

c. Fire Flow Standards

Included in Riverside County Ordinance No. 787 are the California Fire Code, *Part 4, Appendix B* ~~Division III, Appendix III-A~~, for establishing fire flow, duration and pressure requirements for fire flow; as summarized in Table 4.13-G (Minimum Fire Protection Flows), below. The requirements are based on building size, type, materials, purpose, location, proximity to other structures and the type of fire suppression systems installed. The various water districts in Riverside County are required to test fire protection capability for the various land uses per the flow requirements of the Fire Code. In addition, areas of Riverside County not served by water districts are required to meet similar requirements as outlined in PRC Sections 4290-4299.

Table 4.13-G: Minimum Fire Protection Flows

Fire Flow Calculation Area (Square Feet)					Fire-Flow (Gallons per Minute) [b]	Flow Duration (Hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	

Fire Flow Calculation Area (Square Feet)					Fire-Flow (Gallons per Minute) [b]	Flow Duration (Hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
70,901-83,700	39,701-47-100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112-700	54,901-63,400	35,201-40,600	25.901-29,300	15,601-18,000	3,500	
112-701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	23,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,201-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
-	-	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
-	-	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
-	-	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
-	-	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
-	-	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
-	-	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
-	-	179,401-191,400	129,601-138.300	79,801-85,100	7,750	
-	-	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

Types of Construction are based on the California Building Code.
Measured at 20 psi residual pressure
Note: Table 4.13G was replaced in its entirety in order to reflect information from the 2013 fire code. The amended table was developed with the assistance of the Riverside County Fire Department. The information contained within the table is intended as an aid to the user, and as such is non-regulatory. Standards noted within the table are subject to change at the discretion of the Riverside County Fire Department pursuant to updates to the California Fire Code.
Source: State of California, California Fire Code, 2013.

The County of Riverside also requires a development within a high fire hazard area to design and implement fuel modification programs for the interface between developed and natural areas within and adjacent to the proposed project area. Such fuel modification plans shall be subject to approval by the Riverside County Fire Department. The fuel modification programs shall be achieved through graduated transition from native vegetation to irrigated landscape. The program shall also establish parameters for the percent, age, extent, and nature of native plant removal necessary to achieve Riverside County fire prevention standards to protect human lives and property, while preserving as much natural habitat as practicable.

d. Ordinance No. 695 – Hazardous Vegetation

As expected, hillsides throughout Riverside County are predominantly mapped as having a substantial fire risk; thus, much of Riverside County is subject to PRC Sections 4291-4299 and Riverside County Ordinance No. 695. This ordinance requires property owners in such areas to reduce fire danger through mowing and other fuel modification methods. This ordinance affects anyone who "owns, leases, controls, operates or maintains any building or structure in, upon or adjoining any mountainous area or forest-covered lands, brush-covered lands or grass-covered lands or any land covered with flammable material."

Among other measures, Ordinance No. 695 requires the abatement of "hazardous vegetation," which is defined in the ordinance as vegetation that is flammable and endangers the public safety by creating a fire hazard. The type of abatement can depend on the location, terrain and vegetation present, but typically includes the mowing or disking (plowing up) of vegetation, such as seasonal and recurrent weeds, stubble, brush, dry leaves and

tumbleweeds. Abatement is generally required along roadways and habitable structures either on or adjacent to the property.

Each spring, the CDF and RCFD distribute hazard abatement notices. These notices, which currently go to about 30,000 Riverside County residents, requires property owners to reduce the fuels around their property. Requirements for hazard reduction around improved parcels (those with structures) are set forth in Riverside County Ordinance No. 787 (and PRC Section 4291). A minimum 30-foot clearance is required around all structures, which can be extended to 100 feet in areas where severe fire hazards exist. For unimproved parcels adjacent to a roadway, a 100-foot wide strip of abated land at the parcel boundary is required. According to the ordinance, the determination for appropriate clearance distances are made based upon a visual inspection of the parcel and consideration of all factors that place the property or adjoining structures at risk from an approaching fire. These factors include local weather conditions, fuel types, topography and the environment where the property or adjoining structures is located. Where the parcel's terrain is such that it cannot be disked or mowed, the Riverside County Fire Chief may require or authorize that other means of removal be used.

Prior to development, the County of Riverside requires a development within a high fire hazard area (SRA or VHFHSZ LRA) to design and implement fuel modification programs for the interface between developed and natural areas within and adjacent to the proposed project area. Such fuel modification plans shall be subject to approval by the Riverside County Fire Department. The fuel modification programs shall be achieved through graduated transition from native vegetation to irrigated landscape. The program shall also establish parameters for the percent, age, extent, and nature of native plant removal necessary to achieve Riverside County fire prevention standards to protect human lives and property, while preserving as much natural habitat as practicable.

~~As outlined in Riverside County Ordinance No. 659, the County of Riverside also has the ability to require development applicants to pay established fire protection mitigation fees that are to be used by the Riverside County Fire Department to construct new fire protection facilities or provide facilities in lieu of the fee as approved by the Riverside County Fire Department. The Riverside County standard for the establishment of a new fire station is the development of 2,000 dwelling units or 3.5 million square feet of commercial or industrial uses. Riverside County also requires the payment of mitigation fees to collect revenue for the establishment of new stations. Riverside County currently requires new development proponents to pay mitigation fees to help offset the cost of providing new fire facilities. The current Riverside County fire fees are $400.00 per single family dwelling unit and $0.25 per square foot for all other types of development. These fees, however, have not been collected since 1999 (per Tracy Hobday, pers. comm., Feb. 17, 2011). In recent years, however, the State of California has implemented an annual "fire protection fee" for properties with habitable structures on them within SRAs (see below).~~

e. Fire Closures

Based on drought and other conditions, it may become necessary to close an area to the public due to extreme fire hazard potential. Towards this end, Riverside County Ordinance No. 695 outlines the procedures for managing "Hazardous Fire Area" designated lands as follows:

> *The chief is given the authority to officially determine and publicly announce the closure of any hazardous fire area or portion thereof. However, any closure by the chief for a period of more than 15 days must be approved by the Board of Supervisors within 15 days of the chief's original order of closure. No person is permitted in any hazardous fire area, except on public roadways and inhabited areas, during such time as the area is closed to entry. This shall not prohibit residents or owners of private property within any closed area, or their invitees, from going in or being upon their lands. This does not apply to any entry, in the course of duty by a peace officer or any other duly authorized public officer, members of any fire department or member*

of the CDF, nor does it apply to National Forest Land in any respect. During periods of closure, the chief shall erect and maintain at all entrances to the closed areas sufficient signs giving adequate notice of closure.

f. Defensible Space

Pursuant to GC Section 51182, a person who "owns, leases, controls, operates or maintains an occupied dwelling or occupied structure in, upon or adjoining a mountainous area, forest-covered land, brush-covered land, grass-covered land or land that is covered with flammable material" in a very high fire hazard severity zone designated by the local agency pursuant to GC Section 51179, shall at all times do all of the following:

Maintain Defensible Space: Maintain defensible space of 100 feet from the front, rear and each side of the structure. The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. (Exceptions may be made for "single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire.") The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion.

Required Defensible Space Distances: A greater distance than that required above may be required by state law or local ordinance or rule. Clearance beyond the property line may only be required if the state law, local ordinance or rule includes findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner. A greater distance may also be required by an insurance company providing fire insurance for an occupied dwelling or structure.

Removal of Trees: Remove that portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe. Maintain trees, shrubs or any other plant adjacent to or overhanging a building free of dead or dying wood. Also, the roof structure must be maintained free of leaves, needles or other vegetative materials.

Certification of New Buildings: Prior to constructing a new dwelling or occupied structure, or rebuilding one damaged by a fire, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, including those of GC Section 51189(b). Upon the completion of construction or rebuilding, the owner shall obtain from the County of Riverside building official, a copy of the final inspection report that demonstrates that the dwelling or structure was constructed in compliance with all applicable state and local building standards, including those of GC Section 51189(b).

The CalFire website also has a guidance document on fuels management, which discusses: regionally appropriate vegetation management that preserves and restores native species, minimizes erosion, minimizes water consumption and permits trees near homes for shade, aesthetics and habitat. It also provides suggestions to minimize or eliminate the risk of flammability of non-vegetative sources of combustion such as woodpiles, propane tanks, decks and outdoor lawn furniture.

D. Disaster Planning

To adequately protect public health and safety relative to wildland fires and other disaster conditions, the County of Riverside has established the Riverside County Operational Area Emergency Operation Plan (EOP) which addresses planned responses to extraordinary emergency situations, such as natural disasters, technological incidents and national security emergencies in or affecting Riverside County. The EOP describes the operations of the Riverside County Emergency Operation Center (EOC), which is the central management entity responsible for directing and coordinating the various Riverside County departments and other agencies in their emergency response activities.

The EOP also establishes the framework for implementation of the California Standardized Emergency Management System (SEMS) for Riverside County, which is located within Mutual Aid Region VI, as defined by the Governor's Office of Emergency Services (State OES). By extension, the plan also implements the National Incident Management System (NIMS) to facilitate multi-agency and multi-jurisdictional coordination, particularly between Riverside County and local governments, including special districts and State agencies, in emergency operations. The County of Riverside also has mutual aid agreements with local jurisdictions (24 cities), as well as a number of special districts and other governmental entities (e.g., school districts, water districts, Soboba Indian Tribe, etc.).

The Riverside Operational Area developed the Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) which identifies and analyzes an extensive list of the hazards (natural and technical) faced by the County of Riverside. Each hazard is assigned a severity rating, indicating the amount of damage to Riverside County and its population should the hazard occur, and a probability rating, indicating the likelihood that the hazards may occur within Riverside County.

4.13.3 Policies and Regulations Addressing Hazardous Materials and Safety

A. Hazardous Materials

1. Federal Regulations

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Discovery of environmental health damage from disposal sites, such as the Stringfellow acid pits in western Riverside County, prompted the U.S. Congress to pass the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund Act") (42 United States Code [USC] Sections 9601-9675). The purpose of CERCLA is to establish requirements for identifying and cleaning up chemically contaminated sites that pose a significant environmental health threat. A "Hazard Ranking System" is used to determine whether a site should be placed on the National Priorities List for cleanup activities.

Superfund Amendments and Reauthorization Act (SARA): The Superfund Amendments and Re-authorization Act (SARA) pertains primarily to emergency management of accidental releases. It requires for-mation of state and local emergency planning committees which are responsible for collecting material handling and transportation data for use as a basis for planning. Title III of SARA is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA), which was established to encourage and support emer-gency planning efforts at the state and local levels. Among other things, chemical inventory data is made available

to the community at large under this provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxic Release Inventory prepared by the U.S. Environmental Protection Agency (US-EPA).

Resource Conservation and Recovery Act (RCRA): RCRA Subtitle C (USC Title 42, Chapter 82) addresses hazardous waste generation, handling, transportation, storage, treatment and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. Amendments to RCRA in 1984 created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

In addition to specific materials produced by industry, hazardous wastes are often generated as by-products of industrial, manufacturing, agriculture and other uses. RCRA defines a hazardous waste as any solid, liquid or contained gaseous material that is disposed, incinerated or recycled. A hazardous material may also become hazardous waste through its accidental or inadvertent release into the environment. Both hazardous materials and hazardous waste pose potential risks to health, safety and welfare in Riverside County if handled inappropriately. All hazardous waste must be discharged at a Class I facility (see discussion below on landfills).

Small-scale hazardous waste generators are businesses that generate less than 2,205 pounds (1,000 kilograms) of hazardous waste per month (that is, 13.23 tons per year). A majority of the hazardous waste generators under Riverside County's purview are classified as small-quantity generators. Collectively, small businesses generate a very large portion of the hazardous waste produced in the County of Riverside. This information is also a part of the U.S. EPA's TRI information provided by individual facilities, which documents the release and transfer of hazardous materials resulting from manufacturing processes. This database describes the type of hazardous material generated and the method of disposal, either through onsite release, offsite disposal or offsite recycling.

Hazardous Materials Transportation Act (HMTA): The HMTA (49 USC Sections 5101-5127) is the statutory basis for an extensive body of regulations aimed at ensuring the safe transport of hazardous materials via water, rail, highways, air and pipelines. It includes provisions for material classification, packaging, marking, labeling, warning placards and shipping documentation.

The U.S. Department of Transportation (DoT) has a system of numerical designations (the International Classification System) that may be displayed on placards, labels and/or shipping papers. The shipper of any hazardous material must classify the material according to its hazardous properties. This system categorizes hazardous materials into nine different classes (1-9) based on a number of characteristics and includes explosives, gases, flammable liquids and solids, oxidizers, poisons, etc. In addition to the numerical classification system for hazardous materials, the DoT has established a placard system for identifying hazardous materials during transport. The U.S. EPA requires their use on all shipments of hazardous materials. These placards are large in size and similar in shape (typically diamond) and are required to be displayed on all sides on any truck or railcar that transports hazardous materials. When a truck or railcar is transporting more than one hazardous material or more than 5,000 pounds of a material, a placard indicating "DANGEROUS" must also be displayed. Some placards also include a four-digit code indicating the type of material being transported. This four-digit identification number is required on any tank truck or rail tank car and provides precise identification in an emergency.

Occupational Safety and Health Act: Enacted in 1970, this federal law, like its namesake enforcement agency, OSHA (the Occupational Safety and Health Administration), governs the occupational health and safety of the private sector and the federal government. Codified under United States Code (USC) Title 29, Chapter 15, the

OSH Act ensures that employers provide employees with an environment free from "recognized hazards," such as exposure to toxic chemicals, excessive noise, mechanical dangers, heat or cold stress, and unsanitary conditions. The Act also created the Occupational Safety and Health Review Commission to review enforcement priorities, actions and cases, and the National Institute of Occupational Safety and Health, an independent research institute under the Centers for Disease Control. The Act covers all broadly-defined "employers" other than those covered by other federal laws (e.g., mining, railroads, airlines, weapon manufacturers, etc.), family farms, the self-employed and also state and local governments. Section 18 of the OSH Act permits and encourages states to adopt their own occupational safety and health plans, provided the state's standards and enforcement programs are as effective as the OSH Act or "will be at least as effective in providing safe and healthful employment." The State of California is an "OSHA State" in that it has such a plan; see additional information under state program, below.

Section 5 of the OSH Act contains a "general duty clause" that requires employers to: maintain conditions or adopt practices reasonably necessary and appropriate to protect workers on the job; be familiar with and comply with standards applicable to their establishments; and, ensure that employees have and use personal protective equipment when required for safety and health. OSHA may act under the general duty clause when four criteria are met: First, there must be a hazard. Second, the hazard must be a recognized hazard (e.g., the employer knew or should have known about the hazard, the hazard is obvious or the hazard is a recognized one within the industry). Third, the hazard must be sufficient to cause, or be likely to cause, serious harm or death. And, lastly, the hazard must be correctable (OSHA recognizes not all hazards are correctable).

Toxic Substances Control Act: Codified under 15 USC Sections 2601-2692, this federal act regulates the introduction of new or already existing chemicals (which are mostly grandfathered in). Chemicals not on a list (the TSCA Inventory) or subject to an exemption may not be manufactured or imported into the U.S. The US-EPA reviews all "new" chemicals (i.e., those not on the inventory) and regulates (or bans) those found to be an "unreasonable risk to human health or the environment." The TSCA also addresses exposure to specific chemicals, or classes of chemicals, in various subchapters of the law, including: asbestos, (indoor) radon levels, lead (such as in paints and toys), dioxin, hexavalent chromium and PCBs. It also bans the use of chlorofluorocarbons in manufacturing.

2. State Regulations

Cal/OSHA and the California State Plan: Under an agreement with OSHA, since 1973 California has operated an occupational safety and health program in accordance with Section 18 of the federal OSH Act of 1970. The State of California's Department of Industrial Relations administers the California Occupational Safety and Health Program, commonly referred to as Cal/OSHA. The State of California's Division of Occupational Safety and Health (DOSH) is the principal agency that oversees plan enforcement and consultation. In addition, the California State program has an independent Standards Board responsible for promulgating State safety and health standards, and reviewing variances. It also has an Appeals Board to adjudicate contested citations and the Division of Labor Standards Enforcement to investigate complaints of discriminatory retaliation in the workplace.

Pursuant to 29 CFR 1952.172, the California State Plan applies to all public and private sector places of employment in the state, with the exception of federal employees, the United States Postal Service, private sector employers on Native American lands, maritime activities on the navigable waterways of the United States, private contractors working on land designated as exclusively under federal jurisdiction and employers that require federal security clearances. Cal/OSHA is the only agency in the state authorized to adopt, amend or repeal occupational safety and health standards or orders. In addition, the Standards Board maintains standards for certain things not covered by federal standards or enforcement, including: elevators, aerial passenger tramways, amusement rides, pressure vessels and mine safety training. The Cal/OSHA enforcement unit conducts inspections of California workplaces in response to a report of an industrial accident, a complaint about an occupational safety and health

hazard, or as part of an inspection program targeting industries with high rates of occupational hazards, fatalities, injuries or illnesses.

California Hazardous Waste Control Law: The Hazardous Waste Control Law (HWCL) (HSC, Division 20, Chapter 6.5, Article 2, Section 25100, *et seq.*) is the primary hazardous waste statute in California. The HWCL implements RCRA as a "cradle-to-grave" waste management system in the state. It specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure its proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reuse as raw materials. The HWCL exceeds federal requirements by mandating source reduction planning and broadening requirements for permitting facilities that treat hazardous waste. It also regulates a number of waste types and waste management activities not covered by federal law (RCRA).

California Code of Regulations (CCR), Titles 22 and 26: A variety of CCR titles address regulations and requirements for generators of hazardous waste. Title 22 contains detailed compliance requirements for hazardous waste generators, transporters and facilities for treatment, storage and disposal. Because California is a fully-authorized state according to RCRA, most regulations (i.e., 40 CFR 260, *et seq.*) have been duplicated and integrated into Title 22. However, because the DTSC regulates hazardous waste more stringently than the U.S. EPA, the integration of state and federal hazardous waste regulations that make up Title 22 does not contain as many exemptions or exclusions as does 40 CFR 260. As with the HSC, Title 22 also regulates a wider range of waste types and waste management activities than does RCRA. To aid the regulated community, California has compiled hazardous materials, waste and toxics-related regulations from CCR, Titles 3, 8, 13, 17, 19, 22, 23, 24 and 27 into one consolidated listing: CCR Title 26 (Toxics). However, the hazardous waste regulations are still commonly referred to collectively as "Title 22."

California Unified Program (HSC, Title 27): According to the 2010 MHMP (page 342), California law established the Unified Program to consolidate, coordinate and make consistent the administrative requirements, permits, inspections and enforcement activities of six environmental and emergency response programs: the Hazardous Materials Business Plan/Emergency Response Plan, Hazardous Waste/Tiered Permitting, Underground Storage Tanks, Above-Ground Storage Tanks, California Accidental Release Prevention Program and the Uniform Fire Code Hazardous Materials Management Plan. The state agencies responsible for these programs set the standards for their individual program while local governments implement and enforce the standards. Cal/EPA oversees the implementation of the program as a whole pursuant to CCR Title 27, Division I, Subdivision 4, Chapter 1, Sections 15100-15620. The Unified Program is implemented at the local level by government agencies (called Certified Unified Program Agencies (CUPAs)) certified by the Secretary of Cal/EPA. For the County of Riverside, the Hazardous Materials Management Division of the RCDEH acts as CUPA.

Hazardous Materials Business Plans and Emergency Response Plans: At the state level, Hazardous Materials Business Plan/Emergency Response Plans (HSC Chapter 6.95) seek to prevent or minimize the damage to public health and safety and the environment from a release or threatened release of hazardous materials and to satisfy community right-to-know laws. This is accomplished by requiring businesses that handle hazardous materials in quantities equal to or greater than 55 gallons, 500 pounds or 200 cubic feet of gas or extremely hazardous substances above the threshold planning quantity (as outlined in 40 CFR, Part 355, Appendix A) to: inventory their hazardous materials, develop an emergency plan and implement a training program for employees.

Hazardous Waste Source Reduction and Management Review Act: This 1989 act, also sometimes referred to as Senate Bill 14, requires hazardous waste generators to use source reduction as the preferred method of managing hazardous waste. Source reduction is preferable to recycling and treatment options because source reduction avoids waste generation costs and management liability. It also provides the best protection for public health and the environment. Under SB 14, facilities generating more than 12 kilograms of hazardous waste or

extremely hazardous waste are required to do source reduction planning. Hazardous waste generators subject to SB 14 are each required to prepare and implement a Source Reduction Evaluation Review and Plan, a Hazardous Waste Management Performance Report and submit annual Summary Progress Reports.

Medical Waste Management Act: This act, chaptered in HSC Sections 117600 through 118630, sets regulations for ensuring the safe handling, storage, processing and disposal of medical wastes within California. Among other things, it addresses medical waste generators, as well as medical waste treatment facilities, defines medical wastes, biohazards and related materials, and also requires medical waste management plans of all generators of medical waste (both "large" and "small"). It also addresses the establishment and actions of a "medical waste management program" for local agencies, such as the County of Riverside. Such programs encompass the issuance of "medical waste registrations," medical waste management plans, inspection of large-quantity medical waste generators, medical waste treatment facilities and medical waste haulers, as well as the investigation of violations of the HSC and enforcement of these regulations.

3. County Regulations

Ordinance No. 348 - Land Use, Section 18.44 - Hazardous Waste Facility Permits: This section of the Riverside County land use ordinance provides specific requirements applicable to the siting or expansion of a hazardous waste facility in order to safeguard life, health, property and the public welfare.

Ordinance No. 615 – Hazardous Waste Generation, Storage, Handling and Disposal: This ordinance was promulgated for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated or recycled and to regulate the issuance of permits and the activities of establishments where hazardous waste is generated. This ordinance designates RCDEH to enforce the provisions of HSC Division 20, Chapter 6.5, Section 25100, *et seq*., and the "Environmental Health Standards for the Management of Hazardous Waste," as specified in CCR Title 22, Division 4.5, pertaining to the generation, storage, handling, disposal, treatment and recycling of hazardous waste.

Ordinance No. 617 - Underground Storage Tanks Containing Hazardous Substances: This ordinance implements Section 25280 *et seq.* of the California Health and Safety Code to ensure that hazardous substances stored in underground tanks are done so safely and in a manner that prevents contamination. It does so by establishing appropriate construction standards for new underground storage tanks and requiring maintenance, monitoring and inspection of existing tanks. The ordinance also establishes a Local Oversight Program for "unauthorized releases of petroleum and petroleum-related materials from leaking underground tanks systems which require remedial action...to prevent long-term threats to the public health, water quality and environment." The RCDEH manages these programs.

Ordinance No. 651 - Disclosure of Hazardous Materials and Business Emergency Plans: This ordinance implements the State of California's "Hazardous Materials Release Response Plans and Inventory Law" (HSC, Chapter 6.95), to establish a system for permitting businesses handling hazardous materials. It serves to enforce minimum material standards and designates the Riverside County Community Health Agency as the agency responsible for administering and enforcing HSC Chapter 6.95. The RCDEH may require compliance with the applicable articles of the most-current Fire Codes. Pursuant to HSC Section 25500, the Riverside County Board of Supervisors may also impose additional, more stringent requirements on businesses that handle hazardous materials.

Ordinance No. 718 - Generation, Storage and Transportation of Medical Waste: This ordinance implements a medical waste management program in accordance with the Medical Waste Management Act, HSC

Division 14, Part 14. It establishes requirements for the management of medical waste and makes provisions for its enforcement.

Riverside County Fire Department (RCFD): The RCFD maintains a hazardous material (hazmat) team to respond to hazardous materials spills and leaks as well as provide expertise in the safe handling, abatement and documentation of hazmat emergencies. The RCFD implements its program through its Hazardous Materials Response Plan, which is required under CCR Title 8. Riverside County's team is a two-part company consisting of a hazmat unit and a support unit. All team members are trained to the California Specialized Training Institute "technical specialist" level. The RCFD also administers compliance with Ordinance No. 615 (hazardous waste) and Ordinance No. 718 (medical waste) regulations, as well as Section 18.44 of Ordinance No. 348 regarding hazardous waste facilities.

4. Existing County General Plan Policies for Hazardous Materials

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval.

a. Safety (S) Element Policies

Policy S 7.2: Encourage the utilization of multilingual staff personnel to assist in evacuation and short-term recovery activities, and meeting general community needs.

Policy S 7.3: Require commercial businesses, utilities and industrial facilities that handle hazardous materials to: install automatic fire and hazardous materials detection, reporting and shut-off devices; and install an alternative communication system in the event the power is out or telephone service is saturated following an earthquake.

Policy S 7.6: Improve management and emergency dissemination of information using portable computers with geographic information systems and disaster-resistant Internet access, to obtain:

a. Hazardous Materials Disclosure Program Business Plans regarding the location and type of hazardous materials;

b. Real-time information on seismic, geologic or flood hazards; and

c. The locations of high-occupancy, immobile populations, potentially hazardous building structures, utilities and other lifelines.

Policy S 7.14: Regularly review and clarify emergency evacuation plans for dam failure, inundation, fire and hazardous materials releases.

5. Proposed New or Revised General Plan Policies for Hazardous Materials

a. Safety (S) Element Policies

Policy S 6.1: Enforce the *land use* policies and siting criteria *related to hazardous materials and wastes through continued implementation of* ~~and implement~~ the programs identified in the County of Riverside Hazardous Waste Management Plan, ~~which~~ includ*ing* the following:

a. *Ensure county businesses* ~~C~~*c*omply with federal, ~~and~~ State *and local* laws pertaining to the management of hazardous wastes and materials**,** *including*~~s~~ *all Certified Unified Program Agency (CUPA) programs*.

b. Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County *through the County's land use and planning processes*.

~~c. Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).~~

c ~~d~~. Encourage and promote the programs, practices and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

Policy S 7.1: Continually strengthen the *Riverside County Office of Emergency Services' Response Plan and Multi-Jurisdictional Local Hazard Mitigation Plan* ~~Multi Hazard Functional Plan~~ and maintain mutual aid agreements with federal, State, local agencies and the private sector to assist in:

a. Clearance of debris in the event of widespread slope failures, collapsed buildings or structures, or other circumstances that could result in blocking emergency access or regress.

b. Heavy search and rescue.

c. Fire suppression.

d. Hazardous materials response.

e. Temporary shelter.

f. Geologic and engineering needs.

g. Traffic and crowd control.

h. Building inspections.

b. Circulation (C) Element Policies

Policy C *20.12* (Previously C 20.10): Review ~~and monitor~~ proposals for expansion of pipelines for the transport of suitable products and materials. ~~, and require mitigation of environmental impacts. In particular, require mitigation of~~ *Any project proponent of such a pipeline shall mitigate impacts, particularly* the potential for hazardous chemical or gas leakage and explosion *in accordance with local, State and federal regulations*.

c. Land Use (LU) Element Policies

NEW **Policy LU 7.9:** *Require buffers between urban uses and adjacent solid waste disposal facilities.*

B. Airport and Aircraft Hazards

1. Federal and State Regulations

It should be noted that the operation of airports and aircraft on airport property and in flight are the sole responsibility of the FAA. The proposed project has no bearing on those activities. However, the interaction of airports to surrounding land uses and the potential environmental effects of aircraft accidents are within the purview of the County of Riverside to evaluate under CEQA, as discussed herein.

State Aeronautics Act: This act (Public Utilities Code [PUC] Section 21001 et seq.) requires that the ALUC prepare airport land use compatibility plans (ALUCPs). ALUCPs promote compatibility between airports and the land uses that surround them to the extent that these uses are not already developed with incompatible land uses. They are intended to protect the safety of people, property and aircraft on the ground and in the air in the vicinity of the airport. They also address measures to ensure noise protection through land use planning and other measures.

California Environmental Quality Act (CEQA): The operation of airports and aircraft is the responsibility of the FAA, but the requirement to document potential hazards related to airports and air activities when a new project (i.e., GPA No. 960) is proposed is contained in CEQA, specifically PRC Section 21096, which states:

> *"(a) If a lead agency prepares an environmental impact report for a project situated within airport land use compatibility plan boundaries, or, if an airport land use compatibility plan has not been adopted, for a project within two nautical miles of a public airport or public use airport, the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation, in compliance with section 21674.5 of the Public Utilities Code and other documents, shall be utilized as technical resources to assist in the preparation of the environmental impact report as the report relates to airport-related safety hazards and noise problems.*
>
> *(b) A lead agency shall not adopt a negative declaration for a project described in subdivision (a) unless the lead agency considers whether the project will result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area."*

2. County Regulations

Ordinance No. 269 – Establishing Height Limits of Structures Within Certain Distances of March Field: This ordinance establishes maximum building and structure height limits within proximity to March ARB in order to avoid the introduction of aviation hazards to the airspace surrounding the facility. Among other things, the ordinance specifies that, "No person, partnership, firm, association or corporation shall hereafter maintain, permit, allow or cause to exist any smoke stack, flag pole, power line, power pole, tank, radio tower, derrick, tower, silo, barn, building or any other structure or thing whatsoever, in any manner so that the same shall exceed the following height within the following distances from the exterior boundaries of March Field [as defined therein]: 15 feet within 500 feet of the said exterior boundaries; 25 feet within 500 to 1,000 feet of the said exterior boundaries; 40 feet within 1,000 to 1,500 feet of the said exterior boundaries; 60 feet within 1,500 to 2,000 feet of the said exterior boundaries; 75 feet within 2,000 to 3,000 feet of the said exterior boundaries; 90

feet within 3,000 to 5,000 feet of the said exterior boundaries." The purpose of these restrictions is to ensure air safety and the safety of people and property surrounding the air field.

Ordinance No. 448 - Airport Operations: This Riverside County ordinance establishes airport operating areas and regulates height standards and limits therein. The ordinance is adopted pursuant to the "Airport Approaches Zoning Law," CGC Sections 50485-50485.14.

Ordinance No. 576 - Regulating County Airports: This ordinance establishes minimum standards for airports, heliports or Short Take Off and Landing airports (STOLports) to safeguard life, limb, property and public welfare. Among other things, for facilities owned or operated by the County of Riverside, it empowers the Director of Airports to prescribe regulations necessary for public airport use. In addition, all prescribed regulations are reviewed by ALUC and must ultimately go before the Board of Supervisors for approval.

3. Existing County General Plan Policies for Airports and Aircraft Safety

The following Land Use (LU) Element policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside uses contractual "Conditions of Approval" (COAs) adopted as part of a project's approval to legally require that certain steps occur as part of a project's development and implementation. The COAs ensure that applicable legal requirements and Riverside County policies are imposed once triggered by a development proposal milestone. (For example, a COA might require a specific environmental permit be obtained by the applicant prior to the County of Riverside issuing a grading permit for the development site.) The need for specific policies is determined through the individual CEQA analyses performed for site-specific projects on a case-by-case basis.

Policy LU 1.8: As required by the Airport Land Use Law, submit certain proposed actions to the Riverside County Airport Land Use Commission for review. Such actions include proposed amendments to the general plan, area plans or specific plans, as well as proposed revisions to the zoning ordinance and building codes.

Policy LU *15.1* (Previously LU 14.1): Allow airport facilities to continue operating in order to meet existing and future needs respecting potential noise and safety impacts.

Policy LU *15.7* (Previously LU 14.5): Allow the use of development clustering and/or density transfers to meet airport compatibility requirements as set forth in the applicable airport land use compatibility plan.

Policy LU *15.8* (Previously LU 14.6): In accordance with FAA criteria, avoid locating sanitary landfills and other land uses that are artificial attractors of birds within 10,000 feet of any runway used by turbine-powered aircraft and within 5,000 feet of other runways. Also avoid locating attractors of other wildlife that can be hazardous to aircraft operations in locations adjacent to airports.

Policy LU *15.9* (Previously LU 14.7): Ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace.

4. Proposed New or Revised General Plan Policies for Airports and Aircraft Safety

a. Land Use (LU) Element Policies

Policy LU *15.2* (Previously LU 14.2): Review all proposed projects and require consistency with any applicable airport land use compatibility plan [ALUCP] as set forth in Appendix L*-1* [of the General Plan] and as summarized in the Area Plan's Airport Influence Area section for the airport in question.

Policy LU *15.3* (Previously LU 14.3): Review all subsequent amendments to any airport land use compatibility plan and either *amend the General Plan to be consistent with the compatibility plan* ~~adopt the plan as amended~~ or overrule the Airport Land Use Commission as provided by law (Government Code section 65302.3).

Policy LU *15.4* (Previously LU 14.4): Prior to the adoption or amendment of this General Plan or any specific plan, or the adoption or amendment of a zoning ordinance or building regulation within the *Airport Influence Area* ~~planning boundary~~ of any airport land use compatibility plan, refer such proposed actions *to the ALUC* for *review* and determination as provided by the Airport Land Use Law.

***NEW* Policy LU 15.5:** *If the General Plan has not been found consistent with the applicable Airport Land Use Compatibility Plan, and the County has not overruled the ALUC, refer all actions, regulations, or permits within the Airport Influence Area to the ALUC for review and determination as provided by the Airport Land Use Law.*

***NEW* Policy LU 15.6:** *If the General Plan has been found consistent with the applicable Airport Land Use Compatibility Plan (ALUCP), the County may elect to voluntarily submit proposed actions, regulations, or permits to the ALUC for an advisory review if:*

a. There is a question as to the purpose, intent or interpretation of an ALUCP; or

b. Assistance is needed in airport land use matters.

Policy LU *31.2* (Previously LU 25.2): Protect major public facilities, such as landfill and solid waste ~~disposal~~ *processing* sites and airports, from the encroachment of incompatible uses.

Policy LU *35.1* (Previously LU 30.1): Require that proposed projects on properties designated with the Closed Landfill *Policy Area* ~~Overlay~~ be reviewed by the [County] Department of Waste Management and the Department of Environmental Health to ensure that future development is designed to protect public health and safety.

b. Circulation (C) Element Policies

Policy C 6.6: Consider access implications associated with adjacent development and circulation plans. ~~, and~~ Promote efficient and safe access ~~improvements on~~ *for* airport facilities.

C. Wildland Fire Hazards

1. Federal and State Regulations

Health Forest Restoration Act of 2003 – Communities at Risk: This act defines "communities at risk" as those "wildland urban interface communities within the vicinity of federal lands that are at high risk from

wildfire." For California, CalFire has expanded this definition to include all communities (regardless of distance from federal lands) for which a significant threat to human life or property exists as a result of a wildland fire event. According to the 2010 California Strategic Fire Plan (page E-1), factors used to determine at-risk communities include: high fuel hazard, probability of a fire and proximity of intermingles wildland fuels and urban environments near fire threats.

Public Resources Code (PRC) Sections 4290-4299: This section establishes minimum statewide fire safety provisions pertaining to: roads for fire equipment access; signs identifying streets, roads and buildings; minimum private water supply reserves for emergency fire use; and fire fuel breaks and greenbelts. With certain exceptions, all new construction after July 1, 1991, in potential wildland fire areas is required to meet these statewide standards. The state requirements, however, do not supersede more restrictive local regulations.

As defined by CalFire, wildland areas defined as SRAs may contain substantial wildfire risks and hazards. They consist of lands exclusive of cities and federal lands regardless of ownership. The primary financial responsibility for preventing and suppressing fires within wildlands belongs to the State of California. However, it is not the State of California's responsibility to provide fire protection services to buildings or structures located within the wildlands unless CalFire has entered into a cooperative agreement with a local agency for those purposes pursuant to PRC Section 4142. As such, wildland areas require disclosure of these fire hazards in real estate transactions, and owners of properties in wildland areas are subject to PRC Section 4291 maintenance requirements (see below). The law requires CalFire every five years (1991, 1996, 2001, etc.) to provide maps identifying the boundaries of lands classified as SRAs to the Riverside County Assessor. CalFire is also required to notify Riverside County of any changes to SRAs within the county resulting from periodic boundary modifications.

PRC Section 4213 - Fire Prevention Fees: Pursuant to PRC Section 4213, in July of 2011, the State of California began assessing an annual "Fire Prevention Fee" for all habitable structures within SRAs to pay for fire prevention services. SRAs are the portions of California where the State of California is financially responsible for the prevention and suppression of wildfires. The SRA does not include lands within incorporated city boundaries, Tribal or federally owned land. As of 2013, the fee is up to $150 per habitable structure (i.e., a building that can be occupied for residential use, which does not include incidental buildings such as detached garages, barns, outdoor bathrooms, sheds, etc.).

California Government Code Section 51178: This section specifies that the Director of CalFire, in cooperation with local fire authorities, shall identify areas that are Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRAs), based on consistent statewide criteria and the expected severity of fire hazard. Per CGC Section 51178, a local agency may, at its discretion, exclude from the requirements of Section 51182 an area within its jurisdiction that has been identified as a VHFHSZ, if it provides substantial evidence in the record that the requirements of Section 51182 are not necessary for effective fire protection within the area. Alternatively, local agencies like Riverside County may include areas not identified as VHFHSZ by CalFire, following a finding supported by substantial evidence in the record that the requirements of Section 51182 are necessary for effective fire protection within the new area. According to Section 51182, such changes made by a local agency shall be final and shall not be rebuttable by CalFire.

GC Section 51182 - Defensible Space: Pursuant to this code, a person who "owns, leases, controls, operates or maintains an occupied dwelling or occupied structure in, upon or adjoining a mountainous area, forest-covered land, brush-covered land, grass-covered land or land that is covered with flammable material" in a very high fire hazard severity zone designated by the local agency pursuant to Section 51179, shall at all times maintain a specified amount of "defensible space" to protect structures in high fire hazard areas.

CCR Title 14 – Natural Resources: These regulations constitute the basic wildland fire protection standards of the California Board of Forestry. They were prepared and adopted to establish minimum wildfire protection standards in conjunction with building, construction and development within SRAs. Among other things, Title 14 requires the design and construction of structures, subdivisions and developments in an SRA provide for basic emergency access and perimeter wildfire protection measures (fire fuel modification zones, etc.).

CCR Title 24, Parts 2 and 9 – Fire Codes: Part 2 of Title 24 of the CCR refers to the California Building Code which contains complete regulations and general construction building standards of state adopting agencies, including administrative, fire and life safety and field inspection provisions. Part 2 was updated in 2008 to reflect changes in the base document from the Uniform Building Code to the International Building Code. Part 9 refers to the California Fire Code, which contains other fire safety-related building standards. In particular, Chapter 7A, "Materials and Construction Methods for Exterior Wildfire Exposure," in the 2010 California Building Code addresses fire safety standards for new construction. In addition, Section 701A.3.2, "New Buildings Located in Any Fire Hazard Severity Zone," states:

> *"New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, any Local Agency Very-High Fire Hazard Severity Zone, or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter."*

Assembly Bill (AB) 6 - Real Estate Disclosures: This law requires disclosure in real estate transactions for two types of fire hazard areas: "Wildland Fire Areas," which may contain substantial forest fire risks and hazards, and VHFHSZ areas. CalFire prepares and updates fire maps as needed to comply with AB 6. In addition, Civil Code Section 1103(c)(6) requires real estate sellers to inform prospective buyers whether or not a property is located within a Wildland Fire Area that could contain substantial fire risks and hazards. PRC Section 4136 also requires this disclosure. Once the State Board of Forestry identifies those lands where CalFire has the primary duty for wildland fire prevention and suppression (i.e., SRA lands), CalFire sends the maps to the affected counties and county officials must post notices to indicate where these CalFire maps are available for viewing.

California Emergency Services Act: The California Emergency Services Act (CGC Section 8550-8551) mitigates the impacts of emergencies within the state through proper preparation and coordination with necessary agencies including the federal government. The Act is also responsible for establishing CalEMA which aims to improve safety and preparedness within the state.

Statewide Standardized Emergency Management System (SEMS): SEMS serves as the foundation of the State of California's emergency response system. SEMS provides the basis for the responses and actions of managing an emergency. As required by the California Emergency Services Act, SEMS manages the responses to emergencies in California when multiple agencies and jurisdictions are involved. The system incorporates all elements of the emergency management community into a single system. Local agencies are required to use SEMS in order to maintain eligibility for potential reimbursement of response-related costs.

CalFire Riverside Unit 2012 Strategic Fire Plan: This plan is used by the CalFire Riverside Unit to direct and guide its fire management activities for its service area. The plan emphasizes "pre-fire" management, which is a process to assess alternatives to protect assets from unacceptable risk of wildland fire damage and focus on those actions that can be taken in advance of a wildland fire to potentially reduce the severity of the fire and ensure safety. Pre-fire "project alternatives" may include a combination of fuels reduction, ignition management, fire-safe engineering activities and forest health improvement to protect public and private assets. In addition to its main emphasis on the San Jacinto Mountains and its at-risk communities, pre-fire projects have also been planned and implemented on SRA lands in and adjacent to the Cleveland National Forest. A number of cooperative

projects have taken place with many more being planned. The Riverside Unit also treats fuels within the region's Multi-Species Preserves and other public lands within SRAs, but not in National Forests.

The overall goal of the plan is to reduce total government costs and citizen losses from wildland fire in the Riverside Unit by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. The Fire Plan has five strategic objectives:

- Create wildfire protection zones that reduce the risks to citizens and firefighters.
- Include all wildland, not just the State Responsibility Areas. Analysis will ultimately include all wildland fire service providers - federal, state, local government and private. This is the long-term strategy. This plan is primarily focused on the CalFire Direct Protection Area (DPA) of the Riverside Unit, however the current extreme fuel conditions existing in the San Jacinto Mountains require the Unit to include the SRAs within USFS DPA [area in which the USFS is responsible for fire protection] also.
- Identify and analyze key policy issues and develop recommendations for changes in public policy. Analysis will include alternatives to reduce total costs and/or increase fire protection system effectiveness.
- Describe the wildland fire protection system in fiscal terms. This can include all public/ private expenditures and potential economic losses.
- Translate the analysis into public policy.

2. County Regulations

Riverside County Fire Department Strategic Plan: The County of Riverside has developed a strategic fire plan that details the department's goals and strategies for proactively coordinating fire facility, service and equipment needs for 2009-2029. It incorporates CalFire's management plan for several sub-zones within Riverside County. The plan is aimed at ensuring that existing and future development maintain adequate service levels throughout Riverside County.

Ordinance No. 659: *Under this ordinance, the County of Riverside has the ability to require development applicants to pay established fire protection mitigation fees that are to be used by the Riverside County Fire Department to construct new fire protection facilities or provide facilities in lieu of the fee as approved by the Riverside County Fire Department. The Riverside County standard for the establishment of a new fire station is the development of 2,000 dwelling units or 3.5 million square feet of commercial or industrial uses. Riverside County also requires the payment of mitigation fees to collect revenue for the establishment of new stations. Riverside County currently requires new development proponents to pay mitigation fees to help offset the cost of providing new fire facilities. The current Riverside County fire fees are $400.00 per single family dwelling unit and $0.25 per square foot for all other types of development. These fees, however, have not been collected since 1999 (per Tracy Hobday, pers. comm., Feb. 17, 2011).*

Ordinance No. 695 - Abatement of Hazardous Vegetation: Under this ordinance, the RCFD distributes hazard abatement notices, roughly 30,000 each year, requiring property owners to reduce the fuels around their property. These notices order property owners to reduce fuels (e.g., flammable grass, brush, etc.) around their property. Requirements for hazard reduction around improved parcels (i.e., those with structures) are set forth in Ordinance No. 787. A minimum 30-foot clearance is required around all structures; it may be extended up to 100 feet in areas with severe fire hazards. On unimproved parcels, the property owner is required to disc or mow 100 feet around the property perimeter. Again, this may be increased (or decreased) from the initial 100-foot width

based on visual inspection by the Fire Chief or Chief's designee. The County of Riverside also requires new development within high fire hazard areas to include a fuel modification program for its WUI interface, subject to approval by the Riverside County Fire Department. Lastly, this ordinance also allows the Fire Chief or designee entry onto any real property to inspect when there is reasonable cause that hazardous vegetation exists.

Ordinance No. 787 - Fire Code Standards: This ordinance adopts and, where necessary amends, the California Fire Code (FC) to safeguard lives and property from fire, explosion hazards and hazardous conditions within Riverside County. It also governs the issuance of fire permits and the collection of fees. The ordinance helps ensure that structural and nonstructural architectural elements of buildings do not impede emergency egress for fire safety personnel, equipment or apparatus and do not hinder evacuation from fires, including potential blockages of stairways or fire doors. During adoption of the Fire Code, the Riverside County Board of Supervisors also included additional requirements and standards for fire hazard reduction in order to ensure the health, safety and welfare of existing and future residents and workers in Riverside County, based on demands of climate, geography, topography and geology.

3. Existing County General Plan Policies for Wildland Fire Hazards

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval.

a. Land Use (LU) Element Policies

Policy LU *10.1* (Previously LU 9.1): Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities.

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

b. Safety (S) Element Policies

Policy S *5.9* (Previously S 5.2): Reduce fire threat and strengthen firefighting capability so that the County could successfully respond to multiple fires.

Policy S *5.10* (Previously S 5.3): Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities, and encourage them for all residences.

Policy S *5.12* (Previously S 5.5): Conduct and implement long-range fire safety planning, including stringent building, fire, subdivision and municipal code standards, improved infrastructure and improved mutual aid agreements with the private and public sector.

Policy S *5.13* (Previously S 5.7): Develop a program to utilize existing reservoirs, tanks and water wells in the county for emergency fire suppression water sources.

Policy S 7.3: Require commercial businesses, utilities and industrial facilities that handle hazardous materials to: install automatic fire and hazardous materials detection, reporting and shut-off devices; and install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

4. Proposed New or Revised General Plan Policies for Wildland Fire Hazards

a. Land Use (LU) Element Policies

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children),~~ transportation systems and fire/ police/medical services.

NEW **Policy LU 7.8:** *Require new developments in Fire Hazard Severity Zones to provide for a fuel clearance/modification zone, as required by the Fire Department.*

b. Safety (S) Element Policies

Policy S 5.1: Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:

a. All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the County Fire and Building and Safety Departments.

~~a~~ *b.* All proposed *development and* construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy and use.

~~b~~ *c.* In addition to the standards and guidelines of the California ~~Uniform~~ Building Code and California ~~Uniform~~ Fire Code fire safety provisions, continue *to implement* additional standards for high-risk, high-occupancy, dependent and essential facilities where appropriate under the Riverside County Fire *Code (Ordinance No. 787).* ~~Protection Ordinance.~~ These shall include assurance that structural and nonstructural architectural elements of the building will not: impede emergency egress for fire safety staffing/ personnel, equipment and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.

~~c~~ *d.* Proposed development *and construction* in *Fire Hazard Severity Zones* ~~Hazardous Fire areas~~ shall provide secondary public access, ~~unless determined otherwise by the County Fire Chief.~~ *in accordance with County ordinances.*

~~d~~ *e.* Proposed development *and construction* in *Fire Hazard Severity Zones* ~~Hazardous Fire areas~~ shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the County Fire Chief.

f. Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zone(s) to be located, designed and constructed so as to provide adequate defensibility from wildfires.

NEW **Policy S 5.2:** *Encourage continued operation of programs for fuel breaks, brush management, controlled burning, revegetation and fire roads.*

NEW **Policy S 5.3:** *Monitor fire-prevention measures (such as fuel reduction) through a site specific fire-prevention plan to reduce long-term fire risks in the Fire Hazard Severity Zones.*

NEW **Policy S 5.4:** *Limit or prohibit development or activities in areas lacking water and access roads.*

NEW **Policy S 5.5:** *Encourage proposed development in Fire Hazard Severity Zones to develop where fire and emergency services are available or planned.*

NEW **Policy S 5.6:** *Demonstrate that the proposed development can provide fire services that meet the minimum travel times identified in Riverside County Fire Department Fire Protection and EMS Strategic Master Plan.*

NEW **Policy S 5.7:** *Minimize pockets of flammable vegetation that increases likelihood of fire spread through conceptual landscaping plans to be reviewed by the Planning and Fire Departments in the Fire Hazard Severity Zones. The conceptual landscaping plan of the proposed development shall at a minimum include:*

a. Plant palette suitable for high fire hazard areas to reduce the risk of fire hazards.

b. Retention of existing natural vegetation to the maximum extent feasible.

c. Removal of onsite combustible plants.

NEW **Policy S 5.8:** *Design to account for topography of a site and reduce the increased risk from fires in the Fire Hazard Severity Zones located near ridgelines, plateau escarpments, saddles, hillsides, peaks, or other areas where the terrain or topography affect its susceptibility to wildfires by:*

a. Providing fuel modification zones with removal of combustible vegetation, but minimizing visual impacts and limiting soil erosion.

b. Replacing combustible vegetation with fire resistant vegetation to stabilize slopes.

c. Submitting topographic map with site specific slope analysis.

d. Submitting erosion and sedimentation control plans.

e. Providing a minimum 30 foot of setback from the edge of the fuel modification zones.

f. Minimizing disturbance of 25% or greater natural slopes.

Policy S *5.11* (Previously S 5.4): Utilize ongoing brush clearance fire inspections to educate homeowners on fire prevention tips *by implementing annual countywide weed abatement program*.

Policy S *5.14* (Previously S 5.8): Periodically review inter-jurisdictional fire response agreements and improve firefighting resources as recommended in the *Riverside* County *Fire Department* Fire Protection ~~Master~~ Plan *and EMS Strategic Master Plan* to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations and the risk posed by multiple ignitions, to ensure that:

a. Fire reporting and response times do not exceed *the goals* ~~those~~ listed in the *Riverside* ~~–~~County *Fire Department* Fire Protection ~~Master –~~Plan *and EMS Strategic Master Plan* identified for each of the development densities described.

b. Fire flow requirements (water for fire protection) are consistent with ~~Insurance Service Office (ISO) recommendations~~ *Riverside County Ordinance No. 787*.

c. The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

Policy S *5.15* (Previously S 5.10): Continue to utilize the Riverside County *Fire Department* Fire Protection Plan *and EMS Strategic* Master Plan as the base document to implement the goals and objectives of the Safety Element.

***NEW* Policy S 5.16:** *Encourage property owners to utilize clustering and transfer of development rights (TDR) program when developing lands within Fire Hazard Severity Zones by:*

- *Restricting the development of a property through placement of conservation easement.*
- *Acquiring the conservation easements similar to that of MSHCP Program.*

***NEW* Policy S 5.17:** *Identify, map and update on an as-needed continual basis, the Fire Hazard Severity Zone maps [see General Plan Figure S-11].*

***NEW* Policy S 5.18:** *Ensure that the Fire Department has appropriate municipal staffing and fire protection planning staff that meet the needs of development pressure and adequately respond to long range fire safety planning.*

***NEW* Policy S 5.19:** *Implement a coordination program with fire protection and emergency service providers to reassess fire hazards after wildfire events and to adjust fire prevention and suppression needs, as necessary.*

***NEW* Policy S 5.20:** *Implement a regional coordination program to increase support for coordination among fire protection and emergency service providers.*

***NEW* Policy S 5.21:** *Implement a long-term training and education program among government agencies and communities about fire protection.*

Policy S 7.1: Continually strengthen the *Riverside County Office of Emergency Services' Response Plan and Multi-Jurisdictional Local Hazard Mitigation Plan* ~~Multihazard Functional Plan~~ and maintain mutual aid agreements with federal, state, local agencies and the private sector to assist in:

a. Clearance of debris in the event of widespread slope failures, collapsed buildings or structures, or other circumstances that could result in blocking emergency access or regress.

b. Heavy search and rescue.

c. Fire suppression.

d. Hazardous materials response.

e. Temporary shelters.

f. Geologic and engineering needs.

g. Traffic and crowd control.

h. Building inspections.

4.13.4 Thresholds of Significance for Hazardous Materials and Safety

Hazardous Materials: The proposed project would result in a significant impact related to hazardous materials if it would:

A. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

C. Emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

D. Be located on a site which is included on a list of hazardous materials compiled pursuant to California Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

Airports/Aircraft Hazards: The proposed project would result in a significant safety hazard related to airport or aircraft impacts if it would:

E. Result in a safety hazard for people residing or working within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.

F. Result in a safety hazard for people residing or working within the vicinity of an airport land use plan or, where such plan has not been adopted, within two miles of a private airstrip or public use airport.

Wildland Fires and Safety: The proposed project would result in a significant safety hazard if it would:

G. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.13.5 Effect of GPA No. 960 on the General Plan and on Hazardous Materials and Safety

The proposed project, GPA No. 960, would have land use-related effects because it involves a variety of specific General Plan Land Use Designation corrections and changes, several Policy Area, Study Area and overlay changes, proposals for new trail and road alignments and standards, and an incidental commercial policy for rural areas. This section analyzes how the project affects, or is affected by, the safety issues in this section: hazardous materials, airports and aircraft hazards, and wildland fire hazards. The subsequent section (4.13.6) evaluates the project relative to each of the specific significance thresholds identified in Section 4.13.4 in terms of impacts and mitigation needed, if any.

Notwithstanding the specific spatial changes discussed below, a variety of LUD and policy area changes are proposed, as per the descriptions in Section 3.0 (Project Description) of this EIR and associated Figure 3-1 (and corresponding maps within each Area Plan) that may indirectly be affected by hazmat or safety issues. Such changes would lead to either an increase or decrease in development potential (density or intensity); the risks associated with introducing new people and property into areas potentially subject to the various safety hazards outlined herein would be increased correspondingly.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies, and others as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (GP Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements would be determined based on site assessment of opportunities and constraints, including as related to hazmat, fire and safety hazards to determine environmentally preferred alignments to minimize adverse effects. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines, and such are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services are not presently foreseeable beyond the master countywide level addressed previously in EIR No. 441. These improvements would require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation would be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage.

A. Hazardous Materials

The proposed project includes a number of land use designation changes and corrections. Spatial analysis of these land use sites relative to the federal and state hazmat databases indicates that only one of the 36 major hazmat sites identified in Table 4.13-A (and shown on Figure 4.13.1) is near any known spatial location associated with GPA No. 960. The Blythe Army Air Field Bombing Target #1 site (Site 34 in Figure 4.13.1) is near some of the parcels proposed for LUD revisions near the Blythe Airport. The proposed sites are outside the airport's property, while the hazmat site is within the boundaries of the airport. According to records, the contaminants of

concern are either in groundwater or in sub-surface soils, but are not easily entrained as dust. Thus, there would be negligible indirect impacts to area residents as a result of any remediation activities. There is little to no potential for contamination of parcels with revised LUDs, nor would any future remediation activities associated with the hazmat site affect them.

In general, where GPA No. 960 proposes LUD changes from vacant to developed, development would introduce new people, property and facilities into areas that could be subject to impacts from hazardous materials through accidental release or ongoing operations. In addition, properties that are changing from vacant or open space to some type of development would incrementally increase the population of a given area and, therefore, incrementally increase the routine uses of hazardous materials, such as cleaners, solvents, pesticides and such, as well. Accordingly, such development would result in increased risks of hazardous material accidents during routine transport or use. The project also proposes changes to a number of Policy Areas, Study Areas and Overlays. A review of the applicable databases (see Table 4.13-A) and Figure 4.13.1 indicate that no hazmat sites are located within any of the proposed policy or overlay areas.

GPA No. 960 includes revised trail maps for new pedestrian and multi-use trails, as well as trail connections, throughout Riverside County. Some of these trail alignments may run through or near the major hazmat sites listed below. In these areas, there is a potential for trail users to be exposed to hazardous materials if remediation activities cause contaminants to become windborne. However, strict rules for remediation activities would tend to limit such risks, as would the brief and occasional nature of normal trail usage. In addition, trail alignments are not fixed and are subject to site review for opportunities and constraints to ensure the trails are placed so as to minimize environmental impacts.

A comparison of the planned locations of new roadways and road segments with the hazmat site location data in Table 4.13-A and Figure 4.13.1 indicate there are no major hazmat sites adjacent to any new roads or segments proposed as part of GPA No. 960. However, as shown in Table 4.13-H (Hazmat Sites Potentially Near Future Development), some of the new roads would be located near facilities or land uses that transport, use or dispose of hazardous materials.

Table 4.13-H: Hazmat Sites Potentially Near Future Development

Map*	Site	Map*	Site
1	March Air Force/Reserve Base	22	Certainteed Riverside
6	Foster-Gardner Site	23	Crossroads Investors Site
8	Lockheed Propulsion Beaumont No. 2	24	Liston Aluminum
10	Temecula Bomb Range Target #107	25	March AFB Site 24
16	Corona Annex	26	March AFB Site 40
18	Gavilan Plateau	28	Parkview Drive Site
19	Riverside Community College-Norco Campus	33	Torney General Hospital

* See Figure 4.13.1
Source: California Department of Toxic Substances Control "EnviroStor" Database, March 2011.

There are several hazmat sites that are located in rural vacant areas, so it is possible conflict may occur between a future rural commercial use developed pursuant to the proposed Incidental Commercial policy, since the specific location of future commercial uses is not known or knowable at this time. It should be noted, however, that any future uses would have to comply with the various federal, state and local (Riverside County) regulations as part of Riverside County's development review process, particularly for any land uses that would generate, transport, use or dispose of hazardous materials.

B. Airports and Aircraft Hazards

Since the adoption of the RCIP General Plan in 2003, the Riverside County ALUC has adopted revised ALUCPs for various airports that affect Riverside County to address noise and safety related concerns with airport operations. As such, the existing General Plan policies and land use designations within these Airport Influence Areas were examined to ensure that they are consistent with, and appropriate for, the area's air operations. During this exercise, all parcels within unincorporated Riverside County that fall within an Airport Influence Area were reviewed in order to determine the level of consistency between that parcel's current General Plan land use designation and the respective Airport Influence Area zone. As a result, various map, policy and parcel-specific land use changes must occur in the General Plan to ensure consistency with these newly adopted plans. In addition, the updated Land Use Element airport policies (LU 15.1-15.9) require development to be consistent with any applicable airport plans, as does General Plan Table LU-3 (Relationship of ALUC Compatibility Plans to County Area Plans). Table 4.13-I (Potential Conflicts with Public-Serving Airports) summarizes the potential impacts of changes proposed by GPA No. 960 on public-serving airports.

Table 4.13-I compares Riverside County's public-serving airport locations to the various policy areas and overlay changes proposed in GPA No. 960 and identifies any potential conflicts. As shown in the table, none of the proposed policy areas or overlays conflict with any Airport Influence Area policy areas. Applicable Area Plans and Land Use Element portions would be updated as needed to reflect the adopted ALUCPs. For related discussion, see Section 4.2 (Land Use).

As part of GPA No. 960, two parcel-specific land use changes affecting 36 acres are proposed to ensure consistency. The first parcel-specific change is a 0.39-acre site located in unincorporated Indio just south of Mandeville Road within "Zone D" of the Bermuda Dunes Airport Influence Area. This change is classified as a technical mapping error and would adjust the site from Open-Space: Recreation (OS-R) to Community Development: Medium-Density Residential (CD-MDR); the OS-R designation was inadvertently applied to a portion of the site due to an adjacent golf course. The second parcel change is for a 35-acre site located in Reinhart Canyon, just west of California Avenue, within the Hemet-Ryan Airport Influence Area. This site is proposed to change from Community Development: Low-Density Residential (CD-LDR) to Rural Residential (RUR-RR), as the Rural Foundation and RR LUD was found to be more appropriate for the area.

As outlined in Table 4.13-I, new proposed trail alignments would pass through planning areas at the following airports: March ARB, Palm Springs, Blythe, Chino, Chiriaco Summit, Corona, Flabob, Riverside Municipal, Jackie Cochran, French Valley and Bermuda Dunes. Due to the low intensity of use expected along trail segments (i.e., no large concentrations of persons), no significant risks from GPA No. 960 on trails or trail users are expected relative to airport activities. Table 4.13-I also notes that new roads or road segments would not conflict with any airports within Riverside County. Lastly, there would not be any conflicts between future incidental rural-commercial policy areas, nor any airport planning zones within Riverside County, because the locations and height limits allowed under the new policy would prevent any conflict with an airport's operations.

Likewise, no changes proposed as part of GPA No. 960 would adversely affect the CMAGR. There are no land use (LUD) changes proposed within two miles of the base. Proposed new policies would further protect the public from adverse effects from military activities on the base, as well as protect the base from conflicts with future land use development offsite.

Table 4.13-I: Potential Conflicts with Public-Serving Airports

Air Facility	Location	Compatibility or Potential Conflict with GPA No. 960
Public-Serving Airports (facilities not listed have no conflicts)		
Banning Airport	Banning	No overlap of unincorporated Riverside County territory (city only). No changes proposed and no effects resulting from GPA No. 960.
Bermuda Dunes Airport[2]	Riverside County	No changes proposed under GPA No. 960. Potential LUD inconsistencies surrounding airport. No overlap of any other Policy Area or Overlay. Some trails overlap, but would not conflict. No new roads overlap.
Blythe Airport[1]	Blythe	GPA No. 960 LUD changes in this area (north, south and east of the airport) proposed to ensure ALUP consistency. No overlap of Policy Area or Overlays. Very minor amount of trails overlap, but no conflict. No new roads would overlap.
Chino Airport[3]	Chino; Riv. County	No LUD changes affected. No overlap of any Policy Areas or Overlays. Some proposed trail overlap, but no conflict. No new roads overlap.
Chiriaco Summit Airport	Riverside County	No LUD changes affected. No overlap of any Policy Areas or Overlays. Some proposed trails overlap, but no conflict. No new roads overlap.
Jackie Cochran[2] Regional Airport *(formerly Desert Resorts Regional Airport)*	Thermal/ Riverside County	No changes proposed under GPA No. 960. Potential LUD inconsistencies in area northeast of airport. No overlap of any other Policy Area or Overlay. Some trails overlap, but would not conflict. No new roads overlap.
Corona Municipal Airport	Corona	No LUD changes affected. No overlap of any Policy Areas or Overlays. Some proposed trails overlap, but no conflict. No new roads overlap.
Flabob Airport	Jurupa Valley	GPA No. 960 LUD changes (mostly south of the airport) proposed to ensure ALUP consistency. No overlap of any other Policy Areas or Overlays. Some proposed trails overlap, but no conflict. No new roads overlap.
French Valley Airport[2]	Murrieta/ Temecula	No LUD changes affected. No overlap of any Policy Areas or Overlays. Some proposed trails overlap, but no conflict. No new roads overlap.
Hemet-Ryan Airport	Hemet/Riverside County	No changes to ALUP since RCIP General Plan issuance. No changes proposed and no effects resulting from GPA No. 960.
Palm Springs International Airport	Palm Springs	No LUD changes affected, although a large ALUP is associated with this airport. No overlap of any other Policy Areas or Overlays. Some proposed trails would overlap, but not conflict. No new roads would overlap.
Perris Valley Airport	Perris	No overlap of unincorporated Riverside County territory (cities only). No changes proposed and no effects resulting from GPA No. 960.
Riverside Municipal	Jurupa Valley	GPA No. 960 LUD changes (mostly west of the airport) proposed to ensure ALUP consistency. No overlap of any other Policy Areas or Overlays. Some proposed trails overlap, but no conflict. No new roads overlap.
Private Air Facilities		
32 airstrips and helipads, (Including private Skylark and Desert Center Airports)	Various	No LUD areas overlap or inconsistent. No overlap of any Policy Areas or Overlays. No proposed trails or new road overlap or conflict.
Military Air Facilities		
March Air Reserve Base (U.S Military)	Moreno Valley	No changes to ALUP since RCIP General Plan issuance. No changes proposed and no effects resulting from GPA No. 960. No overlap of any other Policy Areas or Overlays. Some proposed trails would overlap, but not conflict. No new roads overlap.
Chocolate Mountain Aerial Gunnery Range	Salton Sea	No ALUP (military only). New policies proposed for vicinity around the CMAGR. No new land uses, roads, trails or other uses overlapping or affecting the CMAGR. The two closest proposed LUD changes (within the Eastern Coachella Valley Area Plan) are outside the two-mile buffer area around the CMAGR.

Footnotes:
1. GPA No. 960 includes LUD revisions to parcels around this airport to ensure consistency with the applicable ALUP.
2. No changes proposed as part of GPA No. 960; future ALUC consistency action(s) would, however, likely be necessary.
3. Located in San Bernardino County (Chino), but some of the ALUP falls within 2 miles of Riverside County territory.

Source: Riverside County, Riverside County Airport Land Use Compatibility Plan, 2004. Riverside County Planning Dept. and GIS Dept., analysis of project relative to airport locations, 2011. See Figure 4.13.2 for airport locations.

C. Wildland Fire Hazards

1. Effects of Fire on the Built Environment

The General Plan is concerned mainly with the physical build out of Riverside County; many of the changes associated with GPA No. 960 would affect planned land usage. The proposed project's update to the General Plan includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in areas throughout the county. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas; all of which would require adequate fire protection services to ensure their safety. The result of this growth would be the introduction of people and structures into previously vacant wildlands, increasing the extent of the wildland-urban interface and the risk of fire.

Table 4.13-K (Fire Responsibility Classifications for Project Components) provides a summary of the proposed project components relative to the degree of fire hazard (Fire Hazard Severity Zones) associated with the specific area. Table 4.13-J (Fire Hazard Overlay Zones for Project Components) summarizes the proposed project components relative to the fire responsibility agency (SRA, LRA, etc.). As noted in Table 4.13-J, there are proposed LUD changes in all fire hazard zones.

As noted earlier in Table 4.13-F, the State of California defines various types of lands subject to fire hazards according to the housing density present. To compare the potential fire hazards related to General Plan build out, Table 4.13-L (Countywide Residential Fire Risks, Existing and Build Out), below, categorizes the residential land uses as they would occur under both the existing (current) General Plan and the General Plan as updated pursuant to GPA No. 960. Although "plan-to-plan" in its comparison, the purpose of Table 4.13-L is to show the relative increase or decrease in types of development proposed in Riverside County relative to their assumed fire risk.

Lastly, Table 4.13-M (Residential Fire Risks at Build Out, GPA No. 960 Components Only) shows the change in acreages of the various residential land use classes associated with potential fire hazards (that is, as defined by the State; see Table 4.13-F). This table is based on the build out of the known spatial components or locations addressed by GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). It should be noted that the following projections are based on the assumption that all of the changes proposed under the existing General Plan or the General Plan as amended per GPA No. 960 actually result in future development and fully build out. That is, it is a theoretical, worst-case scenario that likely over-states the actual development potential in the real world. The actual future development of the individual parcels and areas are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities.

Table 4.13-J: Fire Hazard Overlay Zones for Project Components

Project Components	Fire Hazard Overlay Zones*				Compatibility or Potential Conflicts
	Very High	High	Moderate	Non-Hazard	
Parcel-Specific Land Use Designation Changes					
Various Individual Land Use Designation Changes	X	X	X	X	Parcels overlap different fire hazard zones, but would be governed by specific uses developed within specific zone(s)
Policy & Overlays					
OS-CH Changes	X	X	X	X	Hazard depends on location
Aguanga RVSA	X	X	X		Large overlap with Very High zone

Project Components	Fire Hazard Overlay Zones*				Compatibility or Potential Conflicts
	Very High	High	Moderate	Non-Hazard	
Anza Valley Policy Area	X	X			Large overlap with Very High zone and some overlap with High zone
El Cariso RVSA	X				In Very High zone
Fish Farms				X	Parcels all in Non-Hazard Zone
Good Hope RVLUO	(X)	(X)		X	Property in Non-Hazard zone, but adjacent to High zone to the S and Very High zone to the N
Lakeland Village	(X)			X	Property in Non-Hazard zone (Lake Elsinore) to east, but site adjacent to Very High zone to west
Meadowbrook RVLUO	X	X			Large overlap with Very High zone and some overlap with High zone
Northeast Business Park				X	In Non-Hazardous zone with small amount of Medium zone to northwest and southeast
RCA Acquired Lands (to OS-CH)	X	X	X	X	Conditions vary depending on slope, with steeper outlying areas in Very High to High zones, while flatter areas in Medium to Non-Hazardous zones
San Jacinto Agri. Potential Development Study Area		(X)	(X)	X	Property in Non-Hazardous zone but almost surrounded by High zone with some Medium zone to the south
Sky Valley RVO		(X)		X	Property in Non-Hazardous zone but adjacent to High zone to the northeast
Other Items					
New Trail Alignments	X	X	X	X	Conditions vary depending on slope, with trails in steeper outlying areas in the High to Very High zones, while trails in flatter areas in Medium High to Non-Hazardous zones
Road Alignments				X	Hazard levels depend on street location
Incidental Commercial Policy					Conditions vary but outlying areas in Medium to High zones, while others in Non-Hazardous zones

*(X) = Property adjacent to but not actually in fire hazard zone
Key: ALUC = Airport Land Use Commission RVO = Rural Village Overlay OS-CH = Open Space Conservation Habitat
RVLUO = Rural Village Land Use Overlay RCA = Resource Conservation Area RVSA = Rural Village Study Area
Source: Riverside County GIS Department, GIS mapping of project data, 2008.

Table 4.13-K: Fire Responsibility Classifications for Project Components

Project Components	Fire Responsibility Area Categories			Compatibility or Potential Conflicts
	Federal	State	Local	
Parcel-Specific Land Use Designation Changes				
Various Land Use Desig. Changes	X	X	X	Varies depending on location
Policy & Overlays				
OS-CH Changes	X	X	X	Varies depending on location
Aguanga RVSA		X		Reduces potential conflicts
Anza Valley Policy Area	X			Reduces potential conflicts
El Cariso RVSA	X			Reduces potential conflicts
Fish Farms			X	Reduces potential conflicts
Good Hope RVLUO		X		
Lakeland Village			X	
Meadowbrook RVLUO		X		
Northeast Business Park			X	
RCA Acquired Lands (to OS-CH)	X	X	X	Varies depending on location; Reduces potential conflicts
San Jacinto Agri. Potential Development Study Area	X		X	Reduces potential conflicts
Sky Valley RVO			X	
Chocolate Mountain Aerial Gunnery Range buffer & policies	X	X	X	Reduces potential conflicts

Project Components	Fire Responsibility Area Categories			Compatibility or Potential Conflicts
	Federal	State	Local	
Other Items				
New Trail Alignments	X	X	X	Varies depending on location
Road Alignments	X	X	X	Varies depending on location
Incidental Commercial Policy	X	X	X	Varies depending on location

Key: ALUC = Airport Land Use Commission; RVO = Rural Village Overlay; OS-CH = Open Space Conservation Habitat; RVLUO = Rural Village Land Use Overlay; RCA = Resource Conservation Area; RVSA = Rural Village Study Area

Source: Riverside County GIS Department, GIS mapping of project data, 2008.

Table 4.13-L: Countywide Residential Fire Risks, Existing and Build Out

Class [1]	Density (du/ac)	LUDs in Class [2]	Existing Gen. Plan [3] (acres)	Updated Gen. Plan [3] (acres)	Change (acres)
Wildland	> 0.05	OS-RUR	1,929,900	1,928,330	***- 1,570***
Rural	0.05 - 0.20	AG, RR, RM, RD	483,140	481,330	***- 1,810***
Interface	0.20 - 1.00	EDR[4], VLDR[4]	76,190	72,860	***- 3,330***
Urban	> 1.00	LDR[4], MDR, MHDR, HDR, HHDR, CC[5], MUPA[5]	101,450	99,310	***-2,140***
		Totals	**1,725,490**	**1,718,040**	***- 7,450***

Footnotes:
1. Classes as defined per State of California Multi-Hazard Mitigation Plan, October 2010, Table 5.Y, page 247.
2. General Plan Land Use Designations (LUDs). See General Plan Table LU-3 for specifics.
3. "Existing GP" = LUDs as per the existing (2007) General Plan. "Updated GP" = LUDs as per the General Plan updated pursuant to GPA No. 960. Same parcels (areas of proposed known spatial changes) encompassed in each set.
4. Encompasses LUDs from both the Rural Community (RC) and Community Development (CD) Foundations.
5. Conservatively assumes 100% of LUD acreage to residential use.

Source: Riverside County Planning Dept., Project application information, 2012.

Table 4.13-M: Residential Fire Risks at Build Out, GPA No. 960 Components Only

Class [1]	Density (du/ac)	Land Use Designations (LUDs) in Class [2]	Baseline (2007)	Future (General Plan Build Out, 2060)		
			Existing Uses of Land [7] (acres)	Existing Gen. Plan [3] (acres)	Updated Gen. Plan [3,8] (acres)	Gen. Plan Change (acres)
Wildland	> 0.05	OS-RUR	9,590	27,990	25,820	***- 2,170***
Rural	0.05 - 0.20	AG, RR, RM, RD	8,190	50,880	43,180	***- 7,700***
Interface	0.20 - 1.00	EDR[4], VLDR[4]	490	11,050	10,710	***- 340***
Urban	> 1.00	LDR[4], MDR, MHDR, HDR, HHDR, CC[5], MUPA[5]	520	1,770	1,120	***- 650***
		Totals	**18,790**	**91,690**	**80,830**	***- 10,860***

Footnotes:
1. Classes as defined per State of California Multi-Hazard Mitigation Plan, October 2010, Table 5.Y, page 247.
2. General Plan Land Use Designations (LUDs). See General Plan Table LU-3 for specifics.
3. "Existing GP" = LUDs as per the existing (2007) General Plan. "Updated GP" = LUDs as per the General Plan updated pursuant to GPA No. 960. "Gen. Plan Change" is the difference between these two General Plan scenarios.
4. Encompasses LUDs from both the Rural Community (RC) and Community Development (CD) Foundations.
5. Conservatively assumes 100% of LUD acreage to residential use.
6. Based on SCAG and RCCDR existing use of land data.
7. Land uses categorized (per nearest associated densities): wildland – agriculture; rural – rural residential; interface – single-family residential (sfr); and, urban – multi-family residential (mfr), mobile home parks and mfr apartments.
8. Change for Updated General Plan versus Existing Uses of Land: +16,230; +34,990; +10,220; and +600 for a total of +62,040 acres.

Source: Riverside County Planning Dept., Project application information, 2012.

The County of Riverside has little to no control over the decision to propose development (new or re-developed) on a given site (though the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County). Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply (i.e., existing home inventory) and even infrastructure availability (water supply, electricity, etc.). For land use policy changes without known locations (Indian fee lands, incidental rural commer-

cial, etc.), specific effects on fire needs cannot be delineated at present since they are location dependent. For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on fire hazards cannot be quantified at present since they are location dependent. However, the risks and hazards delineated for known locations would also apply to any other development occurring in fire-prone areas.

As shown in Table 4.13-M, the net effect of the land use designation (LUD) changes proposed in GPA No. 960 would be to decrease the amount of land potentially at risk of wildfire. This is mainly due to the reduction in development potential from the Aguanga and Anza areas, in addition to other study area reductions and LUD changes.

In terms of changes from the baseline, from Table 4.13-M, it can be determined that build out of the updated General Plan (per GPA No. 960) would result in the introduction of approximately 16,230 acres of 'wildland' uses (20-acre-plus lots), roughly 8,100 homes, compared to the existing condition (roughly 8,600 acres). Build out would also result in roughly 35,000 additional acres of 'rural' lands (i.e., homes on 5- to 20-acre lots) throughout Riverside County and another 10,200 acres of 'interface' lands on lots of one to five acres in size. The 'interface' total represents a twenty-fold increase in the amount of people and property that would be at risk for WUI fires. Total build out of the updated General Plan would increase the amount of residential developed land within unincorporated Riverside County by just over 62,000 acres. (By contrast, the existing General Plan would result in nearly 73,000 acres of additional residential development.)

2. Effects of Fire on Natural Resources

As reported in the State MHMP (pages 252-254), a forest and range assessment performed in 2010 assesses the risk of fire within various ecosystems. In it, some of the detrimental effects of fire on various ecosystem components were identified. The analysis focused primarily on impacts that follow high-intensity stand-replacing events outside the range of natural variability in conifer stands. Forests can contain a greater mass of fuel, especially when trees are dead or drought-stressed. These detrimental effects that were identified are described below.

Fire Effects on Timberlands: Timberlands, defined as conifer-dominated habitat types that likely support 20 cubic feet of volume growth per year and are not in reserved status, are a significant economic resource in California and are the primary economic base in some rural areas (particularly in Northern California). Fire can pose significant risk to timber assets through direct loss from combustion, mortality of growing stock, and fire-induced susceptibility to insect, pathogen and decay mechanisms. The actual loss of timber value associated with a given fire event is a function of tree structure, fire severity and post-fire salvage opportunity. Roughly three-quarters of California's timberland face a high fire threat or greater and over half of these lands have very high or extreme fire threat conditions. Only about one-fifth of California's timberlands face a moderate fire threat, where expected losses to timber assets are likely to be low. While some of the standing timber value can be salvaged following a wildfire, much of California's timber assets are exposed to significant risk from wildland fire.

Fire Effects on Woodlands: California's extensive distribution of woodland vegetation, especially hardwood woodlands, provide key habitat for many species. The risk of habitat loss associated with fire in woodland areas is highly variable, due both to varying habitat quality and the unique fuel and vegetation response characteristics of specific areas. Habitat characteristics such as tree canopy height and closure, presence or absence of a developed shrub understory, and occurrence of special habitat elements – such as snags and downed logs – are important determinants of habitat quality for many species. Roughly two-thirds of California's hardwood woodlands are exposed to very high or extreme fire threat. While many areas may respond favorably to wildland fire, initial changes in the post-fire environment may cause temporary habitat loss and species dislocation.

Fire Effects on Recreation and Open Space: After a wildfire, significant alteration of watershed lands and the associated stream systems is noticeable for periods varying from a few years to decades. In the short term, the presence of partially burnt vegetation reduces recreational and open space values. Fires can also destroy campgrounds, trails, bridges and other recreational facilities within the stricken area. Increased amounts of downstream sedimentation may significantly affect streams and lakes, which tend to be the most heavily used spots within larger recreational areas. As the vegetation grows back and damaged recreational infrastructures are replaced, the recreational and open space values would increase. However, it may take decades before vegetation types such as mature forests return to their pre-burn character. Grasslands and shrublands, on the other hand, can return to their pre-burn character within a decade.

Fire Effects on Waterbodies and Watersheds: Wildfires can have significant adverse effects on watershed lands, watercourses and water quality. Large, hot fires cause serious, immediate damage from which a watershed can take decades to recover. By burning off vegetation and exposing mineral soil, fire impairs the ability of a watershed to hold soil in place and to trap sediment before it enters stream systems. Loss of vegetation also means less water being absorbed by plants, causing a short-term increase in the quantity and the delivery rate of water entering streams. This can have significant effects downstream from the site of a fire, such as with the fire-flood cycle commonly experienced in Southern California. This increased runoff and its large sediment load can cause costly damage to downstream assets such as homes, roads, debris basins and other infrastructure. It can also result in the loss of human life when at-risk residents and visitors are not evacuated.

Fire Effects on Soils: Fire presents a significant risk to soil, especially in denuded watersheds, through accelerated erosion potential in the immediate post-fire environment, particularly when subjected to severe rainstorms prior to any vegetation recovery. The Fire and Resource Assessment Program has developed a statewide risk assessment based on the expected marginal increase in surface erosion from a potential fire. Erosion is a natural process that occurs across a watershed at varying rates, depending on soils, geology, slope, vegetation and precipitation. The intensity of a fire and the subsequent removal of vegetative cover increase the potential rate of soil erosion and new sediment sources. Wildfires affect surface erosion in a watershed by altering detachment, transport and deposition of soil particles. Most wildfires create a patchwork of burned areas that vary in severity. Severely burned areas suffer increased erosion due to loss of the protective forest floor layer and creation of water-repellent soil conditions that can cause flooding, downstream sedimentation and threats to human life and property.

Fire Effects on Riparian and Aquatic Habitats: Wildfire can produce a wide range of water quality and aquatic habitat outcomes, from beneficial to catastrophic. Wildfire outcomes are determined by weather, fuels, terrain and, to a lesser extent, suppression efforts. Large wildfires pose the greatest risk to water quality and riparian habitat. If a wildfire encounters fuel levels that have been reduced through prescribed burning and/or mechanical means, there is a good chance the fire would produce conditions more favorable to maintaining good water quality and aquatic habitat. Highly destructive fires are thus minimized. Fire can also dramatically affect aquatic habitat. Increased erosion and sediment deposition can result in channel aggradations (i.e., wider, shallower channels), filling of pools that provide important fish habitat, increased turbidity that makes it harder for fish to find food and can damage gills and cause changes in water chemistry.

Fire Effects on Water Quality: Wildfires can potentially affect water quality through increased sedimentation and increased turbidity and through increases in nutrient loadings. Concentration of nutrients (phosphorous and nitrogen) are increased from burned vegetation and delivered to streams through surface runoff. Stream temperatures often increase after fire occurs, typically through the removal of overhead protective vegetation. Elevated stream temperatures are detrimental to most coldwater fish species.

4.13.6 Hazardous Materials and Safety – Impacts and Mitigation

A. Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Impact 4.13.A – Create a Significant Hazard Through the Routine Transport, Use or Disposal of Hazardous Materials: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, which could result in some adverse effects from facilities that transport, use or dispose of hazardous materials. However, compliance with existing laws and regulatory programs would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.13.A

Every home, business and industry uses or produces, to some extent, flammable, hazardous or toxic materials. Accordingly, the potential for accidental explosion or release of hazardous substances from existing and future industries within Riverside County exists, but is not anticipated to be higher than is typical for any other location in Southern California. Within Riverside County, the highest probability for an inadvertent hazardous substance release is through a vehicular accident on heavily traveled freeways and highways. Some of the proposed LUD changes would be from planned developed uses to open space; potential impacts would be minimal for these areas as they would not result in additional buildings, residents or employees. However, the LUD changes that convert vacant or agricultural uses to some developed use (e.g., residential, commercial, etc.) would result in a small increase in the potential for humans and developed facilities to be impacted by hazardous materials. Similar conditions would occur from proposed changes within Policy Areas and Overlays, additional trails, new roads and the incidental rural commercial policy areas.

GPA No. 960 would incrementally increase potential hazmat impacts in this regard over existing conditions and those conditions anticipated under the approved General Plan. However, the use, storage and manufacture of hazardous materials are highly regulated by the state and federal governments, as well as by the RCDEH and Fire Departments. Thus, future development accommodated by GPA No. 960 is not predicted to result in significant environmental impacts from the routine transport, use or disposal of hazardous materials or hazardous wastes.

2. Regulatory Compliance for Impact 4.13.A

As detailed and explained below, compliance with the following existing laws, regulatory programs and General Plan policies would be sufficient to ensure that impacts related to routine handling of hazardous materials as a result of GPA No. 960 would be less than significant.

a. Compliance with Federal, State and County Regulations

Compliance with the following federal, state and county regulations would further prevent significant impacts related to the routine handling of hazardous materials.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): This regulation provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Riverside County contains three facilities that are being remediated under the federal CERCLA program, which would prevent public health and safety impacts from

hazardous materials that could be released by these facilities on any future development accommodated by GPA No. 960.

Resource Conservation and Recovery Act (RCRA): Enacted by Congress in 1976, RCRA governs the management of hazardous waste to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste, hazardous waste and underground storage tanks holding petroleum products or certain chemicals. Riverside County contains 35 facilities that are being evaluated and/or cleaned up under the federal RCRA program and remediation consistent with that program would prevent any hazmat impacts from these facilities from affecting future development accommodated by GPA No. 960. In addition, there are thousands of facilities in Riverside County that must obtain and maintain permits to handle hazardous materials under RCRA (see HMTA below). As with the residents and visitors today, compliance by those facilities with RCRA protects public health and safety for current and future land uses under GPA No. 960.

Hazardous Materials Transportation Act (HMTA): The objective of the HMTA is to protect lives and property from risks associated with the transportation of hazardous materials. Any business or facility that transports hazardous materials must comply with the requirements of the federal HMTA, as administered by the California Highway Patrol. Compliance with HMTA would help to reduce potential impacts to future land uses, policy areas, trails, roads, etc., accommodated by GPA No. 960 relative to hazmat spills along major roadways.

Hazardous Waste Control Law (HWCL): The State HWCL implements the federal RCRA program as a "cradle-to-grave" waste management system in California. There are thousands of facilities in Riverside County that must obtain and maintain permits to handle hazardous materials under RCRA and HWCL. Compliance with RCRA and HWCL would help ensure that potential risks to public health and safety from future development accommodated by GPA No. 960 would be effectively managed and monitored to minimize hazards.

CCR Title 22 and Title 26: CCR Titles 22 and 26 echo the HWCL's requirements for "cradle-to-grave" management over the generation, use, transport and disposal of hazardous materials in the state. Compliance by facilities that handle hazardous materials would help ensure that potential hazmat risks to future uses accommodated by GPA No. 960 would be reduced to the extent possible and practical under State of California management programs.

Ordinances No. 615 and No. 651: These ordinances establish the program and procedures for the County of Riverside to monitor facilities that handle hazardous materials, according to applicable state and federal laws and regulations. As long as facilities that handle hazardous materials comply with these ordinances, potential hazmat impacts on future developed uses resulting from GPA No. 960 would be managed to protect public health and safety.

Ordinance No. 718: Similar to Ordinances No. 615 and No. 651, Ordinance No. 718 applies to medical wastes. Compliance by medical facilities with this ordinance would help ensure that potential hazmat risks to future uses resulting from GPA No. 960 relative to medical wastes would be managed and controlled to less than significant hazard levels.

Ordinance No. 348: Section 18.44 of this ordinance regulates the allowable locations and expansions of hazmat facilities to health, safety and protection of the public. The ordinance limits those zones that hazardous waste facilities are allowed in with an approved hazardous waste siting permit and also prescribes standards and development criteria for such sites. Compliance with the ordinance by new and expanded facilities would help ensure that potential hazmat risks to future developed uses resulting from GPA No. 960 would be reduced.

b. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policy 7.3, in particular, provides mitigation for impacts associated with the routine handling of hazardous materials. Implementation of this General Plan policy will help reduce risks to future growth and development. See Section 4.13.3 for full text of the policy.

Policy S 7.3: This policy requires all entities that handle hazardous materials to take the necessary actions such as installing hazardous material detection devices, alternative communication systems, etc., in preparation for possible hazardous material accidents.

c. Compliance with Proposed New or Revised General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies S 6.1, S 7.1 and S 9.1, in particular provide mitigation for impacts associated with the routine handling of hazardous materials. Implementation of these General Plan policies would reduce the impacts of future growth and development consistent with GPA No. 960. See Section 4.13.3 for full text of each of these policies.

Policy S 6.1: This policy enforces the policies and programs prescribed within the County of Riverside Hazardous Waste Management plan which includes, but is not limited to, requiring compliance with federal and state laws pertaining to the management of hazardous wastes and materials and active public participation in hazardous waste management.

Policy S 7.1: This revised policy ensures that the County's Emergency Services' Response Plan and the Multi-Jurisdictional Local Hazard Mitigation Plan are reviewed for considerations that would strengthen the plans. The policy also encourages the maintenance of mutual aid agreements with federal, state, local agencies and the private sector that would assist in hazardous materials response.

Policy LU 7.9: This new policy requires buffering be used to mitigate any potential hazardous materials impacts on urban uses from adjacent solid waste disposal facilities.

3. Finding on Significance for Impact 4.13.A

Compliance with the above existing regulations, programs and policies would ensure that impacts related to the routine handling of hazardous materials associated with future development accommodated by GPA No. 960 would have a less than significant impact.

B. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact 4.13.B – Create a Significant Hazard Through the Accidental Release of Hazardous Materials: Future development accommodated by the project would increase the number of people and properties potentially at risk for upsets or accidental hazmat releases. However, while the potential for accidental explosion or release of hazardous substances from existing and future industries, transportation or disposal within Riverside County exists, it is not, nor would it be, any higher than is typical for any other region of Southern California. Within Riverside County, the highest probabilities for inadvertent releases of hazardous substances are through a vehicular accident on heavily traveled freeways, during remediation or grading of a contaminated site, or from an industrial accident at a facility that handles large amounts of hazardous materials. Compliance with existing

regulatory programs and General Plan policies would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.13.B

Future development accommodated by the proposed project would introduce various future land uses throughout Riverside County; uses that may be affected by accidental releases of hazardous materials or hazardous wastes at some time. A hazardous material spill or release can pose a risk to life, health or property. An incident can result in the evacuation of a few people, a section of a facility or an entire neighborhood. There is also the potential for previously unknown hazardous materials contamination from historical use of a property, including currently vacant properties, being released during future development activities (i.e., grading, remodeling, remediation, etc.). Should a release occur, existing federal, state and local policies and procedures require action from the applicable enforcement agency. It is unlikely that any such activities would be extensive and beyond the capacities of typical containment or safe remediation. Furthermore, such risks are no different than those for existing uses. Therefore, no significant impacts from the accidental release of hazardous materials within Riverside County are anticipated as a result of the proposed project with implementation of existing laws and regulations**.** No project-specific mitigation is required.

2. Regulatory Compliance for Impact 4.13.B

As discussed above, under Impact 4.13.A, a number of federal, state and local regulations exist that would ensure that any future risks from the accidental release hazardous materials would be less than significant. There are a number of federal laws that regulate hazardous materials, including federal laws such as SARA addressing Superfund sites, RCRA and HMTA for hazardous waste disposal, tracking and transportation, OSHA, TSCA and also the federal Clean Air Act. Implementation of and compliance with CCR Titles 22, 26 and 27, as well as Riverside County Ordinances No. 615, 617, 651, 718 and 348 would help monitor and reduce the potential risks to future development resulting from GPA No. 960 for the reasons discussed under Impact 4.13.A, above.

a. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies S 6.1 and S 7.2 and 7.3, in particular, provide mitigation for impacts associated with the accidental release of hazardous materials. Implementation of these General Plan policies would reduce the risks to future development resulting from GPA No. 960. See Section 4.13.3 for full text of each of these policies.

Policies S 7.2 and 7.3: These policies would also help further lower potential risks or impacts of hazardous materials on future land uses, trails, roads and other minor changes proposed by GPA No. 960. The existing General Plan contains a number of policies regarding hazardous materials, specifically Policies 7.1-7.3 (see Section 4.13.3). Implementation of these existing General Plan policies would help further reduce the risks of accidental releases of hazardous materials in Riverside County.

b. Compliance With Proposed New or Revised General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies S 6.1, S 7.1 and LU 7.9, in particular provide mitigation to further lower potential risks or impacts of hazardous materials on future land uses and provide mitigation for impacts associated with the accidental release of hazardous materials. Implementation of these General Plan policies would help reduce risks to future development resulting from GPA No. 960. See Section 4.13.3 for full text of each of these policies.

Policy S 6.1: This policy enforces the policies and programs prescribed within the County of Riverside Hazardous Waste Management plan which includes, but is not limited to, requiring compliance with federal and state laws pertaining to the management of hazardous wastes and materials and active public participation in hazardous waste management.

Policy S 7.1: This policy ensures that Riverside County's Emergency Services' Response Plan and the Multi-Jurisdictional Local Hazard Mitigation Plan are reviewed for considerations that would strengthen the plans. The policy also encourages the maintenance of mutual aid agreements with federal, state, local agencies and the private sector that would assist in hazardous materials response.

Policy LU 7.9: This new policy requires buffering be used to mitigate potential hazardous materials risks to urban uses from adjacent solid waste disposal facilities.

3. Finding on Significance for Impact 4.13.B

Compliance with the above existing regulations, programs and policies, would ensure that impacts related to the accidental release of hazardous materials as a result of future development consistent with GPA No. 960 would have a less than significant impact.

C. Would the project cause hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

Impact 4.13.C – Result in Hazardous Emissions or Related Hazards Within One-Quarter Mile of a School: Within Riverside County, there are 25 separate school districts for primary grades (K-12), four Community College Districts and a number of public and private colleges and universities. While no schools would be planned or built under GPA No. 960, the eventual build out of the General Plan would require additional schools, one or more schools of which may be located in the vicinity of a major hazmat site (see Table 4.13-A and Figure 4.13.1). In addition, school sites themselves contain hazardous materials of various types (such as pesticides, paints, cleaners and other commonly used substances). The use of such materials is governed by the schools and various regulations. The General Plan contains policies designed to protect the public and properties against hazardous material risks. However, the siting of school facilities is determined by individual school districts, based on criteria established by the California Department of Education (CDOE). While Riverside County can regulate the location of industrial uses within unincorporated areas, it cannot control the actions of individual school districts within the county, or the CDOE, in siting new schools. As a result, the potential exists for significant impacts on school facilities resulting from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or wastes within a quarter-mile of a school, but not as a result of the proposed project. School siting is also subject to review and approval by the California Department of Toxic Substances Control to help ensure school sites are not located on or near identified hazmat sites. Implementation of regulations and General Plan policies would ensure that future development consistent with GPA No. 960 would have less than significant hazmat impacts on schools.

1. Analysis of Impact 4.13.C

Future development accommodated by the proposed project would introduce various developed land uses throughout Riverside County that could be proximate to one or more existing or future schools. Therefore, there is a potential that schools could be affected by hazardous materials related to future development. Further discussion of school facilities is presented in EIR Section 4.17.5. However, federal, state and local school district

policies and procedures would be sufficient to minimize risks to school facilities, students and faculty, as well as the general public. Therefore, no significant impacts related to the possible future proximity of schools to land uses or other changes resulting from GPA No. 960 are anticipated. No project-specific mitigation is required.

2. Regulatory Compliance for Impact 4.13.C

As discussed above, under Impacts 4.13.A and 4.13.B, a number of federal, state and local regulations would help ensure that project-related hazardous materials risks to schools would be less than significant. For the reasons discussed above, compliance with CERCLA, RCRA, HMTA, HWCL and CCR Titles 22 and 26, as well as Ordinance No. 617, would help monitor and reduce the potential impacts from the potential proximity of schools to future land uses accommodated by GPA No. 960 and any attendant hazmat risks.

a. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies S 6.1 and S 7.2-7.3, in particular, provide mitigation for impacts associated with hazmat impacts on schools. As discussed under Impacts 4.13.A and 4.13.B, implementation of these General Plan policies would further reduce the hazmat risks to schools as a result of future development resulting from GPA No. 960. See Section 4.13.3 for full text of each of these policies.

b. Compliance with Proposed New or Revised General Plan Policies

Safety Policy S 7.1, proposed as part of GPA No. 960, would further prevent significant impacts related to hazardous materials and schools. See Section 4.13.3 for full text of the policy. Policy S 7.1 would ensure that the County's Emergency Services Response Plan and the Multi-Jurisdictional Local Hazard Mitigation Plan are reviewed for considerations that would strengthen the plans. The policy also encourages the maintenance of mutual aid agreements with federal, state, local agencies and the private sector that would assist in hazardous materials response.

3. Finding on Significance for Impact 4.13.C

Compliance with the above existing regulations, programs and policies, would ensure that hazardous material risks to schools resulting from GPA No. 960 would be less than significant.

D. Would the project be located on a site which is included on a list of hazardous materials compiled pursuant to California Government Code section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

Impact 4.13.D – Result in a Significant Hazard Due to Development on a Cortese List Hazardous Material Site: According to the California Department of Toxic Substances Control database, there are 19 sites within Riverside County that are on the Cortese list, as shown in Table 4.13-A. However, none of the proposed GPA No. 960 sites are adjacent to or in the immediate vicinity of any properties on the Cortese list. Compliance with applicable federal, state and county regulations would reduce the potential risks of public exposure to hazardous materials to less than significant levels.

1. Analysis of Impact 4.13.D

The following six hazmat sites on the Cortese list are proximate to proposed trail segments but not located directly within any proposed trail segment: March AFB/ARB; Foster-Gardner; Lockheed Beaumont No. 2; Temecula Target #107; and Torney Hospital. Similar to the impacts identified and analyzed in the previous subsections for Impacts 4.13.A, 4.13.B and 4.13.C, there is a potential that new or revised trails alignments or segments proposed under GPA No. 960 could be affected by existing hazardous materials sites. However, existing federal, state and local regulations and policies would reduce the risks. Therefore, no significant impacts related to the location of existing hazardous material sites are anticipated. Moreover, no project-specific mitigation is required.

2. Regulatory Compliance for Impact 4.13.D

As per above, under Impacts 4.13.A, 4.13.B and 4.13.C, a number of federal, state and local regulations would ensure the risk of accidental release of hazardous materials would be less than significant. Per the reasons above, compliance with CERCLA, RCRA, HMTA, HWCL and Titles 22 and 26 would help reduce risks from hazardous material sites on future development resulting from GPA No. 960.

a. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies S 7.3, 7.6 and 7.14, in particular, provide mitigation for impacts associated with hazardous material sites. As discussed under Impacts 4.13.A and 4.13.B, implementation of Policy S 7.3 would further reduce the impacts of future development as it relates to hazardous material sites through reinforcement of the County of Riverside Hazardous Waste Management Plan. This plan ensures the coordination of regional hazardous waste facility responsibilities and requires those businesses that handle hazardous materials. Policy S 7.6 ensures the continued improvement of emergency information dispersal through technology that tracks locations and types of hazardous materials. Policy S 7.14 also requires that emergency evacuation plans for hazardous materials release events are reviewed on a regular basis. Through regular review of evacuation plans, necessary updates can be made in order to maintain the efficiency of the plan, thereby further reducing potential hazardous impacts. See Section 4.13.3 for policy texts.

b. Compliance With Proposed New or Revised General Plan Policies

Safety Policies S 6.1 and S 7.1 would further prevent significant impacts related to hazardous material sites. See Section 4.13.3 for the full policy texts. The policies would further reduce the impacts of future development as it relates to hazardous material sites through reinforcement of the County of Riverside Hazardous Waste Management Plan, require the continued strengthening of Riverside County's Response Plan and Multi-Jurisdictional Local Hazard Mitigation Plan and ensure the continued coordination of various agencies in order to assist in a number of activities including hazardous materials response, thereby maintaining the efficiency of the plans and any mutual agency agreements.

3. Finding on Significance for Impact 4.13.D

Compliance with the above existing regulations and policies would ensure the risk of accidental release of hazardous materials resulting from future development accommodated by GPA No. 960 would be less than significant.

E. Would the project result in a safety hazard for people residing or working in the project area within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport?

Impact 4.13.E – Result in a Safety Hazard for People Within Two Miles of a Public or Public Use Airport: Future development accommodated by the project has the potential to introduce additional people and property within two miles of public airports. However, GPA No. 960 proposes changes within three Airport Influence Areas to improve safety by ensuring consistency between the General Plan and these airports' Airport Land Use Plans. Future proposed development in a Riverside County Airport Influence Area would be subject to review by the Riverside County Airport Land Use Commission (ALUC) to ensure safety and minimize risks both to people and property on the ground. This would also help ensure air travel safety and protect the functioning of the public air facilities. In addition, the General Plan includes provisions to minimize safety hazards for people living and working in proximity to these airports. However, due to the nature of air travel, potential safety hazards around airports, such as aircraft accidents, would remain. An unforeseeable air accident could result in substantial loss of life or property damage, even within the safety zones outlined in the General Plan and the Riverside County Airport Land Use Compatibility Plan (ALUCP). However, compliance with applicable County of Riverside and ALUC regulations would ensure that air hazard risks to the areas affected by GPA No. 960, including any resultant future development, would be minimized to less than significant levels.

1. Analysis of Impact 4.13.E

As noted above, GPA No. 960 includes a variety of specific Land Use Designation (LUD) changes to land surrounding three airports: Flabob, Riverside Municipal and Blythe Airports. These changes are designed to ensure any future development occurring on the sites is consistent with the applicable General Plan Airport Influence Area (AIA) and the sites' Airport Land Use Plans (ALUPs). Such proposals are also reviewed by the Riverside County ALUC for consistency. Other areas in AIA in the county are either already deemed consistent with ALUC plans or would require future consistency determinations (outside the scope of GPA No. 960). In addition, future development accommodated by GPA No. 960 would introduce various land uses to locations across Riverside County, including some that may be affected by activities at airport or air facilities, as well as accidents involving aircraft. The potential risk of death or injury from aircraft accidents could rise to unacceptable levels if land uses surrounding an airport: introduce large numbers of residents to the area; allow businesses to introduce large numbers of workers; or, permit buildings that are too tall or too close to primary air hazard zones (e.g., landing and takeoff areas at either end of a runway) or secondary air hazard zones (areas adjacent to a runway or directly under approach zones for landing or takeoff). The project does not directly propose these sorts of land uses and, further, implementation of existing laws and regulations would help reduce to less-than-significant levels the potential safety impacts on any future land development occurring around an airport as a result of GPA No. 960.

2. Regulatory Compliance for Impact 4.13.E

As detailed and explained below, compliance with the following existing laws and regulatory programs and policies outlined in Section 4.13.3 would help reduce potential safety impacts related to airports and air travel (e.g., aircraft accidents) for future land uses near airports, including any resulting from GPA No. 960 implementation.

a. Compliance with Riverside County Regulations

Local regulations exist that would reduce impacts related to public airport safety and hazards. These include Ordinance No.'s 269, 448 and 576. Through these regulations, development near public airports with the potential to adversely affect, or be affected by, hazards are regulated through Riverside County's review process (as described under Policies LU 15.3, 15.5 and 15.6, below).

Ordinance No. 448 - Airport Operations: This Riverside County ordinance establishes airport operating areas and regulates height standards and limits therein. The ordinance is adopted pursuant to the "Airport Approaches Zoning Law," CGC Sections 50485-50485.14. Through use of strict development standards, potential adverse impacts related to public airport safety and hazards would be reduced.

Ordinance No. 576 - Regulating County Airports: This ordinance establishes minimum standards for airports, heliports or Short Take Off and Landing airports (STOLports) to safeguard life, limb, property and public welfare. Among other things, for facilities owned or operated by the County of Riverside, it empowers the Director of Airports to prescribe regulations necessary for public airport use. In addition, all prescribed regulations are reviewed by ALUC and must ultimately go before the Board of Supervisors for approval. Through this review and regulation, potential adverse public airport safety risks and air travel hazards would be reduced to less-than-significant levels for any future development resulting from GPA No. 960.

Ordinance No. 269 – Height Limits Around March Field: This ordinance addresses safety of both air operations at and people and property surrounding March Field through the establishment of maximum height limits around the air base. Though ALUC and other March-related land use plans also apply, this ordinance also helps assure the necessary safety measures are in place. Thus, compliance with this ordinance by any land use proposals associated with GPA No. 690 would ensure potential adverse public airport safety risks and air hazards would be reduced to less-than-significant levels around March Air Field.

b. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies LU 1.8, 15.1, 15.2, 15.7, 15.8, 15.9 and 31.2, in particular, provide mitigation for impacts associated with public airport and safety hazards. Implementation of these General Plan policies related to public airport and safety hazards would reduce the impacts of future growth and development within Riverside County to less than significant levels. In particular, Policy LU 1.8 mitigates airport-related safety hazards by requiring review of land use proposals around airports involving general plan or zoning amendments, etc., to ensure that potential safety concerns are addressed. Policy LU 15.1 mitigates airport-related safety hazards by allowing airports to continue to operate while an operator addresses safety impacts, which in turn, reduces risks to surrounding land uses by providing an incentive to encourage airport operators to maintain adequate safety systems. Policies LU 15.1, 15.2, 15.7-15.9 and 31.2 mitigate airport-related safety hazards by requiring that development proposals located within the boundaries of an ALUP be consistent with said plan prior to approval in an effort to prevent land use conflicts and reduce potential impacts.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised and proposed policies of the Riverside County General Plan would further prevent significant impacts related to public airport and safety hazards. See Section 4.13.3 for full text of these policies. Policy LU 15.3 requires amendments to an ACLUP be reviewed against the General Plan to ensure planning consistency. (When inconsistencies are found, either the General Plan must be amended or the Board of Supervisors must overrule the ALUC, as provided by law (Government Code section 65302.3).) Policy LU 15.4

calls for the referral of development-level projects (General Plan amendments, specific plans, changes of zone, etc.) within the Airport Influence Area of an ALUCP to the ALUC for review and determination per the State of California's Airport Land Use Law. Policy LU 15.5 requires development applications within an ALUCP to go before ALUC if the applicable compatibility plan has not been found consistent with the General Plan. Policy LU 15.6 gives the County of Riverside the option of whether or not to submit development applications that fall within an ALUCP to ALUC for review if the applicable compatibility plan has been found consistent with the General Plan. Both of the proposed policies would further ensure that development applications are consistent with the General Plan and any applicable ALUCPs.

3. Finding on Significance for Impact 4.13.E

Compliance with the above existing regulations and policies, would ensure that impacts related to public airport and safety hazards as a result of future development accommodated by GPA No. 960 would have less than significant impacts.

F. Would the project result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip or heliport?

Impact 4.13.F – Result in a Safety Hazard for People in the Vicinity of a Private Airstrip or Heliport: Future development resulting from implementation of GPA No. 960 has the potential to introduce additional people and property within the vicinity of private airports, airstrips and heliports. However, the General Plan includes provisions to minimize safety hazards for people living or working in proximity to these facilities. Due to the nature of air travel, however, potential safety hazards around these facilities, particularly due to aircraft accidents, would remain, although usage levels of these types of facilities tend to be very low. Nevertheless, an air accident could result in substantial loss of life or property damage, even when development conforms to the standards for acceptable levels of risk, as outlined in the General Plan, ALUC standards, this EIR and Riverside County's safety plans. However, compliance with existing regulations and General Plan policies would ensure that this impact is less than significant.

1. Analysis of Impact 4.13.F

Future development accommodated by GPA No. 960 would introduce various land uses throughout Riverside County that could be affected by activities at private air facilities, as well as accidents involving aircraft. The potential risk of death or injury from aircraft accidents may rise to unacceptable levels if land uses surrounding an airport: introduce large numbers of residents; allow businesses that introduce large numbers of workers; or, allow buildings that are too tall or too close to primary hazard zones (e.g., runaway landing zones) or secondary hazard zones (airport approach zones). The project does not directly propose these sorts of land uses, however, and implementation of existing laws and regulations would reduce potential safety impacts on land uses around airports within Riverside County to less than significant levels.

2. Regulatory Compliance for Impact 4.13.F

As detailed and explained below, compliance with the following existing laws and regulatory programs outlined in Section 4.13.3 would help reduce potential safety impacts related to air facilities or aircraft accidents related to land uses around these facilities to the maximum extent possible.

a. Compliance With Riverside County Regulations

Local regulations would reduce impacts related to safety around private air facilities. These include Riverside County Ordinances No. 448 and No. 576. Through these regulations, development near private air facilities that would have the potential to adversely affect or be affected by air hazards are addressed through Riverside County's review process.

Ordinance No. 448: This ordinance establishes airport operating areas and regulates height standards and limits therein. The ordinance is adopted pursuant to the Airport Approaches Zoning Law, CGC Sections 50485-50485.14. Through the use of strict development standards, potential risks due to air travel and operations associated with private air facilities would be reduced.

Ordinance No. 576: This ordinance establishes minimum standards for airports, heliports or Short Take Off and Landing airports (STOLports) to safeguard life, limb, property and public welfare. Among other things, for facilities owned or operated by the County of Riverside, it empowers the Director of Airports to prescribe regulations necessary for public airport use. In addition, all prescribed regulations are reviewed by ALUC and must ultimately go before the Board of Supervisors for approval. Through additional review and increased regulation, potential risks associated with private air facilities and safety associated would be reduced.

b. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies LU 1.8, 15.2, 15.9 and 31.2, in particular, provide mitigation for risks associated with private air facilities and air safety. Implementation of these General Plan policies would reduce the risks to future development within Riverside County to less than significant levels. Specifically, Policy LU 1.8 mitigates airport-related safety hazards by requiring review of land use proposals around airports involving General Plan or zoning amendments, and other development-level project applications, to ensure that safety concerns are adequately addressed. Policies LU 15.2, 15.9 and 31.2 mitigate airport-related safety hazards by requiring development proposals within the boundaries of an ALUP be found consistent with the ALUP prior to County of Riverside approval in an effort to prevent land use conflicts and reduce potential impacts.

3. Finding on Significance for Impact 4.13.F

Compliance with the above existing regulations and General Plan policies would ensure that air safety and airport operation risks around private air facilities affecting future development accommodated by GPA No. 960 would have less than significant impacts.

G. Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

Impact 4.13.G – Impair or Interfere With an Adopted Emergency Response Plan or Emergency Evacuation Plan: Future development accommodated by the project has the potential to interfere with safety or evacuation plans if not consistent with these existing emergency plans. However, the overall level of future development accommodated by the General Plan would be slightly less under the proposed revisions of GPA No. 960 than it would under the existing General Plan, slightly lowering the populations needing potential evacuation. In addition, the construction of the new roads and connecting road segments proposed under GPA No. 960 would actually improve access to and from some of the more remote portions of the county, facilitating evacuations and emergency responses. Thus, overall, the proposed improvements associated with GPA No. 960

would have beneficial impacts on, and help reduce potential hazards related to, future increased populations. Further, compliance with existing regulations and General Plan policies would ensure that this impact is less than significant.

1. Analysis of Impact 4.13.G

Future development consistent with GPA No. 960 would introduce various land uses throughout Riverside County and may require existing emergency response and evacuation plans to be updated as inadequate infrastructure and access could result in the loss of life, property and county resources. GPA No. 960 does not directly propose any changes or updates to existing emergency response or evacuation plans; however, the proposal would actually lessen the amount of future development allowed within Riverside County when compared to existing allowable development levels. Therefore, conflicts with existing emergency response and evacuation plans are not anticipated.

Future development projects would be required to be reviewed for adequate infrastructure and access as well as consistency amongst Riverside County emergency and evacuation plans among many other environmental issues in order to ensure the safety of Riverside County residents and the physical environment. In addition, various elements within the General Plan contain policies that relate to emergency response and evacuation plans which would further reduce potential impacts of development on safety plans. Implementation of existing laws and regulations would also help reduce potential emergency response and evacuation plan impacts as a result of future development accommodated by GPA No. 960 to less than significant levels.

2. Regulatory Compliance for Impact 4.13.G

As detailed and explained below, compliance with the following existing laws and regulatory programs outlined in Section 4.13.3 would help reduce potential fire safety impacts related to land uses under GPA No. 960, but possibly not to less than significant levels; thus, the additional regulatory measures outlined below would also be needed.

a. Compliance with Federal and State Regulations

Compliance with the following federal and state regulations would further prevent significant impacts to evacuation plans.

California Codes: A variety of state codes, particularly PRC Sections 4290-4299 and GC Section 51178, require minimum statewide fire safety standards pertaining to: roads for fire equipment access; signage identifying streets, roads and buildings; minimum private water supply reserves for emergency fire use; and, fire fuel breaks and greenbelts. They also identify primary fire suppression responsibilities among the federal, state and local governments. In addition, any person who owns, leases, controls, operates or maintains a building or structure in or adjoining a mountainous area or forest-covered, brush-covered or grass-covered land, or any land covered with flammable material, must follow procedures to protect the property from wildland fires. This regulation also helps ensure fire safety and provide adequate access to outlying properties for emergency responders and safe evacuation routes for residents.

California Emergency Services Act: This law reduces the potential impacts of development on emergency response and evacuation plans through proper preparation and coordination with necessary agencies, including the federal government, and manages multiagency and multijurisdictional responses to emergencies within the state. The Act is also responsible for maintaining CalEMA which oversees this coordination.

Statewide Standardized Emergency Management System (SEMS): SEMS reduces potential impacts of development on emergency response and evacuation plans by coordinating agencies within the emergency management community through one system accessible to jurisdictions statewide.

b. Compliance with County Regulations

Compliance with the following Riverside County regulations would further prevent significant impacts to evacuation plans.

Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan: The County of Riverside has developed this plan to proactively plan facility, service and equipment needs for fire protection, and it incorporates the CDF Management Plan for several sub-zones within Riverside County. This plan outlines evacuation routes and plans for access for emergency vehicles.

Ordinance No. 787 - Fire Code Standards: This ordinance adopts the Uniform Fire Code and adds requirements that help ensure that buildings have adequate emergency access for fire safety personnel, equipment and apparatus, and do not hinder evacuation from fire, including potential blockage of stairways or fire doors.

c. Compliance with Existing Riverside County General Plan

Compliance with the federal and state laws and regulatory programs outlined above, would help reduce potential fire safety impacts related to land use and policy changes in GPA No. 960. However, implementation of the following existing Riverside County General Plan Safety (S) Element policy is necessary to reduce (mitigate) potential impacts to less than significant levels.

Policy S 5.12: This policy requires the County of Riverside to conduct and implement long-range fire safety planning, including improved mutual aid agreements with the private and public sector that assist with evacuation of residents as well as access for emergency responders.

d. Compliance with Proposed New or Revised General Plan Policies

Policy S 5.14: This policy requires review of inter-jurisdictional fire response agreements, and improvements to firefighting resources as recommended in the Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan to keep pace with development, and ensure adequate fire reporting and response times per the Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan. It also requires adequate fire flows of water, etc., to provide adequate fire safety for residents of fire-prone areas (i.e., routes to evacuate and allow emergency access).

New and revised Policy 5.14 of the Riverside County General Plan would further prevent significant impacts related to evacuation plans. See Section 4.13.3 for full text of these policies.

3. Finding on Significance for Impact 4.13.G

Compliance with the above regulations and General Plan policies would ensure that impacts related to emergency response and evacuation plans as a result of future development accommodated by GPA No. 960 would have less than significant impacts.

H. Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact 4.13.H – Expose People or Structures to Significant Risk Due to Wildland Fires: Areas of high fire hazard exist within unincorporated portions of Riverside County, including rural, mountainous terrain, as well as areas adjacent to, or covered by, natural grasslands or brush. Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. Nevertheless, GPA No. 960 would accommodate future development in previously undeveloped areas, including some with high or very-high fire hazards. This would increase both the number of people and amount of property potentially exposed to fire hazards. Additionally, there is the potential for an increase in the occurrence of fires, particularly in urban-wildland interface areas, due to increasing human encroachment. Compliance with existing regulations and General Plan policies would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.13.H

Future development accommodated by GPA No. 960 would introduce various developed uses throughout Riverside County; uses that may be affected by fire or the potential risk of fire. The risk of death, injury or property damage from fire may rise to unacceptable fire risks if land uses are allowed into areas of high or unacceptable risk without proper planning or protection, or if roads are inadequate for fire access and evacuation.

Specifically, as shown in Table 4.13-J, above, land use changes associated with GPA No. 960 would result in future development that encroaches into or intermingles with wildlands in which fire hazard risks are high to very high. The Goodhope and Meadowbrook RVLUOs are within SRAs. Meadowbrook overlaps both the High and Very High fire hazard zones, while Goodhope is in a non-hazard zone but adjacent to High and Very High hazard areas. The rest of the affected policy areas and overlays are divided among the federal, SRAs and LRAs. However, none of these proposed changes would result in significant impacts related to wildland fires as long as new development is reviewed by the RCFD and CalFire as appropriate, and "fire safe" design, consistent with Riverside County requirements (such as Ordinance No. 787) and the Uniform Fire Code (as amended and adopted by the County of Riverside) are used to plan and construct property improvements.

The trails are divided among the federal, SRAs and LRAs. There are proposed trail segments in all fire hazard zones and many, if not most, in the more flat areas are in non-hazardous zones. Due to the nature of trails, there would be no adverse impacts that require mitigation for any of these locations. In addition, trails actually provide minor fire or fuel breaks and routes for firefighters to access areas with wildland fires. Therefore, these improvements may be beneficial in limiting wildland fire damage.

The locations for the proposed roads or road segments in very high or high fire hazard zones vary and in the more flat areas of Riverside County, most are in non-hazardous zones. Due to the relatively fire-proof nature of roads, there would be no adverse impacts that require mitigation for any of these locations. In addition, roads provide fire or fuel breaks and routes for firefighters to access areas with wildland fires. Therefore, these improvements would be beneficial to reducing wildland fire hazards. There are proposed commercial land use designations in all fire hazard zones, which vary by slope and vegetation characteristics. Future development of these sites would not result in significant wildland fires risks as long as the new proposed development meets

RCFD and CalFire standards, as applicable, and "fire safe" design, consistent with the Fire Code (as amended per Riverside County ordinance).

Overall, implementation of existing laws and regulations, including standards for roadways and access, development siting and ignition-resistant building materials, among other things, would reduce potential fire safety impacts on land uses within Riverside County to less than significant levels.

2. Regulatory Compliance for Impact 4.13.H

As detailed and explained below, compliance with the following existing laws and regulatory programs would help reduce potential fire safety impacts related to land uses accommodated by GPA No. 960 to less than significant levels.

a. Compliance with State and County Regulations

To achieve fire protection for all residents of Riverside County, the Riverside County Department of Building and Safety and the Riverside County Fire Department enforce fire standards as they review building plans and conduct building inspections. Additional programs implemented to ensure compliance with established fire standards include: the maintenance of a Countywide Information Map, showing high fire hazard areas, and sighting and construction methods that reduce fire risks to structures developed within high fire hazard areas; the provision of uniform fire improvement standards for various land uses that ensure appropriate fire protection measures are incorporated into the design, construction and operation of these land uses; and the continued updating and use of the Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan to ensure new fire protection facilities are added when demand increases warrant them.

The County of Riverside requires a development within high fire hazard areas to design and implement fuel modification programs for the interface between developed and natural areas within and adjacent to the proposed project area. Such fuel modification plans shall be subject to approval by the Riverside County Fire Department. The fuel modification programs shall be achieved through graduated transition from native vegetation to irrigated landscape. The program shall also establish parameters for the percent, age, extent and nature of native plant removal necessary to achieve the Riverside County fire prevention standards to protect human lives and property, while preserving as much natural habitat as practicable.

The County of Riverside also actively enforces Ordinance No. 695, which requires the abatement of "hazardous vegetation;" defined in the ordinance as vegetation that is flammable and endangers the public safety by creating a fire hazard. The type of abatement can depend on the location, terrain and vegetation present, but typically includes mowing or disking (plowing) vegetation, such as seasonal and recurrent weeds, stubble, brush, dry leaves and tumbleweeds. Abatement is generally required along roadways and habitable structures either on or adjacent to the property. For unimproved parcels adjacent to a roadway, a 100-foot wide strip of abated land at the parcel boundary is required. A similar strip is required around structures on an adjacent improved parcel.

According to the ordinance, determination of the appropriate clearance distances are based on visual inspection of the parcel and consideration of all fire risk factors for the property or adjoining structures. These factors include local weather conditions, fuel types, topography and the local environment. Where the parcel's terrain cannot be disked or mowed, the Riverside County Fire Chief may require or authorize the use of other means of removal. In addition, the County of Riverside requires all new structures in unincorporated areas comply with the construction requirements of Ordinance No. 787, including use of fire-retardant roofing material as per the California Building Code.

California Codes: A number of California regulations, including PRC Sections 4290-4299 and CGC Section 51178, address fire safety. In particular, these sections require minimum statewide fire safety standards pertaining to: roads for fire equipment access; signage for identifying streets, roads and buildings; minimum private water supply reserves for emergency fire use; and, fire fuel breaks and greenbelts. They also identify primary fire suppression responsibilities among the federal, state and local governments. In addition, it sets fire safety standards for all buildings and structures in, or adjoining, mountainous areas, or forest-, brush- or grass-covered lands or any land covered with flammable material to protect property from wildland fires.

Riverside County Fire Department Fire Protection and Emergency Medical Services Strategic Master Plan: The County of Riverside has developed this plan to proactively plan facility, service and equipment needs for fire protection. It also incorporates the CDF Management Plan for several sub-zones within Riverside County. Implementation of this plan helps reduce potential risks of fire for residents in areas of moderate to high fire danger.

Ordinance No. 787 - Fire Code Standards: This ordinance adopts the Uniform Fire Code and adds requirements to further protect people and structures from fire risks, and ensures that building would not impede emergency egress for fire safety personnel, equipment and apparatus would not hinder evacuation from fire, including potential blockage of stairways or fire doors.

Ordinance No. 695 - Abatement and Notices for Hazardous Vegetation: Each spring, the CDF and RCFD distribute hazard abatement notices. These notices, which currently go to about 30,000 Riverside County residents, instruct property owners to reduce fuels (flammable vegetation) around their property. A minimum 30-foot clearance is required around all structures; this can be extended to 100 feet in areas where severe fire hazards exist. On unimproved parcels, the property owner is required to disc or mow 100 feet along the perimeter of the property. These requirements substantially improve public safety and property protection for fire-prone areas by removing fire fuels.

b. Compliance with Existing Riverside County General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies LU 10.1 and S 5.12 in particular, provide mitigation for impacts associated with wildland fire risks. Implementation of these General Plan policies would aid in reducing fire risks to future development accommodated by the project to less than significant levels. Specifically:

Policy LU 10.1: This policy requires that future developments contribute a fair amount for the funding of infrastructure, public facilities such as police and fire facilities in order to ensure adequate availability of such infrastructure and services, thereby, reducing potential hazards.

Policy S 5.12: This policy encourages the practice and implementation of long-range fire safety planning as well as more stringent codes and improved infrastructure aimed at the reduction of fire hazards including wildland fire hazards.

Policies LU 5.2 and 10.1: These policies ensure that new development contribute funds to be used to provide necessary fire and emergency response services and that such facilities are constructed in a timely manner to ensure adequate protection of the people and property of Riverside County.

Policies S 5.9, 5.12 and 5.15: These policies require development be constructed to various building and fire code standards that are designed to ensure structures provide appropriate levels of fire resistance and are situated

in a manner that provides adequate emergency access and evacuation, and allows for maintaining of appropriate fire fuel modification zones.

Policy S 5.13: Several policies direct the County of Riverside in how and when and to what standards to provide appropriate fire protective services. This policy, in particular, addresses water connections and reservoirs used for firefighting purposes.

c. Compliance with Proposed or Revised General Plan Policies

Of the General Plan policies listed in Section 4.13.3, above, Policies LU 5.1 and LU 7.8, S 5.1-5.8, S 5.11 and S 5.14-5.21, in particular, provide mitigation for impacts associated with wildland fire risks. Implementation of these General Plan policies would aid in reducing the impacts of future growth and development within Riverside County to less than significant levels. Specifically:

Policies LU 5.1 and 7.8: These policies ensure that future development would not overburden infrastructure and public services and that such infrastructure and services would continue to operate at adequate levels. Policy LU 7.8 also requires future development located within designated Fire Hazard Severity Zones to provide for fuel modification as determined by the Fire Department.

Policies S 5.1-5.8 and 5.14-5.21: These policies mitigate wildland fire risks through construction design standards and requirements; coordination amongst various Riverside County agencies, water agencies and surrounding jurisdictions to implement long-range fire safety planning; improved infrastructure, fire response agreements and adequate water supply and flow with coordination driven by Riverside County's Fire Protection Strategic Master Plan and the General Plan Safety Element; limiting development potential in areas that lack water and access roads; continued usage of fuel breaks, brush management, controlled burnings, revegetation and fire roads including clearance inspections; encouraging future development located within fire hazard zones to develop where adequate fire and emergency services already exist or are being planned; providing services that meet minimum travel times for fire; frequent updates of fire hazard maps; and fire mitigation through landscaping. These policies help protect structures and ultimately Riverside County residents from fire damage, injury or loss of life.

Policy S 5.11: This policy addresses brush clearance and fire inspections of properties. It is, in essence, implemented through Ordinance No. 659, as described above. By ensuring hazardous vegetation is abated around structures and property, this policy helps protect structures and ultimately Riverside County residents from fire damage, injury or loss of life.

3. Finding on Significance for Impact 4.13.H

Compliance with the above existing regulations and General Plan policies would ensure that impacts related to wildland fire risks as a result of future development accommodated by GPA No. 960 would have less than significant impacts.

4.13.7 Significance After Mitigation – Hazardous Materials and Safety

The aforementioned policies mandate compliance with local, state and federal regulations regarding hazardous materials, airports and aircraft hazards, wildland fires and emergency evacuations, and establish procedures for safe planning around airports and air facilities. Therefore, implementation of applicable federal, state and local regulations, in addition to the stated General Plan policies, would ensure impacts related to hazardous materials, airport and aircraft hazards, and wildland fire hazards and emergency evacuation plans are less than significant. No additional mitigation is required.

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Section 4.14

Mineral Resources

Section 4.14 Mineral Resources

4.14.1 Introduction

Minerals are defined as any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances. Minable minerals or "ore deposits" are defined as a concentration of ore or minerals having a value materially in excess of the cost of developing, mining and processing the mineral and reclaiming the area. Regulating this resource, the County of Riverside implements the State of California's Surface Mining and Reclamation Act (SMARA) at the local level. This section assesses potential impacts associated with mineral resources that could occur as a result of future development accommodated by the proposed project, GPA No. 960.

4.14.2 Existing Environmental Setting - Mineral Resources

Mineral resources are an integral part of the development and economic well-being of the County of Riverside. The conservation, extraction and processing of mineral resources is essential to meeting the needs of Riverside County and supporting the continued growth of the region. Mineral resources serve various public, commercial, scientific and recreational purposes benefiting both the private and public sectors. In Riverside County, minerals are a foremost natural resource, important not only to the economic health of Riverside County, but to the many industries outside the county that depend on them as well. The non-renewable characteristic of mineral deposits necessitates careful and efficient management to prevent waste, careless exploitation and uncontrolled urbanization. Most of the economically valuable mineral deposits known to occur in Riverside County are located along Interstates 15, 215 and 10.

A. Economically Important Minerals in Riverside County

Riverside County has a rich history of over 175 years of mining, starting with the California Gold Rush. Over the years, diverse mineral resources, including extensive deposits of clay, limestone, iron, sand and aggregates have been influential in the development of the region and have served as an important component of Riverside County's economy. Minerals commercially extracted from Riverside County in the past included a number of valuable minerals refined directly or used in industry, such as:

- Gold
- Copper, iron and tin
- Lead, silver, zinc and arsenic
- Rare earth elements (monazite, xenotine)

- Antimony
- Mica and gypsum
- Fluorite
- Coal
- Magnesite and tungsten
- Feldspar, quartz and silica
- Wollastonite and other asbestos-like minerals
- Gemstones (tourmaline, beryl, agate, etc.)

In the present century, the region's most economically valuable mineral resources are those used as building materials and in their manufacture. Roughly 80% of California's mineral production now consists of such "industrial" minerals. Industrial minerals occurring and extracted in Riverside County currently include:

- Clay (used to make brick, pipe, tiles and other building products)
- Limestone (used to make Portland cement and other cement products)
- Sand and gravel (collectively, "aggregates," used as road base and in concrete)
- Specialty sands (such as those used for glass-making and foundry molds)
- Rock commodities (broken and crushed stone products, as well as stone slabs used for cemetery markers, building facings, countertops, etc.)

Rapid urbanization in Riverside County produces intense competition for land, as well as increases the need for industrial commodities. The long-term viability of mines producing industrial building commodities, such as aggregate, sand and clays, could easily become threatened by the urban communities that they enable to expand. Expanding urban areas typically force resource production away from its core. However, it is the urbanizing areas that most need an affordable source of mineral resources for continued growth. For example, the State of California estimates that on average, 229 tons of aggregate are used in the construction of a single house.

Some minerals can be marketed worldwide; however, the marketability of most industrial commodities is directly dependent on the distance of transport. When hauling sand and gravel, for instance, the cost of the commodity doubles for every 50 miles of truck transport. Additionally, when urban and suburban development encroaches on existing mining operations, new residents can come into conflict with the effects of mining operations, such as noise and vibration, dust and heavy truck traffic. For these reasons, Riverside County must continue to be active in balancing the delicate issues of conservation of these non-renewable resources and expansion of the communities they are mined to serve.

B. Mineral Resource Zones

High demand for mineral commodities perpetuates the need for access to mineral deposits for current and future extraction. To protect the resources that serve this demand, the State Geologist is tasked with classifying land according to the presence or absence of significant mineral deposits according to a priority list established by the State Mining and Geology Board (SMGB).

The SMGB uses "Mineral Resource Zones" (MRZs) to classify lands that contain valuable mineral deposits. Use of MRZs can help identify mineral deposits to be protected from encroaching urbanization and land uses incompatible with mining. The MRZ classifications reflect varying degrees of mineral significance, determined by

available knowledge of the presence or absence of mineral deposits, as well as the economic potential of the deposits. In this process, it is important to recognize that mineral-bearing lands classified by the State Geologist are not explicitly reserved for mining. Nor do they take into account existing land uses. Rather, the State of California only develops and presents the data to planning agencies, which must make decisions concerning mineral resources and mining at the local level. Accordingly, the SMGB uses the following MRZ classifications:

MRZ-1: Areas where available geologic information indicates no significant mineral deposits are present or that there is little likelihood for their presence.

MRZ-2a: Areas where available geologic information indicates that there are significant measured or indicated mineral deposits present. According to the SMGB, land included in this category is of "prime importance" because it contains known economic mineral deposits.

MRZ-2b: Areas where available geologic information indicates that significant inferred mineral resources are present. This includes discovered deposits that are inferred to occur in economically viable concentrations, as well as those currently occurring at sub-economic levels based on limited samples. More importantly, MRZ-2b areas are considered potentially suitable for upgrade to MRZ-2a status, should future conditions warrant.

MRZ-3a: Areas where the available geologic information indicates that mineral deposits exist, however, the significance of the deposit is undetermined. Additional exploratory work would be needed to determine specific categorization. MRZ-3a areas are considered to have moderate potential for the discovery of economic mineral resources (the discovery of which could lead to upgrading to MRZ-2, for example).

MRZ-3b: Areas where the available geologic information indicates that mineral deposits are likely to exist, however, the significance of the deposit is undetermined. This class denotes areas where presence of the mineral is inferred and/or not visible from the surface geology. Further exploration would be needed to ascertain full potential of the area.

MRZ-4: Areas where there is not enough information available to determine the presence or absence of mineral deposits. For land use purposes, it should be noted that MRZ-4 differs from MRZ-1 in that it denotes areas lacking enough *information* for a more specific classification to be made, rather than lacking the mineral deposits themselves.

After an area has been classified into MRZs, the SMGB then determines if the "classified" mineral resource deposit warrants "designation" as being of either "regional" (multi-community) or "statewide economic significance." In contrast to classification, which inventories mineral deposits without regard to existing land use, the purpose of designation is to identify those areas that are of prime importance in meeting the future needs of the study region and that remain available from a land use perspective. Once completed, the SMGB transmits the information to the affected counties and cities for mandated incorporation into their land use planning processes.

Figure 4.14.1 (Mineral Resource Areas Map) identifies the areas within Riverside County with potential mineral resource deposits, according to State of California MRZ classifications. At present, Riverside County is classified into a total of roughly 83,267 acres of MRZ-1, 71,270 acres of MRZ-2 (including 22,114 acres MRZ-2a and 7,428 acres MRZ-2b), 1,336,723 acres of MRZ-3 and 1,751,892 acres of MRZ-4. Within the MRZ-2 class, approximately 11,853 acres have been designated "regionally significant" by the SMGB. (See Table 4.14-A (Changes Affecting State Mineral Resource Areas).) In addition, roughly 6,371 acres within the Palm Springs region have been approved by the SMGB for designation as being of regional significance and are currently awaiting rulemaking to codify the decision. There are no sites within Riverside County designated as "locally important mineral recovery sites."

C. Aggregate Resources

California is the nation's leading producer of construction aggregate, with a total production of 235 million tons in 2005. This is roughly 6.5 tons of aggregate per person in the state in 2005. Over the next 50 years, it is estimated that California will need approximately 13.5 billion tons of aggregate. However, the industry is highly vulnerable to land use issues on two fronts. Aggregate resources located too close to urban or environmentally sensitive areas can limit or stop their development. Secondly, a mineral resource may be too far from a potential market to be economically viable.

Beyond geological viability, MRZ-2 areas are evaluated to determine if current land uses would preclude mining. Areas currently permitted for mining and areas the State of California finds to have land uses compatible with possible mining are identified as "Sectors." To protect construction aggregate resources, in addition to being classified MRZ-2a or MRZ-2b, lands known to contain "significant aggregate resources" are assigned to Sectors. The State of California uses these Sectors to estimate aggregate resources available for the next 50 years.

In defining economic viability, the State of California uses large, multi-county "Production-Consumption Regions" as their boundaries for study areas for aggregate production and their associated market areas. As part of the classification process, the State of California has calculated both the fifty-year aggregate demand forecast and the amount of aggregate resource available for the given area. The status of each aggregate resource area relevant to Riverside County is provided below.

1. Temescal Valley – Orange County Production-Consumption Region

This region is the largest within the greater Los Angeles metropolitan area. It spans Orange County from Seal Beach to San Onofre and stretches northeast into Riverside County along the Santa Ana River to encompass portions of Norco and Corona, and also runs south into upper Temescal Canyon. In addition to serving western Riverside County, it also provides Orange County and northern San Diego County with aggregate exports.

The TV-OC Region contains a number of resource Sectors State-designated as being of "regional significance," as well as "regionally significant construction aggregate resource areas" (ARAs) in portions of the Santa Ana River within the Prado Basin and also behind Mount Rubidoux. Significant aggregate resources also occur south of Corona within and along Temescal Wash and south towards Lake Elsinore. The SMGB established land designations for the region in 1984 (SMARA Designation Report No. 3), and the most recent SMGB classification occurred in 1991 (Special Report No. 165). Although two focused areas have been addressed in recent years, as per Special Report No. 200 and No. 212 (see discussion below), the State of California has not *systematically* updated either classifications or designations since 1991. Figure 4.14.2 (Riverside County Aggregate Resources of the Temescal Valley-Orange County and San Bernardino Production-Consumption Regions) shows current mapped mineral resource information for the area.

In 2007, the State of California reported that the active mines in Orange County are "nearly exhausted" and that the fast-growing county now "relies on Temescal Valley for much of its aggregate needs." As a result, the Temescal Valley Production District has become the largest sand and gravel production district in the United States, having produced about 12 million tons of aggregate in 2005. Per a 2007 report issued by the California Geological Survey, the region's 50-year aggregate demand is 1,122 million tons. As of 2007, a total of approximately 355 million tons were being supplied by permitted aggregate resources; 32% of the forecast demand. Data indicate that approximately 6,000 million tons of mineral resources are secured within the region.

New Location – Proposed Quarry Site: In 2007, the State Geologist investigated and subsequently reclassified a portion of Riverside County within the Temescal Valley-Orange County Production-Consumption Region at the petition of Granite Construction Company. Specifically, the State found that aggregate materials present on the site meet specifications for use in Portland cement concrete (PCC) and that the resource exceeds the minimum economic viability threshold value of $16.41 million established by the SMGB. As a result, approximately 290 acres of the 310-acre Granite Construction Company "Liberty Quarry" site were reclassified by the SMGB from MRZ-3a to MRZ-2a for PCC-grade aggregate. This new State MRZ-2 designation is reflected in Figure 4.14.2. It should be noted that this classification is a State of California action that occurred without regard to any future Riverside County or City of Temecula actions.

New Location – Day Street Aggregate Site: In 2009, the State Geologist investigated and subsequently reclassified a portion of Riverside County within the Temescal Valley-Orange County Production-Consumption Region at the petition of First Industrial Realty Trust for a site off Day Street in the Perris/Cajalco Road area. Specifically, the State found that aggregate materials present on the site meet specifications for use in Portland cement concrete (PCC) and that the resource exceeds the minimum economic viability threshold value established by the SMGB. As a result, the 500-acre site was reclassified by the SMGB from MRZ-3 to MRZ-2 for PCC-grade aggregate. This new State MRZ-2 designation is reflected in Figure 4.14.2 (and also Figure 4.14.1). Again, this classification change is a State of California action taken without regard to any future Riverside County actions.

2. San Bernardino Production-Consumption Region

This region includes much of southwestern San Bernardino County, plus portions of western Riverside County not in the Temescal Valley P-C Region. In Riverside County, this specifically includes significant aggregate resources along the San Gorgonio River in the Cabazon area, several localities in Lake Elsinore, portions of Day Creek in the northwest corner of the county and areas along the Santa Ana River between the cities of Colton and Riverside.

Classification of the region occurred in 1984 (Special Report No.143, Part VII) and the SMGB designated lands within the region as being of "regional significance" in 1987 (SMARA Designation Report No. 5). The classification was updated in 2008 (Special Report No. 206), as described later in this section. No designation changes have occurred for this region since the 1987 report. Figure 4.14.2 shows current mapped mineral resource information for the area, including data updated since the 2003 adoption of General Plan Figure OS-5.

Within this region, Sector E-24, located in the Santa Ana River channel north of Mount Rubidoux and the City of Riverside, encompassed approximately 114 acres as of 2008. This is down from the 1987 report indicating 208 acres were available, reflecting the general cessation of mining as urban development engulfs the region. As of 2008, the Sector was estimated to possess approximately 16.7 million tons of available aggregate resources.

According to the 2008 report, since 1987 approximately 18% of the San Bernardino Production-Consumption Region's designated lands have been lost to incompatible land uses; a loss of approximately 959 million tons of aggregate resources. The 50-year consumption demand for the region, however, was estimated at 1,131 million tons of which 735 million tons must be Portland cement concrete-grade (PCC) aggregate. This is more than double the previous State forecast. In addition to supplying both San Bernardino County and western Riverside County, materials are also exported to northern San Diego County.

3. Palm Springs Production-Consumption (P-C) Region

This region generally includes the eastern portion of Riverside County running from Cabazon through Coachella Valley and into the Thermal area. It encompasses roughly a dozen aggregate resource areas, including the eastern end of the San Gorgonio River and part of Whitewater River, small areas in Little Morongo Canyon and the Thousand Palms area, alluvial fans in the Thermal area, Thermal Canyon, Fargo Canyon, Berdoo Canyon and, lastly, a wide stretch of the North Indio Hills generally above Dillon Road. In addition to supplying both Riverside County and portions of San Bernardino County, the region also exports sand by rail to the Los Angeles metropolitan area. Figure 4.14.3 (Aggregate Resources of the Palm Springs Production-Consumption Region) shows current mapped mineral resource information for the region, including data updated since the 2003 adoption of General Plan Figure OS-5.

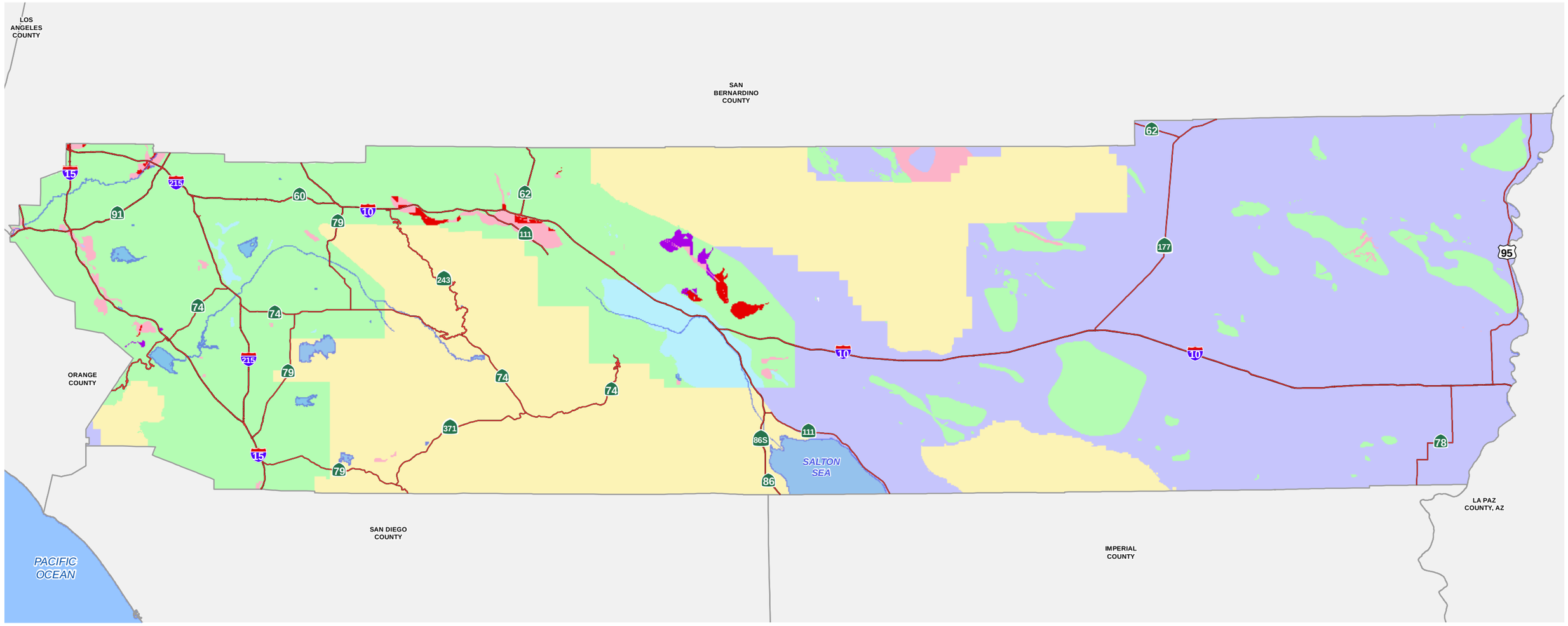
Since 1985, permitted Portland cement concrete-grade (PCC) aggregate reserves (lands subject to mining permits) have increased from 67 million tons to 167 million tons, extending the P-C region's projected depletion date from 2012 to 2038. The anticipated 50-year consumption demand for the region was estimated by the State at 307 million tons, of which 138 million tons must be PCC aggregate; nearly double the previous (1988) State forecast. As of 2007, the State of California estimates that the region contains roughly 1,300 million tons of available aggregate resources. Included in this total is Sector J-1, encompassing 2,633 acres in the North Indio Hills area, which is estimated to have 191 million tons of aggregate resources.

Classification of the region occurred in 1988 (Special Report No. 159) and the SMGB designated lands within the P-C region as being of "regional significance" in 1989 (SMARA Designation Report No. 10). The classification was updated in 2007 (Special Report No. 198), as described later in this section. In October 2010, the SMGB approved these areas for designation and they are currently awaiting rulemaking to adopt the designation of mineral lands of regional significance within the Palm Springs Production-Consumption Region. Accordingly, since such a designation is assumed to be reasonably foreseeable, pending only formal rulemaking, this EIR treats lands mapped as "proposed for regional significance designation" the same as those with an adopted designation.

D. Baseline Changes - Resource Mapping Updates

Pursuant to PRC Section 2762, the Surface Mining and Reclamation Act (SMARA) provides that a city or county, upon receipt of a mineral land Classification Report prepared by the State Geologist or a mineral land Designation Report from the SMGB, must prepare and incorporate into its general plan the new information, as well as a set of "Mineral Resource Management Policies" (MRMPs). These MRMPs must be submitted to and reviewed by the SMGB for comment prior to adoption by the city or county. GPA No. 960 and this EIR are intended to fulfill these requirements.

Since the preparation of the 1999 Existing Settings Report and EIR No. 441 for the 2003 General Plan, additional information on environmental conditions related to mineral resources has been released. The California Geological Survey has issued several reports between 2003 and 2009 relevant to Riverside County, as described below. The following State of California reports affect Riverside County's known mineral resources and are reflected in both the revised baseline conditions for this EIR (Figures 4.14.2 and 4.14.3) and the resultant updated General Plan Figure OS-5 (which is based on Figure 4.14.1 herein):



Data Source: California Geological Survey (2009)

Mineral Resource Zones

- MRZ-1 (No significant mineral deposits)
- MRZ-2 (Known or inferred significant mineral resources)
- MRZ-3 (Significance of mineral deposits undetermined)
- MRZ-4 (Presence and significance of mineral deposits undetermined)
- Unstudied (No MRZ designation issued)

State Designated Sectors

- Significant
- Proposed as Significant
- Highways
- Waterbodies

Figure 4.14.1

December 16, 2013

Miles
0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

MINERAL RESOURCE ZONES

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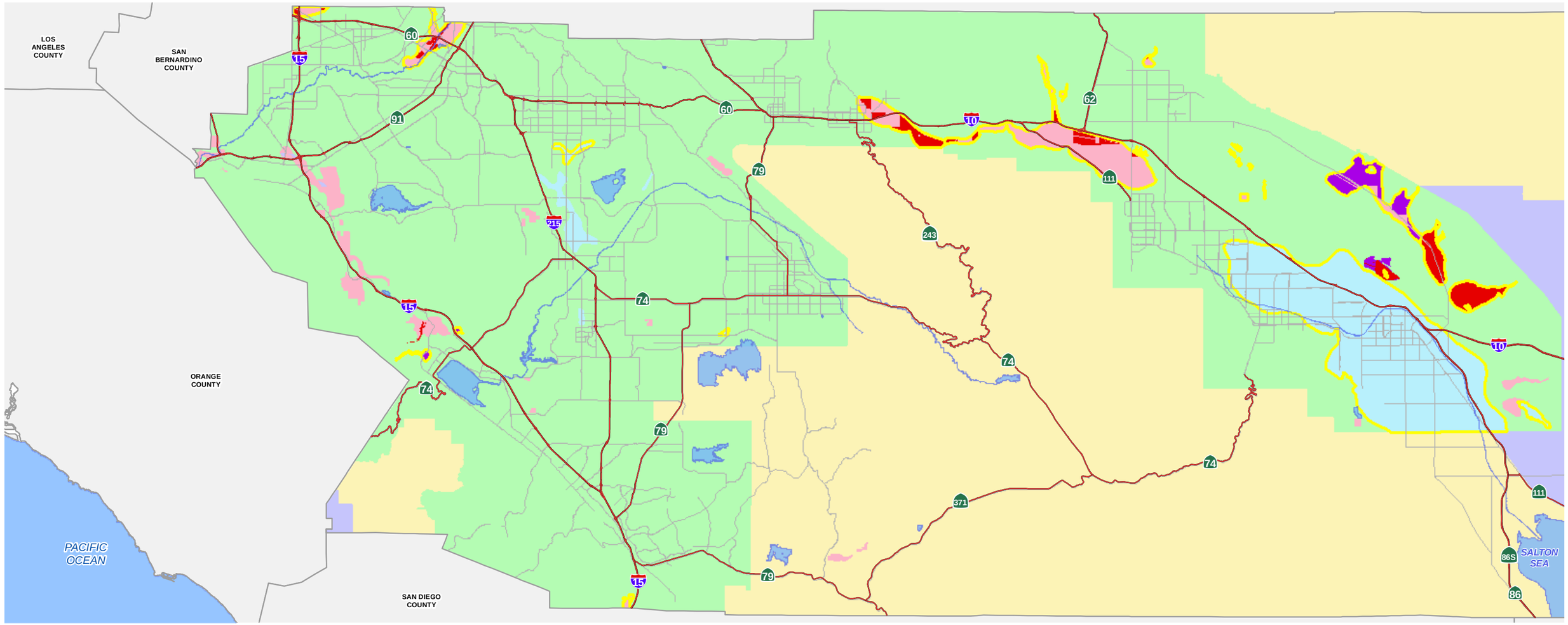

Data Source: California Geological Survey (2009)

Mineral Resource Zones

- MRZ-1 (No significant mineral deposits)
- MRZ-2 (Known or inferred significant mineral resources)
- MRZ-3 (Significance of mineral deposits undetermined)
- MRZ-4 (Presence and significance of mineral deposits undetermined)
- Unstudied (No MRZ designation issued)

State Designated Sectors

- Significant
- Proposed as Significant
- New MRZ and Sectors
- Highways
- Waterbodies

Figure 4.14.2

December 16, 2013

0 5 10 Miles

MINERAL RESOURCE ZONES - TEMESCAL VALLEY AND SAN BERNARDINO PRODUCTION-CONSUMPTION REGIONS

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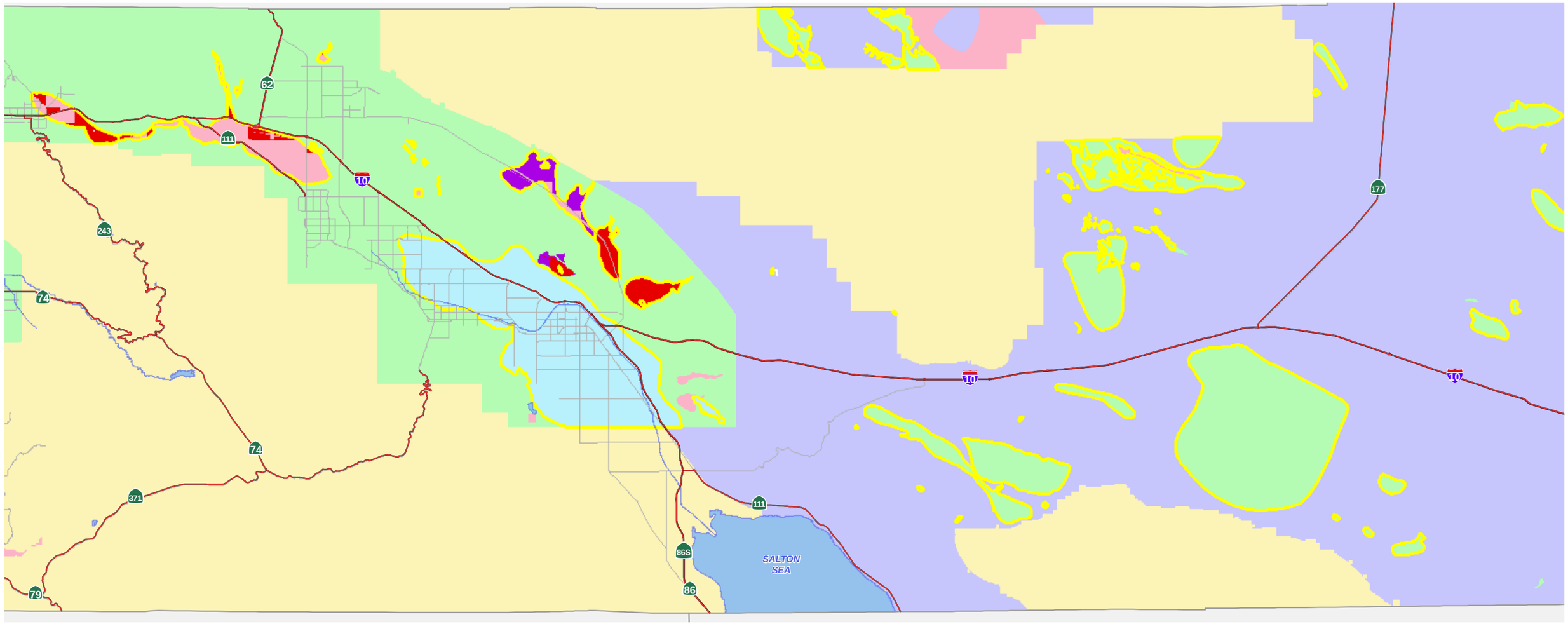

Data Source: California Geological Survey (2009)

Mineral Resource Zones

- MRZ-1 (No significant mineral deposits)
- MRZ-2 (Known or inferred significant mineral resources)
- MRZ-3 (Significance of mineral deposits undetermined)
- MRZ-4 (Presence and significance of mineral deposits undetermined)
- Unstudied (No MRZ designation issued)

State Designated Sectors

- Significant
- Proposed as Significant
- New MRZ and Sectors
- Highways
- Waterbodies

Figure 4.14.3

December 16, 2013

Miles

0 5 10

MINERAL RESOURCE ZONES - PALM SPRINGS PRODUCTION-CONSUMPTION REGIONS

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Special Report No. 198: This 2007 report updated the 1988 mineral land classification for Portland cement-grade aggregate in the Palm Springs Production-Consumption Region. In the update, 22,011 acres previously classified as MRZ-2 were reclassified as MRZ-2a, and 7,487 acres previously classified as MRZ-3 were reclassified as MRZ-2b. Extensive areas containing aggregate deposits, "the significance of which cannot be evaluated from available data," were classed MRZ-3. And, a number of areas were classed MRZ-1. In total, this report addressed 15,692 acres of PCC-grade aggregate resources in Sectors, including the addition of 6,638 acres in new Sectors and the loss of 911 acres to infrastructure development deemed incompatible with mining activities. See Figure 4.14.3 for changes.

Special Report No. 206: This 2008 report updated the 1984 mineral land classification for Portland cement-grade aggregate in the San Bernardino Production-Consumption Region. The only change in this report affecting Riverside County was the reclassification of a 90-acre crushed-stone deposit (Sector K) within the Gavilan Hills north of the City of Lake Elsinore that was reclassified from MRZ-3 to MRZ-2. See Figure 4.14.2 for changes.

Special Report No. 200: This new classification report for the Granite Construction Company Liberty Quarry site was released in 2007. In it, the State Geologist investigated (independent from the County of Riverside) and subsequently reclassified a portion of Riverside County at the petition of the Granite Construction Company. As a result, approximately 290 acres of the 310-acre "Liberty Quarry" site was reclassified from MRZ-3a to MRZ-2a for PCC-grade aggregate. See Figure 4.14.2 for changes.

Special Report No. 212: This 2009 report from the State Geologist evaluated the aggregate potential of the 500-acre First Industrial Realty Trust Day Street site based on geologic and materials testing data provided by the petitioner. In response, the State Geologist reclassified the site, a 500-acre portion of Steele Peak 7.5-minute Quadrangle in the Perris region of Riverside County, from MRZ-3 to MRZ-2 for PCC-grade aggregate. See Figure 4.14.2 for changes.

State "Regional Significance" Designations: Per Special Report No. 198, in late 2007 the SMGB directed its Minerals and Geologic Resources Committee to commence formal designation consideration for the roughly 5,950 acres newly identified as Sectors of "regionally significant construction aggregate resources" within the Palm Springs Production-Consumption Region. In 2010, the SMGB moved to adopt this designation for the area and, as of May 2011, California State rulemaking is pending to codify the change. Since it is reasonably foreseeable that the SMGB will eventually complete the designation process for these areas, this EIR's analyses treat these sites as if already designated.

4.14.3 Policies and Regulations Addressing Mineral Resources

A. State and Federal Regulations

1. Surface Mining and Reclamation Act of 1975

The State of California has recognized that mineral resources are essential to the needs of society and the economic well-being of the state. In 1975, the State Legislature passed the Surface Mining and Reclamation Act (SMARA), Public Resources Code (PRC) Section 2710, *et seq.* The intent of SMARA is to promote production and conservation of mineral resources, minimize the environmental effects of mining and ensure mined lands are reclaimed to conditions suitable for alternative uses. Reclaiming land for other uses once mining operations are completed is important for the general health, safety and welfare of the community. Under SMARA, permits are

required for all mining activities commencing operation on or after January 1, 1976. In addition, all new and existing mining operations are required to file a reclamation plan with the appropriate jurisdiction (such as the County of Riverside) to address how the land would be brought back to a productive status once mining operations cease. The County of Riverside has been given the authority to permit or restrict mining operations within the county, adhering to the SMARA legislation. Under this authority, Riverside County has set forth regulations for mineral extraction and reclamation within unincorporated Riverside County via Ordinance No. 555 (Implementing SMARA in Riverside County).

SMARA also requires every lead agency, such as the County of Riverside, within which a mineral resource's economic value has been classified by the State Geologist or has been designated as having regional economic significance by the SMGB, to establish Mineral Resource Management Policies (MRMPs) for the mineral resource in its General Plan. Riverside County's General Plan policies, described below, fulfill this regulatory requirement.

Under current SMARA statutes (PRC Section 2763), prior to permitting a use that would threaten the potential to extract minerals in an area designated by the SMGB as having mineral resources of regional or statewide significance, the County of Riverside must prepare a statement specifying its reasons for permitting the proposed use. In it, the County of Riverside must consider its MRMPs, balance the mineral values against alternative land uses and consider the importance of the minerals to their market region as a whole and not just their importance to the county area. This process is designed to ensure that decision-makers weigh the economic and environmental value of non-renewable mineral resources when determining whether or not to protect existing mineral resources.

B. Riverside County Regulations

The following policies are intended to ensure the conservation of mineral resources in Riverside County:

Ordinance No. 555 – Implementing SMARA: This ordinance addresses the importance of mineral extraction to the economic well-being of Riverside County. It regulates all surface mining operations in the unincorporated portions of Riverside County, as authorized by SMARA, to ensure that:

- The production and conservation of minerals is encouraged while considering and balancing values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment. And, at the same time, eliminating or minimizing the residual hazards to public health and safety.
- The adverse effects of surface mining operations are prevented or minimized and that mined lands are reclaimed to a useable condition readily adaptable for alternative land use.
- The reclamation of mined lands is carried out in a way that permits the continued mining of minerals.

C. Existing Riverside County General Plan Policies

The following existing General Plan polices address effects related to mineral resources:

1. Land Use (LU) Element

Policy LU *27.1* (Previously 21.1): Require that surface mining activities and lands containing mineral deposits of statewide or of regional significance comply with Riverside County ordinances and SMARA.

Policy LU *27.2* (Previously 21.2): Protect lands designated as Open Space-Mineral Resource from encroachment of incompatible land uses through buffer zones or visual screening.

Policy LU *27.3* (Previously 21.3): Protect road access to mining activities and prevent or mitigate traffic conflicts with surrounding properties.

Policy LU *27.4* (Previously 21.4): Require the recycling of mineral extraction sites to open space, recreational or other uses that are compatible with the surrounding land uses.

Policy LU *27.5* (Previously 21.5): Require an approved reuse plan prior to the issuing of a permit to operate an extraction operation.

2. Multipurpose Open Space (OS) Element

Policy OS 14.1: Require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and County Development Code provisions.

Policy OS 14.2: Restrict incompatible land uses within the impact area of existing or potential surface mining areas.

Policy OS 14.6: Accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.

D. Proposed New or Revised County General Plan Policies

GPA No. 960 includes the following proposed new and revised policies related to mineral resources:

1. Land Use (LU) Element

NEW **Policy LU 9.6:** *If any area is classified by the State Geologist as an area that contains mineral deposits and is of regional or statewide significance, and the County either has designated that area in its general plan as having important minerals to be protected pursuant to subdivision (a) of section 2761 of the Surface Mining and Reclamation Act, or has otherwise not yet acted pursuant to subdivision (a), then prior to permitting a use which would threaten the potential to extract minerals in that area, the County shall prepare, in conjunction with its project CEQA documentation, a statement specifying its reason for permitting the proposed use, and shall forward a copy to the State Geologist and the State Mining and Geology Board for review.*

NEW **Policy LU 9.7:** *Protect lands designated by the State Mining and Geology Board as being of regional or statewide significance from encroachment of incompatible land uses, such as high-density residential, low-density residential with high values, sensitive public facilities, institutions (e.g., schools, hospitals), etc., by requiring incorporation of buffer zones or visual screening into the incompatible land use.*

2. Multipurpose Open Space (OS) Element

Policy OS 14.3: *Prohibit* ~~Restrict~~ land uses incompatible with mineral resource recovery within areas designated Open Space-Mineral Resources *and within areas designated by the State Mining and Geology Board as being of regional or statewide significance.*

Policy OS 14.4: *The County Geologist shall* impose conditions as necessary on *proposed* mining operations *projects* to minimize or eliminate the potential adverse impact of mining operations on surrounding properties and environmental resources.

Policy OS 14.5: Require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours and air quality. *The same standards shall apply to non-mining land uses within or adjacent to areas classified by the State Geologist as MRZ-2a.*

4.14.4 Thresholds of Significance for Mineral Resources

The project would result in a significant impact on mineral resources if it would cause:

A. Loss of the availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

B. Loss of availability of a known mineral resource that would be of value to the region and the residents of the State of California.

4.14.5 Effect of GPA No. 960 on the General Plan and on Mineral Resources

GPA No. 960 includes revision of General Plan Figure OS-5 (Mineral Resources) to ensure that the General Plan reflects the current level of information regarding mineral resources issued by the State Geologist and SMGB. This proposed figure (equivalent to Figure 4.14.1, herein) encompasses the changes indicated in Figures 4.14.2 and 4.14.3. The relationship of this change to the project's environmental baseline is discussed in Section 4.14.2.

As indicated in the table below, GPA No. 960 has the potential to adversely affect up to 23 acres of lands designated as regionally significant by the SMGB. In total, up to 340 acres of lands classified by the State Geologist as MRZ-2 (presence of significant mineral resources known or inferred) may also be adversely affected. The proposed changes would also include up to roughly 12,000 acres of lands for which the significance of known mineral resources is undetermined (MRZ-3) and 3,800 acres for which the presence of important mineral resources has not been determined (MRZ-4 and "unstudied" areas). Where no information is available (i.e., MRZ-3 and MRZ-4 areas), no impacts to "known mineral resources" would occur. Additional study would be necessary to determine if any significant mineral resources exist in such areas at the time implementing project is proposed. Such additional study is typically required when the Riverside County Geologist determines it is needed on a case-by-case basis.

The 23-acre area of adopted "Regional Significance" lies within the Santa Ana River, north of Mount Rubidoux, and is proposed for land use designation change from Estate Density Residential (EDR) to Public Facilities (PF). This area is located within Sector E-24, which encompasses approximately 114 acres designated by the State of California as being regionally significant aggregate resources. The vacant site is proposed for PF because it is Riverside County-owned land adjacent to Flabob Airport, and the designation is necessary to ensure airport safety. No specific uses are proposed for the land, and the mineral resources onsite would not be precluded.

Additionally, the site is surrounded to the northeast, north and west by extensive urban and suburban development, mainly medium-high and high-density residential. These existing residential uses greatly reduce the site's potential for future mineral extraction.

The 67 acres of MRZ-2b affected by the project are located in an area newly classified within the Palm Springs Production-Consumption Region in the North Indio Hills, north of Dillon Road. In this area, a number of parcels (Area C2-24) are proposed to change from OS-CH to Rural Residential because they have been or will be sold off by the federal Bureau of Land Management. Presently this area is sparsely developed with single-family residences on large lots, generally of 5 acres or larger. There are no active mines in the immediate vicinity. Designating these 67 acres as Rural Residential would serve to preclude any future mineral extraction from the sites, as commercial extraction of mineral resources is not allowed under the Rural Residential designation. However, the area is not necessary for mineral extractions. Also, the large lot size (5-acre minimum) standard would enable onsite buffering from any future mining activities in the vicinity, thus limiting potential encroachment effects.

Table 4.14-A: Changes Affecting State Mineral Resource Areas

State Mineral Resource Classification / Designation	Total Within Riverside County[1]	Areas Affected by Proposed GPA No. 960
Classification Category	**ACRES**	**ACRES**
MRZ-1 ("Little or no mineral deposits")	83,270	<1
MRZ-2 [2] ("Known or Inferred Significant" mineral deposits)	41, 730	250
MRZ-2a [3] (Mineral deposits of "Prime Importance")	22,110	0
MRZ-2b (Mineral deposits "Potentially Suitable" for MRZ-2a listing)	7,430	67
MRZ-3 ("Significance Undetermined," requires further evaluation)	1,336,720	12,040
MRZ-4 ("Unstudied" or not enough information to determine)	1,751,890	3,810
Sectors of "Regional Significance" (Designations by State) [3]		
SMGB Adopted Designation	11,850	23
SMGB Proposed for Designation [4]	6,370	0
TOTAL	**3,261,380**	**16,1880**

Footnotes:
1. Totals over 100 acres rounded to nearest 10 after aggregation.
2. This category of MRZ-2 encompasses all areas not categorized as MRZ-2a, MRZ-2b or Regionally Significant.
3. Though technically a sub-set of MRZ-2a, Sectors are listed separately under "SMGB Adopted" and "SMGB Proposed."
4. New Sectors within the Palm Springs Production-Consumption Region were approved by the SMGB in October 2010 for official designation as "regionally significant" and, as of May 2011, are pending rulemaking to codify the change.

Source: Riverside County GIS Dept., spatial analysis of project data, 2010. California Geological Survey Special Report (see text). State Mining & Geology Board SMARA Designation Reports (see text).

Lastly, of the roughly 250 acres of MRZ-2 lands proposed for changes under GPA No. 960, none would affect any areas adjacent to existing mineral resource extraction activities. In three instances, small areas of MRZ-2 proposed for Open Space-Conservation Habitat (OS-CH) land use designation for lands acquired are on biological conservation. Although extant mineral resources would be conserved in place on such sites, the OS-CH designation is generally not compatible with mineral extraction. For the affected MRZ-2 along the Santa Ana River, proposed changes (associated with Flabob ALUP-triggered revisions) reflect the urbanizing nature of the area and no active mining sites would be affected. Also in that area, a roughly 20-acre site (Area C3-2) is proposed to become Medium-High Density Residential (MHDR) with a closed landfill overlay. However, the prior use of the site as a sanitary landfill makes it unsuitable for mineral extraction. Thus, no adverse impact would occur.

4.14.6 Mineral Resources - Impacts and Mitigation

A. Would the project result in loss of the availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Impact 4.14.A – Result in the Loss of Availability of Delineated Locally Important Minerals: No. As shown in Figure 4.14.1, the Riverside County General Plan does not contain any "locally important mineral resource recovery sites." GPA No. 960 does not propose to change this. Therefore, the proposed project would not have an effect on this type of resource.

B. Would the project result in loss of availability of a known mineral resource that would be of value to the region and the residents of the State of California?

Impact 4.14.B – Result in the Loss of Availability of Known Mineral Resources: Future development consistent with the land use and policy changes proposed by GPA No. 960 has the potential to result in the loss of availability of known mineral resources that would be of value to the region and the residents of the State of California. Compliance with existing laws, regulatory programs and General Plan policies, as well as proposed new or revised General Plan policies, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.14.B

The land use and related policy changes proposed by GPA No. 960 would alter the potential range of development and intensity ultimately allowed on specific parcels, as described in Section 4.14.5 and Table 4.14-A, where foreseeable. Likewise, where land use changes are proposed on or adjacent to areas of known or inferred significance (MRZ-2 areas), the assignment of incompatible or potentially incompatible land uses could also result in encroachment or preclusion of potentially important mineral resources.

GPA No. 960 changes would result in potential direct future loss of 23 acres of land designated as "regionally significant" by the SMGB. As explained in Section 4.14.5, however, this acreage is not suitable for future mining activities due to its location amidst dense residential development. Thus, the site may be characterized as no longer meeting California State's definition as "regionally significant." For this reason, the loss does not represent a significant adverse impact on the availability of regionally important mineral resources. The future development accommodated by the project would also result in the preclusion of future mining potential on approximately 320 acres of MRZ-2 land as a result of the generally incompatible new land use designations proposed. Measures that minimize the effects of this loss are described below.

Although not representing known mineral resources, the project would also have the potential to affect mineral availability on previously unstudied lands, such as MRZ-3 or MRZ-4, for which the potential for economically viable mineral resources might exist. Analysis presented in Section 4.14.5 indicates that up to 15,844 acres of MRZ-3 and MRZ-4 lands could be affected by future development accommodated by the proposed project. Since the presence and extent of important mineral resources has not been established for these areas, these effects do not represent impacts to any "known mineral resources." Additional study would be necessary to determine if any significant mineral resources exist in such areas at the time implementing project is proposed. Such additional study is typically required when the Riverside County Geologist determines it is needed on a case-by-case basis.

The project area also includes a number of areas in which significant mineral resources are unlikely to be affected. Specifically, areas of infill within existing urban areas (totaling roughly 1,100 acres) would, by definition, not qualify for MRZ-2 status. In addition, SMGB standards for mineral resource designation (as discussed in Special Report No. 198) state that deposits of less than one million tons are below the current threshold value criteria for construction aggregate. Due to widespread urbanization of western Riverside County, it is also less likely suitable mineral resources would be available in areas of sufficient size and remoteness to be economically viable for mineral extraction.

Within the easternmost third of Riverside County, there are many areas which, even if they were found to qualify as MRZ-2, could be developed without adversely affecting the total availability of economically viable mineral resources in the region since such resources (particularly sand and gravel) occur in large volumes in Riverside County's eastern desert region. In Special Report No. 198 (2007) for the Palm Springs Production-Consumption Region, the California Geological Survey indicated that alternative aggregate sources do exist outside of the Palm Springs P-C Region within the desert to the east, San Gorgonio River to the west, the Twenty-nine Palms area to the north and Imperial Valley to the south. Based on these factors, proposed future development accommodated by GPA No. 960 in eastern Riverside County would not result in significant mineral resource losses.

Overall, because of the urbanizing nature of most of western Riverside County and the wide-spread availability of potential aggregate resources in eastern Riverside County, project-related impacts to MRZ-3 lands would be less than significant. Nevertheless, measures designed to determine potential suitability of these areas for economically viable future mineral resource extraction would be necessary prior to approval of any land-disturbing or encroaching uses. Policies to avoid or minimize these impacts are included in part of GPA No. 960, as described below.

Indirect impacts could also occur where MRZ-2 lands are encroached upon by incompatible uses, particularly residences and other sensitive uses, and where development lies adjacent to MRZ-2 sites otherwise suitable for mining. To avoid or minimize this impact, this EIR includes several measures to ensure that no future development arising from the changes in GPA No. 960 causes encroachment on significant mineral resources. See proposed General Plan Policies LU 9.6 and 9.7, in particular.

Lastly, the project would have a significant adverse impact on availability of important mineral resources if it contributes incrementally to a cumulative loss of lands with mineral resources necessary to meet the region's projected demand. As shown in Table 4.14-A, however, the MRZ-2 lands affected by GPA No. 960 land use changes would occur incrementally over 50-plus years and are insignificant compared to the total resources available. As such, their loss would not rise to the level of cumulatively significant. In addition, the policies described below would ensure conservation of the mineral resources necessary to meet future demand.

2. Regulatory Compliance for Impact 4.14.B

As explained below, compliance with the following laws, regulatory programs, as well as existing and proposed General Plan policies, would lessen significant impacts to known mineral resources as a result of GPA No. 960.

a. Compliance with Federal, State and County Regulations

All future development of mineral resources within unincorporated Riverside County must conform to the requirements and standards of a Surface Mining Permit issued by the County of Riverside pursuant to SMARA and Ordinance No. 555 prior to start of operations. This permit process ensures that measures necessary to avoid or minimize significant environmental effects are implemented for all phases of an approved project, including

construction and development, operations and reclamation. They also serve to help protect any adjacent uses in the vicinity from adverse incompatibility effects.

b. Compliance with Existing General Plan Policies

The General Plan contains the following policies that address potential impacts to mineral resources, as well as compatibility issues between uses. See Section 4.14.3.C for full text of each of these policies.

Policies LU 27.1, 27.4, 27.5 and OS 14.1: These policies ensure existing mines and future mineral extraction activities are carried out in a manner that does not harm the environment or adjacent sensitive uses and resources.

Policies LU 27.2, 27.3 and OS 14.2: These policies prevent loss of potential mineral resources by protecting them from encroachment or preclusion by incompatible uses.

c. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to mineral resources. See Section 4.14.3.C for full text of each of these policies.

Policies LU 9.6 and 9.7: These policies ensure mineral resource conservation through various means, including requiring determination of an area's mineral resource potential prior to permitting development to ensure previously unknown resources are not lost; requiring consideration of the site's mineral resource value against its development value as a non-mining use; and restricting land uses incompatible with mineral recovery in certain areas.

Policies OS 14.3, 14.4 and 14.5: These policies prevent loss of potential mineral resources by protecting them from encroachment or preclusion by incompatible uses through requirements for buffer zones, screening, etc. They also ensure that existing mines and future mineral extraction activities are carried out in a manner that does not harm the environment or adjacent sensitive uses and resources.

3. Significance of Impact 4.14.B After Mitigation

With the implementation of the above existing regulations, existing and proposed General Plan policies, GPA No. 960 would have a less than significant impact on known mineral resources, including mineral resource availability.

4.14.7 Mineral Resources - Level of Significance After Mitigation

Implementation of and compliance with the above regulations and Riverside County General Plan policies would ensure that significant impacts to known mineral resources of regional or statewide significance are either avoided or minimized to less than significant. The revision of General Plan Figure OS-5 and the proposed associated policies ensure that County of Riverside decisions comply with SMARA and are based on appropriate current information. Compliance with existing laws and policies, as well as the proposed new and revised General Plan policies discussed herein, would ensure that significant mineral resources are appropriately identified and protected. Lastly, these General Plan policies ensure that environmental impacts of existing and future mining activities are minimized and that conflicts between mining and non-mining land uses are also minimized or

avoided. Together they ensure that any significant adverse impacts to mineral resources resulting from future implementation of GPA No. 960 would be mitigated to below the level of significance.

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Section 4.15

Noise

Section 4.15 Noise

4.15.1 Introduction and Background

This section evaluates the potential for the proposed project, General Plan Amendment No. 960 (GPA No. 960), to affect or be affected by noise and vibration levels within unincorporated Riverside County. This includes assessing the potential for exposure of Riverside County's population to new noise or vibration sources introduced as a result of the project, as well as the potential for increased or new populations near existing or new noise and vibration sources. A variety of noise and vibration sources within Riverside County are assessed, including vehicular traffic on roadways and highways, as well as aircraft, railway and stationary sources. Traffic is probably the most pervasive noise source affecting most communities and, since GPA No. 960 includes revisions to the General Plan roadway network throughout Riverside County, the scope of this section is similarly countywide.

Information used to prepare this section is based on the noise study prepared by LSA for this project. The study, entitled "Noise Measurement and Analysis Services for Riverside County General Plan Amendment No. 960," and dated March 2011, is included in this EIR as Appendix EIR-7. The study includes ambient noise measurements of various locations throughout unincorporated Riverside County taken during November 2010, as well as noise modeling of roadway noise levels for a variety of locations and times. The methodologies and models used in the study include the Federal Transit Administration's "Transit Noise and Vibration Impact Assessment" (FTA-VA-90-10003-06, May 2006) for rail and mass transit noise and vibration sources and Highway Traffic Noise Prediction Model (FHWA RD-77-108, 1977) for future roadway noise calculations. The analyses presented herein address noise issues at the programmatic level by examining the short-term and long-term impacts of the project on sensitive uses and by evaluating the effectiveness of available regulatory and programmatic mitigation.

A. Characteristics of Sound

Sound and noise have two important aspects. First, the physical: sound is generated when a mechanical wave results from the oscillation of pressure transmitted through a solid, liquid or gas. Second, the biological: when sound is perceived by the ear, it becomes sensory information affecting the entity hearing it. Thus, 'noise' can be defined as unwanted sound; any sound that may produce physiological or psychological damage or interfere with communication, work, rest, recreation or sleep.

As a mechanical wave, sound can be characterized by its frequency, wavelength, amplitude (wave height), intensity and pressure, as well as speed and direction. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments.

Physiologically, sound is 'heard' when ears, or other sense organs, detect waves within the appropriate range of frequency (that is, pitch) and loudness. Pitch is measured by the number of complete vibrations (cycles per second, or Hertz) the sound wave makes. The higher the frequency of the sound wave, the higher the pitch of tone that is heard. The average adult ear can hear sounds pitched between 20 and 16,000 Hertz (Hz). Sounds below 20 Hz may be felt as a vibration. Sounds above 16,000 Hz may be heard by other species (see for example, a dog whistle). Loudness is the strength of a sound and is measured as the amplitude of the sound wave. In humans, loudness is determined by the intensity of the sound waves combined with the reception characteristics of the ear. In physiological terms, pitch changes are commonly perceived as an annoyance, while loudness can affect one's ability to hear.

B. Measurement of Sound

In its simplest form, sound can be thought of as a wave traveling outward spherically from its generation source, which would be at the center of the sphere. Because energy is expended as the wave travels away, sound dissipates exponentially with distance from the noise source. Sound, as heard by humans, is commonly described in terms of the decibel (dB), a unit derived from *bel* in honor of telecommunications pioneer Alexander Graham Bell, back in the early days of modern telephony. The decibel is a logarithmic unit of ratio used in acoustics to describe the effective sound pressure of a sound relative to a reference value. For example, in modeling human hearing response, the commonly used 'zero' reference is relative to the threshold of human hearing at 1 kiloHertz (kHz). This is a sound level roughly akin to the sound of a mosquito flying 10 feet away.

Because of its logarithm scale, in energy terms, 10 decibels are 10 times more intense than 1 decibel, while 20 decibels are 100 times more intense. With 30 dB being 1,000 times more intense than 1 dB, 30 dB represents 1,000 times as much acoustic energy as one decibel. Accordingly, a sound as soft as human breathing is about 10 times greater than 0 dB. In this way, the decibel system of measuring sound provided gives a rough correlation between the physical intensity of sound and its perceived loudness to the human ear. A change in power ratio by a factor of 10 is a 10 dB change; however, a change by a factor of two is approximately a 3 dB change. A 10-decibel increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. A 3 dB change is commonly considered the point at which noise changes are perceptible to human ears. Ambient sounds, those common to the human environment, generally range from 30 dBA (very quiet) to 100 dBA (very loud).

A sound's decibel level decreases as the distance from that source increases. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a linear source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard (reflective) site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

Since the human ear does not have a flat spectral response, sound pressures are often frequency weighted so that the measured level matches the perceived level more closely. The International Electrotechnical Commission has defined several weighting schemes. When measured on the A-weighted scale, sound intensity is corrected for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. A-weighted sound pressure levels are reported in 'dBA,' that is A-weighted decibels.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans must also account for the annoying effects of sound. An equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human

communities in California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the Day-Night Average Level (L_{dn}) based on A-weighted decibels (dBA). CNEL is a measure for time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 pm to 10:00 pm (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 pm to 7:00 am (defined as sleeping hours, when a given noise would have more impact due to the quieter environments). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. But, it is important to note that CNEL does not represent the actual sound level heard at any particular time, but rather the total sound exposure over 24 hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise. In addition to L_{max}, for noise ordinance enforcement purposes, also expressed in L, percentile noise levels are often used. For example, the L_{10} noise level represents the noise level exceeded 10% of the time during a stated period, that is, the loudest 10%. The L_{50} noise level represents the median (50%) noise level where half the time the noise level exceeds this level. The L_{90} noise level represents the noise level exceeded 90% of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} would normally be approximately the same.

C. Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness and/or loss of equilibrium.

D. Ambient Noise and Noise Abatement

Ambient noise is the general sound level present in an environment, inclusive of all sounds, at a given point in time. High levels of background, or ambient, noise can be a problem if loud enough. This problem is generally more widespread in concentrated urban areas, rather than the less-developed outlying areas. Conversely, specifically because of its greater quiet, rural regions can be more readily disturbed by excess noises. To summarize, see Table 4.15-A (Definitions of Acoustical Terms) for acoustical definitions used herein and Table 4.15-B (Common Sound Levels and Their Noise Sources) for sound levels of commonly encountered noise sources.

Three basic mechanisms are effective at reducing excessive noise exposure: 1) reduce the strength of the noise at the source; 2) increase the distance between the source and the receiver; and 3) place an obstruction between the noise source and the receiver. Depending on the location of sensitive land uses in relation to noise generating sources, the relocation of sensitive land uses away from freeways or major streets is not practical or feasible. In these instances, a noise wall is often the remaining practical solution. A properly sited wall can reduce noise levels by almost 10 dB. A decrease of 10 dB is perceived by people to be about one-half the loudness as measured

before the decrease. Another method of obstructing noise for residential or commercial buildings involves the use of design features, site planning or building materials to protect the users of buildings within the interior of the building. Features such as dense landscaping and the use of double-paned windows are two examples.

E. Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature, as in explosions. Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity or acceleration. Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. It is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings. PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. The response of the human body to vibration relates well to average vibration amplitude; therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity. Similar to airborne sound, vibration velocity can be expressed in decibel notation as vibration decibels (VdB). The logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration.

Background vibration levels in most inhabited areas are usually 50 VdB or lower, well below the threshold of perception (which is typically about 65 VdB). In most cases, when environmental vibration is perceptible, people are in their homes, workplaces, etc., and the vibration source is in the same building (i.e., operation of heating, ventilation and air-conditioning [HVAC] equipment, movement of other occupants, slamming of doors, etc.). Outdoor sources most commonly responsible for producing perceptible vibration are heavy construction equipment, steel-wheeled trains and motor vehicle traffic on rough roads; if roadways are smooth, the vibration from traffic is rarely perceptible. The range typically encountered is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is identified in Table 4.15-C (Human Responses to Groundborne Vibration).

Table 4.15-A: Definitions of Acoustical Terms

Term	Definition
Decibel (dB)	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency (Hz)	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level (dBA)	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
Percentile-Exceeded Sound Level (L_{02}, L_{08}, L_{50}, L_{90})	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level for the given percentage of a specified time period (i.e., 2%, 8%, 50%, 90%). Thus, as an example, the L_{10} is the sound level exceeded 10% of the time; L_{90} is the sound level exceeded 90% of the time.
Equivalent Continuous Noise Level (L_{eq})	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level (CNEL)	The 24-hour A-weighted average sound level from midnight to midnight, determined after the addition of 5 decibels to sound levels occurring in the evening between 7:00 pm and 10:00 pm and after the addition of 10 decibels to sound levels occurring between 10:00 pm and 7:00 am at night.

Term	Definition
Day/Night Noise Level (L_{dn})	The 24-hour A-weighted average sound level from midnight to midnight, determined after the addition of 10 decibels to sound levels occurring between 10:00 pm and 7:00 am at night.
Maximum and Minimum Sound Levels (L_{max}, L_{imn})	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise level associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far, with no particular sound dominant.
Intrusive	Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence as well as its tonal or informational content and the prevailing ambient noise level.

Source: Handbook of Acoustical Measurement and Noise Control, 3rd Ed., 1991. As included as Table A in Noise Measurements and Analyses for GPA No. 960, March 2011, by LSA Associates, Inc. (See Appendix EIR-7 for full study.)

Table 4.15-B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels (dBA)	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of hearing
Silence	0	Very Faint	

Source: LSA Associates, Inc., Noise Measurements and Analyses for GPA No. 960, Table B, March 2011.
(See Appendix EIR-7 for full study.)

Table 4.15-C: Human Responses to Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: Federal Transit Administration, 1995.

4.15.2 Existing Environmental Setting - Noise

Pursuant to CEQA, the description of the physical environmental conditions provided in this EIR is as they generally existed at the time of the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting constitutes the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant. Because of the countywide scope and nature

of this project and its programmatic EIR, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used and a discussion of how it is or is not expected to differ from the existing physical conditions provided. For this section, ambient noise monitoring data was collected in November 2010. The use of 2010 data provides a recent and reasonable snapshot of existing noise conditions within Riverside County.

A. Ambient Noise Monitoring

Ambient noise measurements provide a snapshot of the existing noise environment for a given area and may be done in both short- and long-term locations. Surveys of the existing noise environment were conducted on November 2, 3, 4, 5, 15, 16 and 18, 2010 (when traffic was free-flowing). The dates on which long-term and short-term measurements were made reflect typical traffic conditions throughout the year because there were no holidays on any of the dates. The specific locations for short-term and long-term noise measurements were selected to represent areas of growth across Riverside County. The purpose of the noise monitoring was to document the existing noise environment and capture the noise levels associated with typical daily operations and activities in the unincorporated Riverside County area.

Short-term noise measurements were taken over 15-minute periods for a total of 29 locations as identified in Table 4.15-D (Short-Term Ambient Noise Monitoring Results) and illustrated in Figure 4.15.1 (Short-Term and Long-Term Noise Monitoring Locations Map). The measured short-term noise level ranged from 44.3 to 74.8 dBA L_{eq}.

Long-term noise levels were taken at a total of eight locations, as identified in Table 4.15-E (Long-Term Ambient Noise Locations) and also illustrated in Figure 4.15.1, selected to typify the normal sound environments affecting Riverside County. These eight long-term measurement sites were selected to capture the diurnal noise patterns throughout the full day/night cycle at these locations. At each location, a series of 24 sequential one-hour measurements were made and a range of data collected. All measurement locations had direct lines-of-sight to traffic on existing adjacent roadways. The resultant data is summarized in Table 4.15-F (Long-Term Ambient Noise Monitoring Results). The full data set is included in the noise study (see Appendix EIR-7). Because airport surroundings are usually covered by the airport noise contour maps, they are not included in the noise measurement areas. The figure shows that most of the growth has occurred in the western region of the county. In general, vehicular traffic is the dominant noise source in unincorporated Riverside County.

Land uses within Riverside County include a range of residential, commercial, institutional, industrial, recreational, agricultural and open space areas. In general, vehicular traffic is the dominant noise source in the unincorporated Riverside County area. Other noise sources which contributed to the ambient noise, included: car alarms, engine startups, car doors shutting, vehicle reverse beeping, cars braking and honking, operation of lawn mowers, weed whackers and dust blowers, people conversing and playing, music, shopping carts rattling, dogs barking, construction activity, birds chirping, whistles blowing, school bells ringing, airplane and helicopter overflights, ambulance sirens, children playing at playgrounds, air conditioning units running, chain-link fences clanking and leaves and vegetation rustling in the wind. Significant noise also occurs from airplane traffic, railroads and various stationary sources as described below. Sensitive noise receptors typically include residences, schools, child-care centers, hospitals, long-term health care facilities, convalescent centers and retirement homes. See Table 4.15-D for results of short-term (15-minute interval) ambient noise monitoring and Table 4.15-F for long-term (24-hour interval) ambient noise monitoring.

Table 4.15-D: Short-Term Ambient Noise Monitoring Results

ID	Location	Start Time	L_{eq} (dBA)	Noise Sources	Remarks
1	20 feet (ft) from street, on SW corner of Riverside Dr and Wineville Ave.	3:21 pm	73.2	Traffic on SR-60, I-15, Riverside Dr & Wineville Ave.	Intersection is a four-way controlled stop. Land uses all industrial.
2	30 ft from the street, on NW corner of Etiwanda Ave and Cantu Galleano Ranch Rd.	2:41 pm	67.4	Traffic on Etiwanda Ave and Cantu Galleano Ranch Rd.	Four-way signalized intersection. Land use is light industry, sports grounds and vacant/open space.
3	5 ft from the street, on SE corner of Jurupa Rd and Troth St.	3:54 pm	69.1	Traffic on Jurupa Rd and Troth St.	Intersection is a four-way controlled stop. All commercial, except residential house on SE corner.
4	10 ft from street, on SW corner of Magnolia Ave and McKinley St.	1:34 pm	70.2	Traffic on McKinley St and Magnolia Ave.	Intersection is signal-controlled; both streets are major streets with heavy traffic in each direction. Surrounding land use is commercial, preschool and residential area.
5	20 ft south of Indiana Ave at bend in street, near intersection of Indiana Ave and Barker Lane.	12:53 pm	58.0	Traffic on Indiana Ave; children playing and talking at nearby residence.	Airplanes flying over the sound meter and train passing screened out airport surroundings are usually covered by noise contour maps. Land use is residential and mountain area.
6	20 ft from the street, on NE corner of Cajalco Rd and Eagle Canyon Rd.	10:43 am	72.5	Cars and heavy trucks traffic on Cajalco Rd and Eagle Canyon Rd.	Three-way intersection with a stop sign for Eagle Cyn. Rd, Cajalco Rd has right-of-way (ROW). Heavy trucks consistently exiting and entering Eagle Canyon Rd. Land use is vacant/open space at intersection; a few residential areas to east.
7	NE corner of Armstrong Rd and 34th St. (5 ft E of 34th St and 75 ft from Armstrong Rd)	4:38 pm	62.8	Traffic on Armstrong/ Valley Rd and 34th St.	Four-way signalized intersection. Land use is residential and vacant/open space.
8	NE corner McAllister St and El Sobrante Rd., 30 ft from street	5:04 pm	68.1	Traffic on McAllister St and El Sobrante Rd.	Three-way intersection with a stop sign for McAllister St; residential to the NW.
9	140 ft west of Via Lakistas, on sidewalk; 3 ft south from Eureka St.	1:34 pm	44.3	Traffic on Eureka St and Via Lakistas.	Intersection is a two-way controlled stop; Via Lakistas has ROW. Land use is residential.
10	20 ft from street, on SE corner of Center St and Mt. Vernon Ave.	5:27 pm	63.7	Traffic on both roads (heavier on Mt Vernon Ave).	Four-way stop intersection. Land use is residential, vacant/open space and agricultural.
11	NW corner of Washington St. and Van Buren Blvd., 20 ft from Washington St.	4:23 pm	65.2	Cars passing on both rds; cars pulling in/out of lot on Washington St near the sound meter.	Four-way signalized intersection; commercial (7-11 Market) on NW corner of intersection.
12	SE corner of Cajalco Rd and El Sobrante Rd., 5 ft from street	3:38 pm	74.8	Traffic on Cajalco Rd and El Sobrante Rd.	Three-way intersection with a signal.
13	Stafford Street, 15 ft S of Ellis Ave; SH-74 to the north	10:10 am	71.7	Traffic on SH-74 and Ellis Ave.	Heavy traffic on SH-74; intersection 250 ft south from Ellis Ave is signal-controlled. Land use is low-density residential or empty space.
14	25 ft from southbound SH–74, near driveway to residential area.	9:40 am	71.0	Traffic on SH-74.	High speed traffic on SH-74. Land use is low-density residential.
15	NW corner of Hansen Ave. and Reservoir Ave., 20 ft S of Ramona Expressway	11:25 am	73.5	Traffic on Ramona Expressway; traffic on Da-vis/Hansen Ave.	Heavy traffic and many heavy trucks on Ramona Expressway. Land use is commercial, sports field and vacant/open space.
16	10 ft east of Olson Ave, near intersect. of McWade Ave and Olson Ave.	4:55 pm	56.5	Traffic on Olson; light traffic on McWade Ave.	Light traffic on Olson Ave and McWade Ave. Children talking and playing outside, a few dogs barking. Land use is residential.
17	Off NW corner of SR-79 (25 ft. east of) and Scott Rd. (150 ft north of)	3:20 pm	71.1	Heavy traffic and high speeds on SR-79; traffic on Scott Rd.	Intersection is signal controlled. Land use is vacant/open space.

ID	Location	Start Time	L_{eq} (dBA)	Noise Sources	Remarks
18	20 ft from south of De Portola Rd (nearby address #34265).	12:55 pm	46.3	Very low traffic and slow speeds on De Portola Rd, community noise, farmer working and talking nearby.	Helicopters flying over the sound meter but screened out during monitoring work. Land use is agriculture.
19	10 ft from street, on NE corner of Cherry Valley Blvd and Beaumont Ave.	12:40 pm	66.3	Traffic on Cherry Valley Blvd and Beaumont Ave.	Intersection is signal-controlled; Moderate traffic levels on Cherry Valley Blvd and Beaumont Ave. Aircraft flying over the sound meter (screened out). More traffic on Beaumont Ave. Land uses are commercial, community center and a school.
20	15 ft from street, on SE corner of Mayberry Ave and Cornell St.	4:20 pm	58.1	Traffic on Cornell St and Mayberry Ave.	Intersection is a two-way controlled stop, Cornell St with the ROW. Low traffic on both roadways. Land use is residential.
21	10 ft south of SR 79 at Radec (junction of SR 79 and Sage Rd).	2:00 pm	69.4	Traffic on SR 79 and Sage Rd.	Heavy traffic on SR 79; low traffic on Sage Rd. Land use is commercial and residential, plus a closed commercial building to the NW.
22	15 ft from street, on NW corner of Broadway Rd and Bonita Ave.	9:53 am	62.0	Traffic on Broadway Rd and Bonita Ave.	Intersection is a two-way controlled stop on Bonita Ave; Broadway Rd has ROW. Residential developments to the SW. Windy conditions.
23*	In front of entrance gate to windmill farm (Green Power), on N corner of Ruppert St and 19th Ave.	4:30 pm	51.7	Windmill noise. Traffic on I-10, 2,000 ft away from the sound meter but faint.	Aircraft flying over the sound meter but screened out. Quiet area. Land uses are office, light industrial and windmill farm.*
24	10 ft from street, on SW corner of Ramon Rd and Desert Moon Dr.	3:45 pm	69.8	Traffic on Ramon Rd and Desert Moon Dr.	Intersection is a two-way controlled stop; Ramon Rd has the ROW. More traffic on Ramon Rd. Land use is residential, commercial and vacant.
25	30 ft from street, on NW corner of Adams St and 42nd Ave.	3:00 pm	65.6	Traffic on Adams St and 42nd Ave.	Intersection is a four-way controlled stop; residential development on three corners. Bermuda Dunes Country Club is located south of 42nd Ave.
26	15 ft south of SH-74, across from Pinyon 30 Fire Station.	12:40 pm (Nov. 5, 2010)	68.1	Traffic on SH-74, faint radio sound, faint people talking.	Posted speed limits on SH-74 are 35 mph but actual speeds appear much higher. Roadway pavement rough.
27	30 ft from street, on NW corner of Hwy 86 and 62nd Ave.	2:00 pm	69.3	Heavy and high-speed traffic on Highway 86 and lower speed traffic on 62nd Ave.	Intersection is a two-way controlled stop; Highway 86 has the ROW. Roadway construction activities occurred approximately 2,000 ft away from the sound meter, but faint noise. Land use is agriculture. Slightly windy.
28	15 ft south from Ragsdale Rd; 150 ft west from Desert Center Rice Rd.	4:35 pm	61.8	Traffic on I-10 (approx. 1,000 ft S of sound meter), low-speed trucks on Ragsdale Rd and parking activities.	Trucks idling in parking lot and moving slowly. Land use is commercial, parking lot and vacant space.
29	20 ft from the street, on the southeast corner of Arrowhead Blvd and 28th Ave.	2:15 pm	63.2	Traffic on 28th St and Arrowhead Blvd, two tractors on Arrowhead and agri. equip. nearby.	Three-way intersection; free flowing traffic on 28th Ave; Arrowhead Blvd has a stop sign. Land use is agriculture.

Key: dBA = A-weighted decibels Leq = equivalent continuous sound level SH = State Highway
* Measurement conducted within the City of Palm Springs because the proposed monitoring location was not available.
Source: LSA Associates, Inc., Noise Measurements and Analyses for GPA No. 960, Table C, March 2011. (See Appendix EIR-7 for full study.)

Table 4.15-E: Long-Term Ambient Noise Locations

ID	Location	Start Time[1]	Noise Sources	Remarks
1	SW corner of Magnolia Ave. and McKinley St., 10 ft from the street and 230 ft. south of Magnolia Ave.	4:00 pm, Nov. 18, 2010	Traffic on McKinley St and on Magnolia Ave.	Intersection is signal controlled. Both streets are major streets with heavy traffic in each direction. Surrounding is commercial, preschool and a residential area away from the intersection.
2	NE corner of Cajalco Rd. and Eagle Canyon Rd, 15 ft from street.	5:00 pm, Nov. 18, 2010	Cars and heavy truck traffic on both roads.	Three-way intersection with stop sign for Eagle Cyn Rd; Cajalco Rd. traffic has right-of-way (ROW). Heavy trucks consistently exiting and entering Eagle Cyn Rd. Surrounding is empty space at intersection and a few residences along E side.
3[2]	30 ft from I-215 N-bound, near Nandina Ave.	6:00 pm, Nov. 16, 2010	Traffic on I-215 fwy and airplanes from March Air Rsrv Base.	Traffic on I-215 dominant noise source. Surrounding land use is military base, commercial and empty/open space.
4	S of Hwy. 74, 15 ft N of Ellis Ave.	4:25 pm, Nov. 16, 2010	Traffic on Hwy. 74 and on Ellis Ave.	Heavy traffic on Hwy 74. Intersection at 250 ft S from Ellis Ave. is signal controlled. Land use is low-density residential and open space (vacant land).
5	Near intersection of McWade Ave and Olson Ave., 15 ft east of Olson Ave.	1:00 pm, Nov. 15, 2010	Traffic on Olson Ave. and light traffic on McWade Ave.	Traffic on Olson and McWade Avenues. Surrounding land use is residential.
6	SE corner of Rancho California and Anza Rds., 15 ft from street.	1:00 pm, Nov. 4, 2010	Traffic on Rancho California Rd and on Anza Rd.	Intersection is a 4-way controlled stop. Heavy traffic on Rancho California Rd. Surrounding land use is farmland.
7	Near 34265 DePortola Rd, 20 ft south of road.	1:00 pm, Nov. 2, 2010	Very low traffic and slow speeds on DePortola Rd.	Quiet rural area. Surrounding land use is farmland.
8	NW corner of Mayberry Ave and Cornell St., 20 ft from street.	2:00 pm, Nov. 15, 2010	Traffic on Cornell St and on Mayberry Ave.	Intersection is 2-way controlled stop, Cornell St. traffic has ROW. Low traffic levels on both roads. Surrounding land use is residential.

Footnotes:
1. Monitoring ran for 24 hours from start time / date indicated and consisted of 24 one-hour samples.
2. This measurement was conducted within the City of Perris because the originally proposed monitoring location was unavailable.

Source: LSA Associates, Inc., Noise Measurements and Analyses for GPA No. 960, Appendix B, March 2011. (See Appendix EIR-7 for full study.)

Table 4.15-F: Long-Term Ambient Noise Monitoring Results

ID	Location[1]	Leq (dB) Readings for am and pm[2,3]												
		12 am	1 am	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	Lmax (dB)
		pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	Lmin (dB)
1	McKinley Street	59.9	58.8	56.8	56.9	56.8	59.2	60.7	59.36	58.5	57.3	58.3	59.7	101.6 (5 pm)
		59.5	61.1	61.3	62.3	67.2	70.6	67.6	66.1	65.5	66.1	63.1	60.4	40.3 (4 am)
2	Cajalco Rd and Eagle Cyn Rd	54.2	54.4	54.8	57.4	61.1	64.2	65.6	67.1	66.5	65.5	64.1	64.8	89.6 (7 pm)
		64.0	65.4	65.5	66.4	66.8	66.3	64.9	63.4	61.8	60.8	59.1	56.9	24.9 (11 pm)
3	1567 Nandina Avenue	68.0	66.5	66.1	67.0	69.3	71.6	73.6	74.3	72.36	70.4	72.2	73.8	98.5 (7 pm)
		73.8	73.2	74.0	74.2	73.9	73.4	73.0	74.0	71.3	70.0	69.1	69.4	38.7 (1 am)
4	23600 W Ellis Avenue [4]	66.7	63.4	64.0	67.9	71.0	73.4	74.4	74.6	73.6	73.8	76.1	73.4	108.2 (10 am)
		73.3	73.6	74.1	75.3	75.1	73.9	72.6	70.8	69.9	70.3	67.8	67.0	37.2 (12 am)
5	26210 Olson Avenue	50.6	46.7	46.0	51.4	52.6	55.1	57.3	57.7	56.6	56.2	55.7	52.9	97.5 (1 pm)
		56.3	63.6	59.6	57.4	63.0	57.2	56.4	53.6	53.7	53.3	54.8	50.6	30.0 (1 and 2 am)
6	34700 Rancho California Rd	58.6	59.7	53.9	56.9	61.6	66.2	70.0	71.4	70.6	72.0	69.5	70.3	104.0 (8 pm)
		73.9	71.5	72.3	74.8	73.1	71.8	71.0	68.7	71.5	65.8	62.6	62.7	43.3 (12 am)
7	34265 De Portola Rd	39.8	40.7	42.1	42.8	47.4	46.9	50.8	45.9	45.8	46.5	50.9	53.2	84.0 (12 pm)
		51.1	48.0	49.5	46.3	48.4	49.0	48.1	44.6	43.0	43.0	41.6	41.8	36.7 (12 and 1 am)
8	26245 Cornell Street	44.9	50.2	40.0	48.3	50.4	54.2	60.4	64.8	58.7	57.9	58.2	59.0	93.0 (7 am)
		58.4	60.7	61.8	63.6	61.1	60.7	59.2	57.5	55.5	57.7	55.0	45.9	35.4 (1 am)

Footnotes:
1. See Table 4.15-E for more information on noise monitoring locations.
2. Data listed in uniform sequence to allow trend comparison; actual monitoring start times and dates varied.
3. A variety of noise readings were taken. See Appendix B to the Noise Study prepared by LSA (included as Appendix EIR-7) for the full data set of readings.
4. Measurements made at 25 minutes past each hour (4:25 pm, 5:25 pm, etc.)

Source: LSA Associates, Inc., Noise Measurements and Analyses for GPA No. 960, Appendix B, March 2011. (See Appendix EIR-7 for full study.)

B. Vehicular Traffic Noise

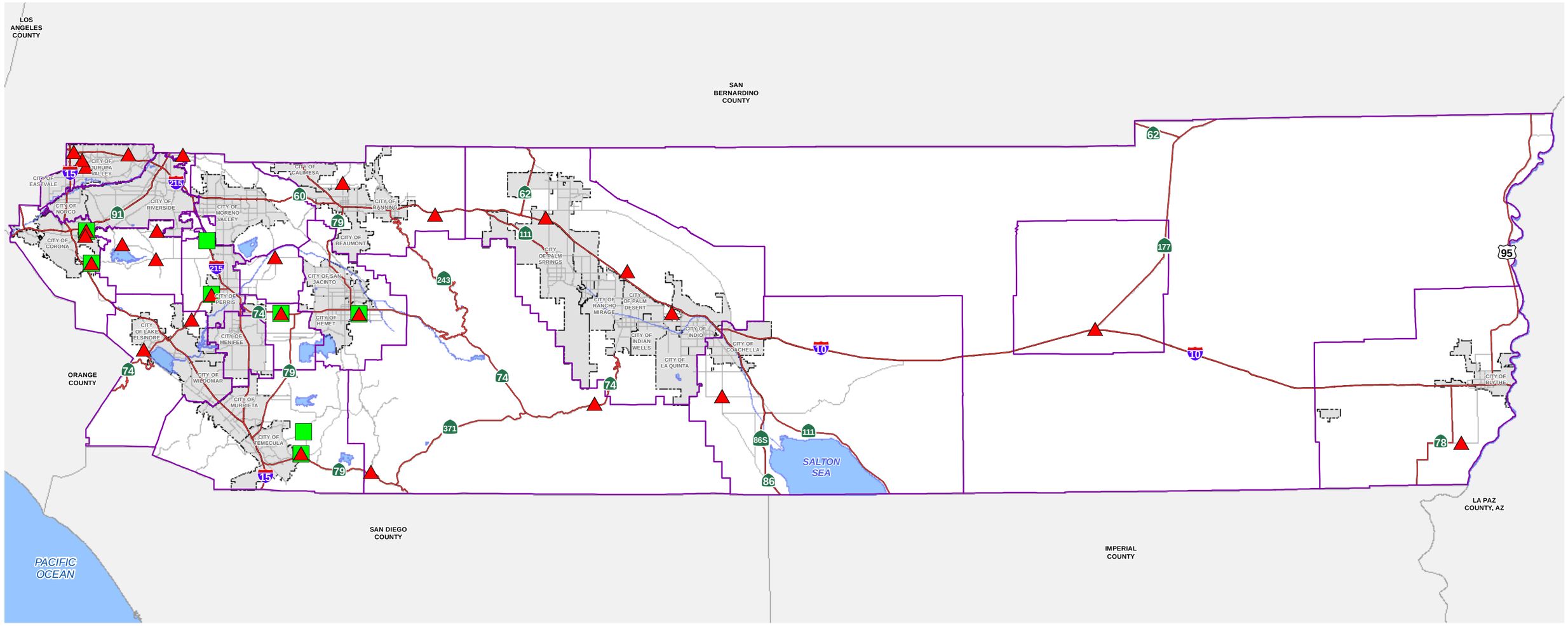
Motor vehicle noise commonly causes sustained noise levels along busy roadways or freeways. Several high-volume freeways run through Riverside County, primarily Interstate 10 (I-10), Interstate 15 (I-15), Interstate 215 (I-215), State Route 60 (SR-60) and State Route 91 (SR-91). Riverside County also has many local roads that experience very high traffic volumes, particularly high truck traffic volumes that contribute to traffic noise and vibration. Many noise-sensitive receptors throughout Riverside County are located along these high-traffic corridors, including older residences, which usually are not protected by sound walls or other barriers; unlike newer residences mostly built within or near incorporated cities. In many cases, newer residences are protected by sound walls or include additional acoustic insulation as protection from noise intrusion because they were built to accommodate the noise increase caused by higher traffic volumes.

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to estimate freeway and highway traffic-related noise levels in unincorporated Riverside County. This model uses a variety of parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening and nighttime hours. Because this EIR is intended to generally document existing traffic noise environment and project future potential traffic noise levels throughout Riverside County, rather than determine specific data and impacts for a single proposed use, such as residential, the traffic noise modeling deviates from the Riverside County Department of Public Health's usual residential traffic noise impact standards.

The average daily traffic (ADT) volumes used for traffic noise modeling are based on results generated from the Riverside County Traffic Analysis Model (RIVTAM). See Appendix EIR-4 for traffic data prepared by the Riverside County Transportation Department, November 2010. The resultant noise levels are weighed and summed over 24-hour periods to determine the L_{dn} value. L_{dn} contours are derived through a series of computerized iterations to isolate the 60, 65 and 70 dBA L_{dn} contours for traffic noise levels. In addition, to facilitate comparisons amongst roadways, a single noise level (L_{dn}) was calculated for each roadway at 50 feet from the centerline of the road's outermost lane. These noise levels represent the worst-case scenarios; that is, they assume no shielding is provided between the traffic and the noise contour locations. Table 4.15-G (Traffic Noise Levels, Base Year (Existing, 2007) Conditions) provides the results of the base year (2007) traffic noise calculations adjacent to representative segments of the freeways and the major roads in unincorporated Riverside County. The base year, 2007, is shown because it is the year for which the "existing" traffic levels were modeled.

Only roadway segments with traffic volumes higher than 6,000 ADT and representative of the subareas covering unincorporated Riverside County were selected for analysis. In some subareas where several ADTs were presented at close range, only the segment with the highest ADT was analyzed. Along roadway segments with traffic volumes less than 6,000 ADT, the 70 and 65 dBA L_{dn} noise contours would be confined within the roadway right-of-way (i.e., within 50 feet of the roadway centerline). Therefore, no modeling of the traffic noise along these roadway segments was provided. It should be noted that the 70 and 65 dBA limits are utilized as the upper thresholds for noise as these are the levels at which commercial and residential uses are conditionally acceptable. Noise levels greater than these limits are unacceptable based on land use noise guidelines implemented by the County of Riverside.

As shown in Table 4.15-G, noise modeling results indicate that traffic noise levels measured at 50 feet from the outermost travel lane for these roadways ranges from a low of 60.4 dBA L_{dn} (along Graeber Street between Cactus Avenue and Meyer Street) to a high of 84.7 dBA L_{dn} (along I-10 between Apache Trail and Field Road).



Data Source: LSA Associates (2011)

Short-Term Monitoring Location

Long-Term Monitoring Location

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.15.1

December 16, 2013

Miles

0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

MONITORING LOCATIONS

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Table 4.15-G: Traffic Noise Levels, Base Year (Existing, 2007) Conditions

Roadway Segment	ADT[1]	Centerline to 70 L_{dn} (feet)	Centerline to 65 L_{dn} (feet)	Centerline to 60 L_{dn} (feet)	L_{dn} (dBA) Reading 50 feet from Outer Lane Centerline[2]
38th Ave between Del Webb Blvd and W city limits of Indio	10,600	< 50	57	121	65.1
42nd Ave between Washington St and Yucca Lane	15,700	< 50	85	180	66.6
54th Ave between Monroe St and Jackson St	10,000	< 50	87	187	67.9
62nd Ave between E city limits of La Quinta and Jackson St	10,400	< 50	78	167	67.2
Agua Mansa Rd between Market St and Wilson St	13,300	< 50	95	204	67.9
Airport Blvd between Van Buren Blvd and Fredrick St	6,200	< 50	51	110	64.4
Archibald Ave between Limonite Ave and N Riverside Co. limits	18,000	69	149	320	71.4
Archibald Ave between River Rd and Chandler St	9,300	< 50	94	203	68.4
Armstrong Ave between Sierra Ave and SH-60	20,800	58	124	266	70.2
Bellegrave Ave between Cantu Galleano Rnch Rd and Marlatt St	14,300	56	119	256	69.9
Bellegrave Ave between Bain St and Van Buren Blvd	10,100	< 50	104	223	69.0
Bellegrave Ave between I-15 and Wineville Ave	12,500	< 50	105	224	68.0
Bob Hope Dr between Ramon Rd and Dinah Shore Dr	15,100	< 50	103	220	67.9
Briggs Rd between Los Alamos Rd and SH-79	7,700	< 50	63	134	65.1
Broadway St between S city limits of Blythe and Seeley Ave	8,500	< 50	< 50	105	63.0
Cactus Ave between Elsworth St and I-215	24,100	57	117	251	68.7
Cajalco Rd between Temescal Canyon Rd and La Sierra Ave	13,800	< 50	75	162	67.0
Cajalco Rd between El Sobrante Rd and Gavilan Rd	14,900	52	110	236	68.8
Cajalco Rd between Patterson Ave and Day St	13,300	< 50	96	205	67.9
Camino Real between Jurupa St and Limonite Ave	10,300	< 50	58	124	65.2
Cantu Galleano Ranch Rd betwn Etiwanda Ave and Van Buren Blvd	20,500	102	217	466	72.8
Center St between Iowa Ave and Mount Vernon Ave	6,700	< 50	58	120	63.9
Citrus St between Cleveland Ave and Summer Ave	8,700	< 50	59	128	65.4
Clay St between Limonite Ave and Van Buren Blvd	14,000	< 50	85	181	66.6
Clinton Keith Rd between w Murrieta city limit and Los Alamos Rd	11,800	< 50	86	184	67.2
Country Village Rd between Granite Hill Dr and Philadelphia St	20,300	68	142	304	70.0
Del Webb Blvd between Washington St and 38th Ave	12,800	< 50	80	169	66.1
Desert Moon Dr between Ramon Rd and Varner Rd	10,300	< 50	69	141	64.4
Dillon Rd between Long Canyon Rd and Bennett Rd	9,100	< 50	88	188	67.9
Domenigoni Pkwy between Warren Rd and Patterson Ave	28,400	139	295	634	74.4
Domenigoni Pkwy between SH-79 and Patterson Ave	27,200	136	289	621	74.2
E Stetson Ave between eastern Hemet city limits and Girard St	12,500	< 50	95	205	68.5
El Sobrante Rd between Cajalco and Mockingbird Canyon Rds	11,600	< 50	77	165	67.1
Ellis Ave between Theda St and Marshall Rd	9,000	< 50	82	175	66.9
Etiwanda Ave between SH-60 and Philadelphia St	33,400	108	227	487	72.6
Etiwanda Ave between Limonite Ave and Holmes Ave	8,400	< 50	57	118	63.7
Felspar Rd between Mission Blvd and Galena St	11,500	< 50	92	198	68.3
Gavilan Rd between Cajalco Rd and Multiview Dr	11,200	< 50	67	145	66.2
Gilman Springs Rd between ramps on SH-79 and on State St	17,900	94	202	435	73.4
Gilman Springs Rd between Jack Rabbit Trail and Bridge St	16,300	84	179	386	72.0
Graeber St between Cactus Ave and Meyer St	8,600	< 50	< 50	66	60.4
Grand Ave between Corydon Rd and Ortega Highway	13,600	< 50	96	206	68.5
Hamner Ave between Limonite Ave and 65th St	15,000	63	123	258	68.1
Hamner Ave between northern Norco city limits and 68th St	8,800	< 50	85	180	66.5
Harrison St between 62nd Ave and 54th Ave	12,300	87	187	403	72.9
Horsethief Canyon Rd between I-15 and Mountain Rd	10,600	< 50	57	123	65.2
I-10 between Apache Trail and Fields Rd	132,800	823	1,770	3,811	84.7
I-10 between SH-111 and Tipton Rd	106,600	774	1,665	3,585	84.6
I-10 between Ramon Rd and Date Palm Dr	112,800	730	1,570	3,379	84.0
I-10 between SH-62 and Tipton Rd	106,800	774	1,666	3,588	84.6
I-10 between Ramon Rd and Monterey Ave	118,200	736	1,582	3,408	84.3

Roadway Segment	ADT[1]	Centerline to 70 L_{dn} (feet)	Centerline to 65 L_{dn} (feet)	Centerline to 60 L_{dn} (feet)	L_{dn} (dBA) Reading 50 feet from Outer Lane Centerline[2]
I-10 between SH-86 and Dillon Rd	25,800	418	899	1,936	82.1
I-10 between Dillon Rd and Box Canyon Rd	25,500	429	922	1,986	81.8
I-10 between Red Cloud Mine Rd and Eagle Mountain Rd	25,500	431	926	1,995	81.8
I-10 between Hayfield Rd and Red Cloud Mine Rd	15,500	417	898	1,933	81.6
I-10 between Box Canyon Rd and Summit Rd	25,500	431	926	1,995	81.8
I-10 between Chuckwalla Valley Rd and Willey Well Rd	24,900	433	932	2,008	81.9
I-10 between Willey Well Rd and Mesa Dr	25,900	434	935	2,013	81.9
I-15 between Mission Blvd and Philadelphia St	191,000	617	1,325	2,853	82.9
I-15 between SH-79 and Rainbow Valley Blvd West	146,700	527	1,130	2,433	81.8
I-215 between Van Buren Blvd and Oleander Ave	139,700	458	984	2,118	81.5
Indian Ave between Dillon Rd and 18th Ave	17,600	69	146	314	70.7
Iowa Ave between Center St and N city limits of Riverside	23,300	80	167	357	70.6
Jurupa Rd between Valley Way and Camino Real	9,000	< 50	58	117	63.2
Knabe Rd between Temescal Canyon Rd and Hunt Rd	15,700	< 50	107	226	67.6
Cleveland Ave between S Riverside city limits and Dufferin Ave	15,700	< 50	99	212	68.1
Limonite Ave between Archibald Ave and Harrison Ave	7,700	< 50	65	140	66.0
Limonite Ave between Hamner Ave and I-15	22,900	73	152	323	70.0
Limonite Ave between Pedley Rd and Clay St	16,600	58	121	258	68.9
Limonite Ave between Pedley Rd and Van Buren Blvd	17,100	77	162	348	70.9
Limonite Ave between Etiwanda Ave and Marlatt St	19,300	61	130	280	70.5
Limonite Ave between Van Buren Blvd and Felspar Rd	25,700	97	203	435	71.9
Limonite Ave between Peralta Place and Camino Real	16,800	57	114	242	68.1
Los Alamos Rd between Briggs Rd and Whitewood Rd	11,200	< 50	70	150	65.9
Los Alamos Rd between E Murrieta city limits and Briggs Rd	11,300	< 50	70	150	66.5
Market St between Aguamansa Rd and Rubidoux Blvd	17,300	57	121	259	69.4
Markham St. between Mockingbird Cyn Rd. and Washington St	8,100	< 50	68	142	65.0
Markham St between Seaton Ave and Day St	9,500	< 50	69	149	66.4
Menifee Rd between Nuevo Rd and Central Ave	6,600	< 50	81	175	67.5
Mission Blvd between Wineville Ave and I-15	10,100	63	132	283	69.5
Mission Blvd between Pedley Rd and Agate St	19,000	70	148	317	70.3
Mockingbird Cyn Rd between Van Buren Blvd and Markham St	19,900	79	164	350	70.5
Mockingbird Cyn Rd between Markham St and Van Buren Blvd	15,500	69	141	301	69.5
Monroe St between 54th Ave and 52nd Ave	20,600	< 50	108	228	67.7
Mountain View Rd between 20th Ave and Varner Rd	11,500	< 50	76	164	67.1
Murrieta Hot Spring Rd between Sky Cyn Dr and Winchester Rd	11,600	< 50	65	137	64.7
Nuevo Rd between Menifee Rd and Lakeview Ave	8,200	< 50	65	141	66.0
Old Elsinore Rd between San Jacinto Ave and Orange Ave	7,200	< 50	61	131	65.6
I-15 between Limonite Ave and 68th St	184,000	631	1,358	2,925	83.9
Palm Dr between northern Cathedral city limits and 20th Ave	29,100	81	171	366	71.2
Pedley Rd between Mission Blvd and SH-60	7,700	< 50	70	151	66.5
Pedley Rd between Limonite Ave and Jurupa Rd	7,100	< 50	61	131	65.6
Perris Blvd between Reche Vista Dr and Sunnymead Rnch Pkwy	6,200	< 50	68	145	65.6
Pinacate Rd between E Menifee city limits and Juniper Flats Rd	27,000	106	226	485	73.0
Ramon Rd between Varner Rd and I-10	15,200	53	109	233	68.2
Pourroy Rd between Thompson Rd and Winchester Rd	9,400	< 50	58	125	65.3
Ramon Rd between Sierra Del Sol and La Canada Way	9,800	< 50	77	160	65.3
Ramon Rd between Bob Hope Dr and I-10	36,600	87	174	369	70.1
Ramon Rd between I-10 and Varner Rd	36,600	85	173	368	70.4
Ramon Rd between Sierra Del Sol and Desert Moon Dr	11,000	< 50	106	228	68.6
Ramona Expressway between E Perris city limits and Davis Rd	13,500	71	153	329	71.6
Ramona Expressway between Davis Rd and Lakeview Ave	13,500	71	153	329	71.6
Reche Vista Dr between Perris Blvd and Reche Canyon Rd	12,300	< 50	61	132	65.6
Redlands Blvd between San Timoteo Cyn Rd and Locust Ave	18,900	71	150	323	70.9

Roadway Segment	ADT[1]	Centerline to 70 L_{dn} (feet)	Centerline to 65 L_{dn} (feet)	Centerline to 60 L_{dn} (feet)	L_{dn} (dBA) Reading 50 feet from Outer Lane Centerline[2]
Rubiduox Blvd between Market St and 24th St	11,100	54	111	236	68.3
Schleisman Rd between Archibald Ave and River Rd	12,500	< 50	82	175	67.5
Sierra Ave between Armstrong Ave and N Riv. County limits	13,000	61	124	263	68.6
Monterey Ave between Ramon Rd and I-10	9,200	< 50	61	131	65.6
SR-111 between Tram Way Rd and I-10	21,000	111	234	502	72.8
SR-195 between Lincoln St and Grapefruit Blvd	13,100	59	118	250	68.3
SR-371 between SH-74 and Mitchell Rd	7,800	< 50	104	225	69.1
SR-60 between Wineville Ave and Mission Blvd	163,600	589	1,267	2,729	83.2
SR-60 between SH-60 and Jack Rabbit Trail	63,600	428	920	1,981	81.8
SR-62 between I-10 and Dillon Rd	18,100	119	253	542	73.3
SR-74 between northern city limits of Lake Elsinore and I-15	28,300	105	225	483	73.0
SR-74 between Theda St and Ethanac Rd	27,100	102	217	465	72.8
SR-74 between SH-371 and Palm Canyon Dr	8,300	53	110	233	68.3
SR-78 between Hobson Way and 18th Ave	10,600	< 50	96	205	67.9
SR-79 between eastern city limits of Murrieta and Pourroy Rd	19,100	110	237	510	73.9
SR-79 between Auld Rd and Hunter Rd	32,200	128	274	588	74.3
SR-79 between Scott Rd and Wickered Rd	20,700	100	216	465	73.8
SR-79 between eastern city limits of Temecula and Anza Rd	13,800	71	152	327	71.5
SR-79 between SH-371 and Sage Rd	8,800	52	111	239	69.5
SR-79 between Domenigoni Pkwy and Patton Ave	19,100	99	212	456	73.7
SR-79 between Gilman Springs Rd and S Beaumont city limits	47,100	152	324	697	75.0
SR-86 between Pierce St and 81st Ave	8,200	78	167	360	72.2
SR-86 between 74th Ave and Pierce St	7,700	77	165	354	71.5
SR-86 between S city limits of Coachella and 66th Ave	37,900	247	531	1,144	78.6
SR-86 between 54th Ave and Airport Blvd	12,800	88	190	409	73.0
SR-86 between I-10 and Dillon Rd	62,200	362	779	1,678	81.1
SR-86 between Grapefruit Blvd and S Coachella city limits	37,900	247	531	1,143	78.2
Seaton Ave between Harvill Ave and Markham St	10,100	< 50	65	131	64.0
I-15 between Temescal Canyon Rd and Indian Truck Trail	150,900	594	1,277	2,750	83.2
I-15 between Weirick Rd and Temescal Canyon Rd	154,100	596	1,283	2,762	83.2
Temescal Canyon Rd between Cajalco Rd and I-15	10,600	< 50	79	169	66.6
Temescal Canyon Rd between I-15 and Lawson Rd	9,300	< 50	54	115	64.1
I-15 between Temescal Canyon Rd and Weirick Rd	154,100	596	1,283	2,762	83.2
US-95 between I-10 and N Riverside County limits	7,200	< 50	105	225	68.5
Van Buren Blvd between Bellegrave Ave and Etiwanda Ave	44,400	192	411	885	76.5
Van Buren Blvd between Mockingbird Cyn Rd and Firethorn Ave	48,000	136	290	624	74.2
Van Buren Blvd between Washington St and Krameria Ave	35,800	116	246	529	73.2
Van Buren Blvd between Limonite Ave and Jurupa Rd	44,600	191	409	880	76.5
Van Buren Blvd between Limonite Ave and Clay St	56,700	210	450	968	77.1
Van Buren Blvd between I-215 and Harmon St	27,000	101	213	457	72.2
Warren Rd between Domenigoni Pkwy and Simpson Rd	11,000	62	132	285	70.6
Warren Rd between W Hemet city limits and W Esplanade Ave	8,600	65	137	294	70.3
Washington St between Van Buren Blvd and Golden St	13,300	< 50	82	176	67.5
Washington St between Del Webb Blvd and Wildcat Dr	14,000	< 50	86	182	66.6
Florida Ave between Winchester Rd and W Hemet city limits	36,500	141	301	648	74.9
Winchester Rd between Florida Ave and California Ave	12,800	80	171	367	71.7

Key: ADT = average daily traffic dBA = A-weighted decibels Ldn = Day-Night Average Level

Footnotes:

1. ADT values rounded up to the nearest 100.
2. Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: LSA Associates, March 2011

C. Railway Noise

Riverside County is traversed by three rail mainlines. The BNSF Transcon is owned by Burlington Northern/ Santa Fe (BNSF). The UP Los Angeles Subdivision (UP LA Sub) and the UP El Paso Line are owned by Union Pacific (UP). The BNSF Transcon is the main artery linking the Los Angeles basin to all midwestern, southwestern and eastern markets on the BNSF rail system. UP LA Sub connects to the Sunset Corridor at Colton in the Los Angeles basin, while the UP El Paso Line is part of the UP Sunset Corridor and extends to El Paso. This route is designated as the primary intermodal line between the Los Angeles basin and eastern markets. The UP LA Sub segment of the mainline connects with the UP El Paso Line via the BNSF Transcon Line between west Riverside and Colton. The UP El Paso Line exits south through Imperial County towards Yuma, Arizona, and the eastern side of the Salton Sea. The BNSF Transcon has a route exiting to the north into San Bernardino County. In 2003, 68 million tons of rail freight passed through Riverside County with less than 5% originating or ending locally. Currently 85 freight trains per day pass through Riverside County according to the Multi-County Goods Movement Action Plan, Riverside County Action Plan (Wilbur Smith Associates, April 30, 2008).

Due to the sensitivity of rail schedules and information, specific railroad operations were not available from the respective railroad operators. In the absence of such information, other rail studies for the area and staff at the Riverside County Transportation Commission were consulted. The Inland Empire Railroad Main Line Study Final Report (Southern California Association of Governments [SCAG], 2005) notes the "frequencies of main-line train operations vary from day to day." Typically, the amount of traffic along the principal railroad lines fluctuates considerably since trains (principally freight) are operated in response to demand and not on the basis of fixed or permanent schedules.

The final report projected the following railroad operations data for the year 2010: UPRR operates 50 daily freight trains in Riverside County and BNSF operates 82 in the Highgrove area (southwest of Corona) of the county. BNSF also operates 82 daily freight trains in the Atwood (West Riverside) area of the county. Metrolink operates 24 daily passenger trains in the Highgrove area of the county and 38 in the Atwood (West Riverside) area. As stated in various reports and confirmed by County of Riverside staff, the average daily speeds of freight and passenger trains are not available from the railroads at this time. The size of the train along with the number of locomotives can cause the train speed to fluctuate. Also, due to security concerns, specific train schedules and rail cargo transportation plans are not available at this time, beyond those published for Metrolink for commuters.

Most of the rail tracks in western Riverside County are continuously welded, as are most railways in the USA built after 1950. On such tracks, rails are welded together via flash-butt welding to form a single rail which can be thousands feet long. Unwelded rails are held together by joints, bars and bolts, which could result in greater noise generation.

There are no engines that are strictly electric; however, some engines are a combination of electric and diesel. Generally, electric engines can deliver varying outputs more efficiently and rapidly than diesel engines. But diesels are most economical at constant engine speeds and tend to make less noise and generate fewer vibrations.

Currently, daily train traffic produces noise that may disrupt activities in proximity to railroad tracks. For instance, trains are required to sound their horns at all at-grade crossings and they may also be required to slow down through residential areas. These types of noise disturbances can interfere with activities conducted on noise-sensitive land uses. However, due to relatively low volumes of train traffic and the isolated locations of the current system of rail lines from noise-sensitive land uses, they do not expose as many people to the intensity of sound as do the airports. Figures 4.15.2, 4.15.3 and 4.15.4 provide typical railroad noise contours.

D. Aircraft Noise

Riverside County is served by seven public use general aviation airports along with a number of smaller airports and air fields. Most of the airports in Riverside County have published airport noise contour maps, as noted below. The figures noted here are for the noise contours that best reflect existing conditions. In some cases, where future plans for an airport call for an expansion in operations or increase in flights, a second "future" noise contour may have been developed. Future noise contours are provided in Section 4.15.5, as cited below. The noise contour maps within these airport land use plans are based on airport operational data and provide a more accurate noise condition than if these areas were measured as part of the short-term noise monitoring. Because airport surroundings are usually covered by the airport noise contour maps, they are not included in the noise measurement areas.

Regarding specific airports, it should be noted that although the Chino Airport is not located in Riverside County, its noise contours affect areas within Riverside County and thus it is included in this section. Conversely, noise contours from the Los Angeles International and Ontario International Airports do not extend to the Riverside County border and therefore they are not included here. Also, Skylark Airport is not included here as it is not a public use airport according to records maintained by the California Department of Transportation (CalTrans), Division of Aeronautics. Permission is required prior to landing any aircraft at this facility. Lastly, although a major source of aircraft activity in western Riverside County, the March Air Reserve Base is also not included here for two reasons. First, the airport and the surrounding lands are addressed under their own master plan issued by the March Joint Powers Authority. As such, these lands are not under the direct jurisdiction of the Riverside County General Plan. Secondly, military operations are subject to different regulations than those discussed for public-use airports here, as it is recognized that matters of national security and safety at times are of greater significance than noise levels.

Banning Municipal Airport: Includes noise contours for 2002/2003 and future (ultimate); last updated in 2004. See Figure 4.15.5 (Banning Municipal Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.23 (Banning Municipal Airport Future Noise Contours) for future contours.

Bermuda Dunes Airport: Includes noise contours for 2003 and future (ultimate, average annual and peak season); last updated in 2004. See Figure 4.15.6 (Bermuda Dunes Airport Existing Noise Contours – Average Annual Day) and Figure 4.15.7 (Bermuda Dunes Airport Existing Noise Contours – Average Peak Season Day) for existing noise contours map and Figure 4.15.24 (Bermuda Dunes Airport Future Noise Contours – Average Annual Day) and Figure 4.15.25 (Bermuda Dunes Airport Future Noise Contours – Average Peak Season Day) for future contours.

Blythe Airport: Includes noise contours for 1999, 2020 and ultimate; last updated in 2004. See Figure 4.15.8 (Blythe Municipal Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.26 (Blythe Municipal Airport Future (2020) Noise Contours) and Figure 4.15.27 (Blythe Municipal Airport Future (Ultimate) Noise Contours) for future contours.

Chiriaco Summit Airport: Includes noise contours for 2025; last updated in 2004. No contour map is available for existing conditions. See Figure 4.15.28 (Chiriaco Summit Airport Future Noise Contours) for future conditions.

Corona Municipal Airport: Includes noise contours for 2002/2003 and future (ultimate); last updated in 2004. See Figure 4.15.9 (Corona Municipal Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.29 (Corona Municipal Airport Future Noise Contours) for future contours.

Desert Center Airport: Includes noise contours for 2025; last updated in 2004. No contour map is available for existing conditions. See Figure 4.15.30 (Desert Center Airport Future Noise Contours) for the future conditions map. Also, this airport is no longer public use.

Flabob Airport: Includes noise contours for 2003 and future (ultimate); last updated in 2004. See Figure 4.15.10 (Flabob Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.31 (Flabob Airport Future Noise Contours) for future contours.

French Valley Airport: Includes noise contours for 2002 and future (ultimate); last updated in 2004. See Figure 4.15.11 (French Valley Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.32 (French Valley Airport Future Noise Contours) for future contours.

Hemet-Ryan Airport: Includes noise contours for 1990 and 2005; last updated in 1992. See Figure 4.15.12 (Hemet Ryan Airport Existing (1990) Noise Contours) for existing (1990) noise contours map and Figure 4.15.33 (Hemet Ryan Airport Future (2005) Noise Contours) for future (2005) noise contours.

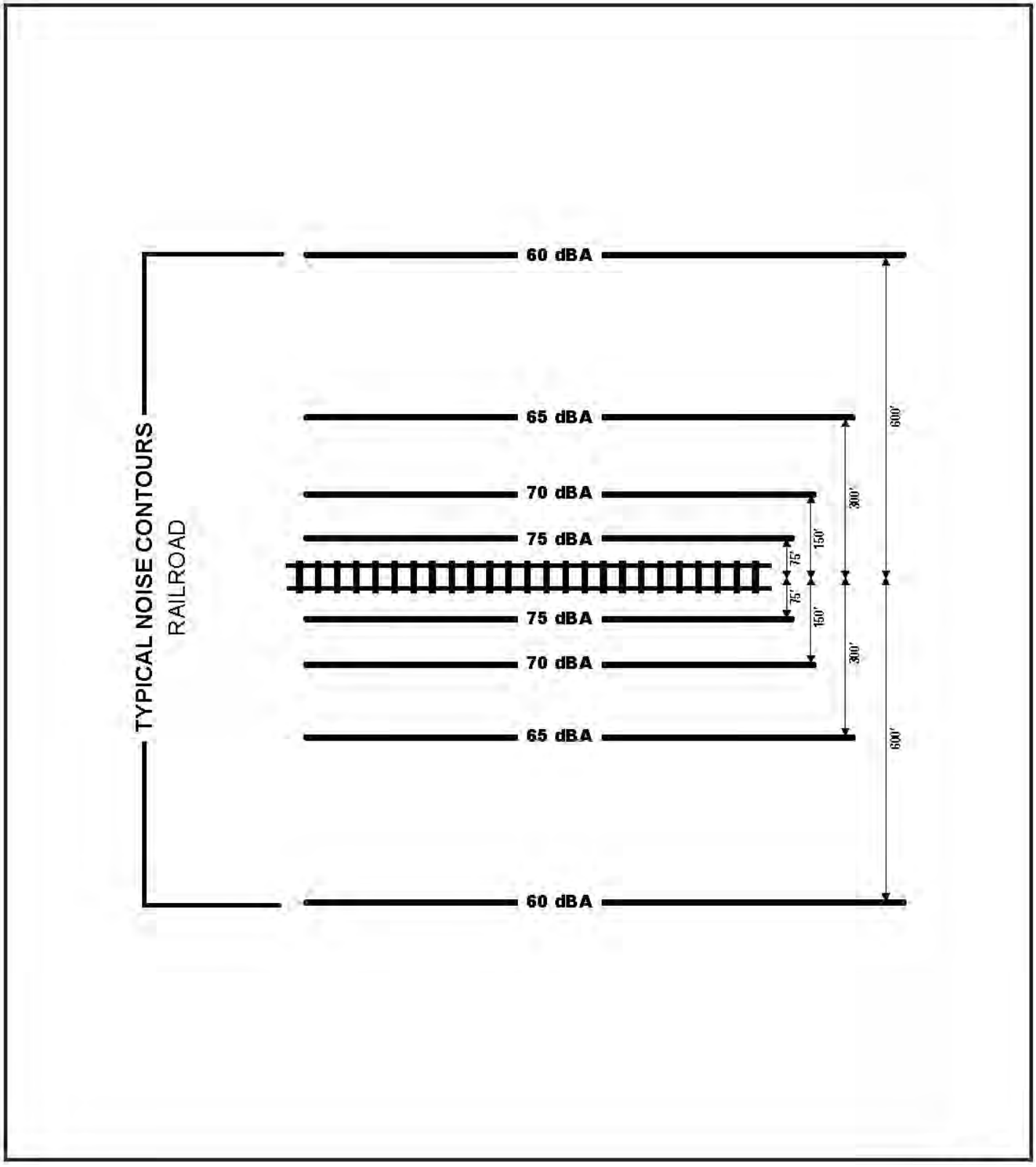
Jacqueline Cochran Regional Airport: Includes noise contours for 2002 and 2025 (and ultimate); last updated in 2004. See Figure 4.15.13 (Jacqueline Cochran Regional Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.34 (Jacqueline Cochran Regional Airport Future (2025) Noise Contours) and Figure 4.15.35 (Jacqueline Cochran Regional Airport Future (Ultimate) Noise Contours) for future noise contour maps.

Palm Springs International Airport: Includes noise contours for 2002 and 2025; last updated in 2005. See Figure 4.15.14 (Palm Springs International Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.36 (Palm Springs International Airport Future (2025) Noise Contours) for future contours.

Perris Valley Airport: Noise contours for 2008 and 2028; last updated in 2010. No unincorporated areas within the Plan area. See Figure 4.15.15 (Perris Valley Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.37 (Perris Valley Airport Future (2028) Noise Contours) for future noise contours.

Riverside Municipal Airport: Includes noise contours for 2003 and 2025; last updated in 2005. See Figure 4.15.16 (Riverside Municipal Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.38 (Riverside Municipal Airport Future (2025) Noise Contours) for future contours.

Chino Airport: Includes noise contours for 2002 and 2028; last updated in 2008. See Figure 4.15.17 (Chino Airport Existing Noise Contours) for existing noise contours map and Figure 4.15.39 (Chino Airport Future (2028) Noise Contours) for future contours.



Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.2

TYPICAL RAILROAD NOISE CONTOURS: 1 LOCOMOTIVE AND 5 CARS WITH HORNS (A COMMUTER TRAIN)

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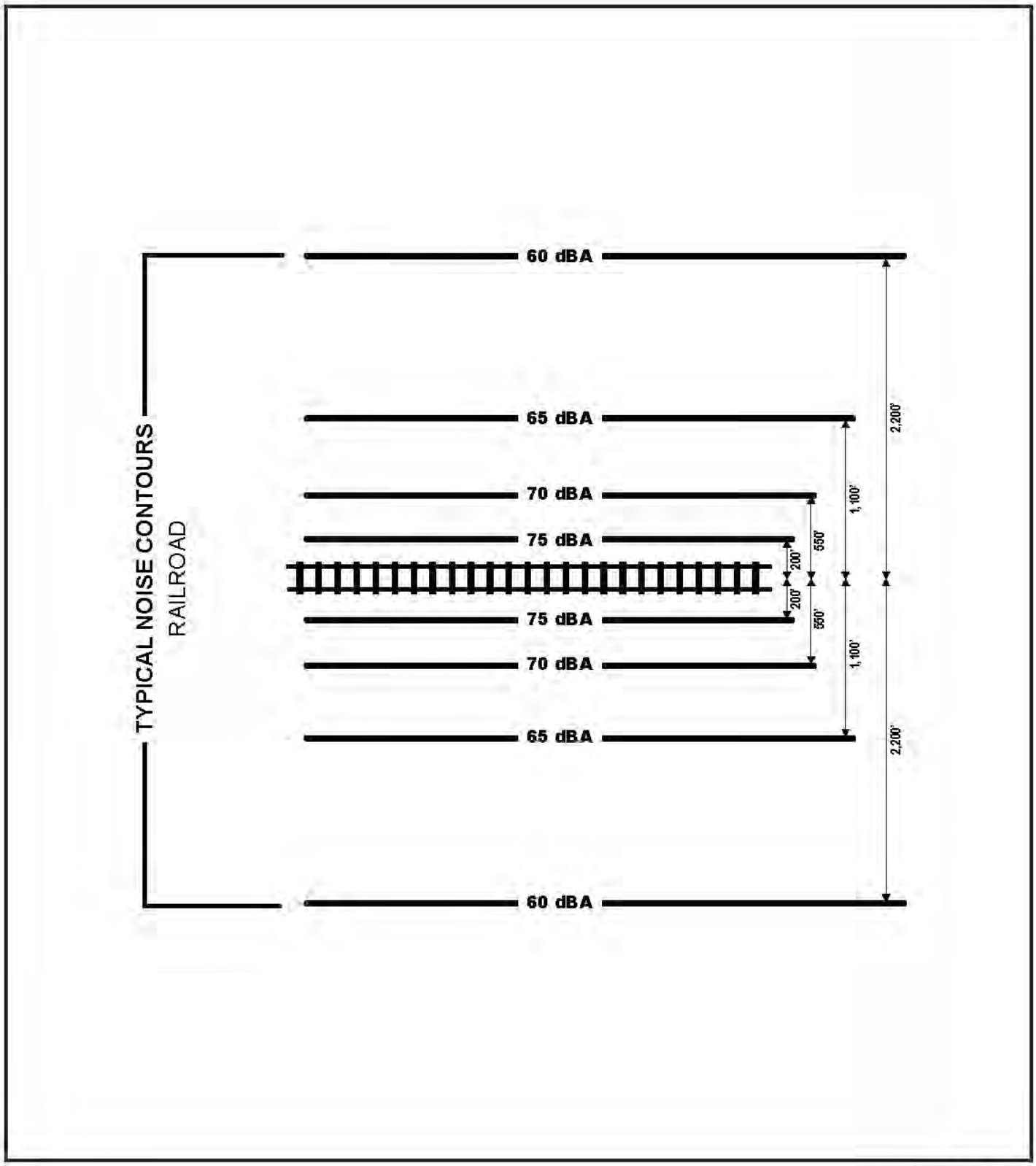

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.3

TYPICAL RAILROAD NOISE CONTOURS: 2 LOCOMOTIVES AND 50 CARS WITH HORNS (A FREIGHT TRAIN)

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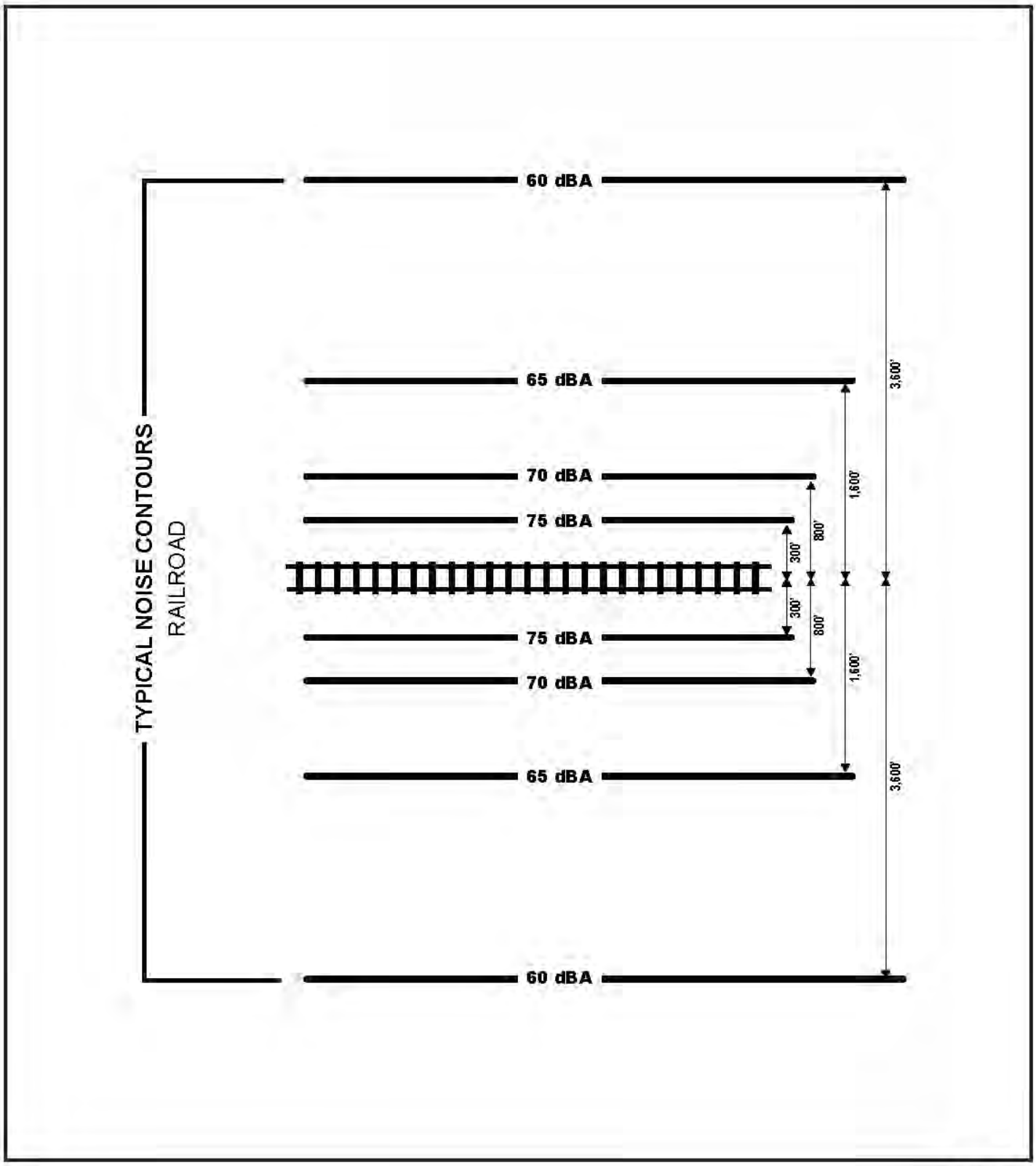

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.4

TYPICAL RAILROAD NOISE CONTOURS: 3 LOCOMOTIVES AND 100 CARS WITH HORNS (A FREIGHT TRAIN)

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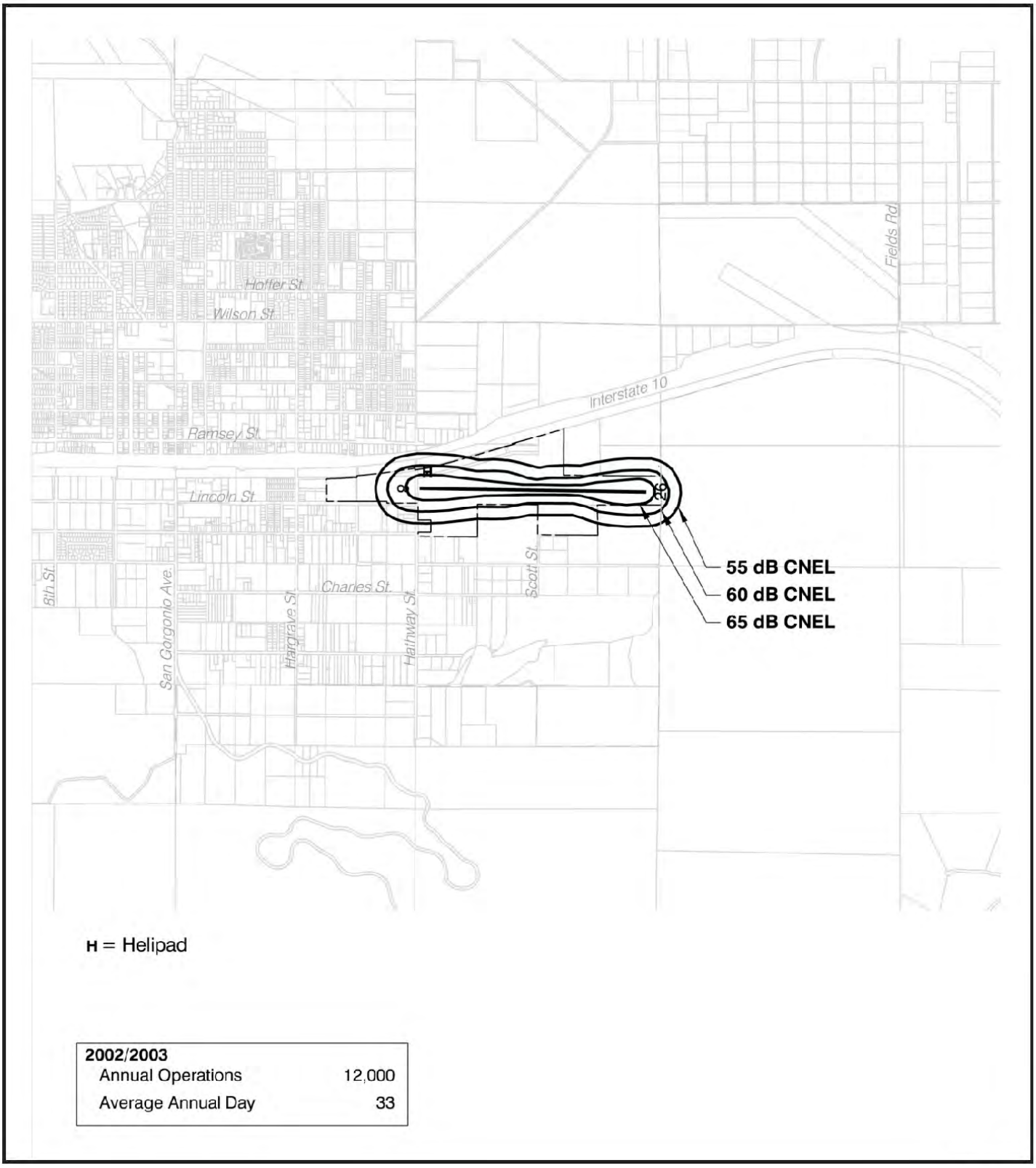

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.5

BANNING MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS

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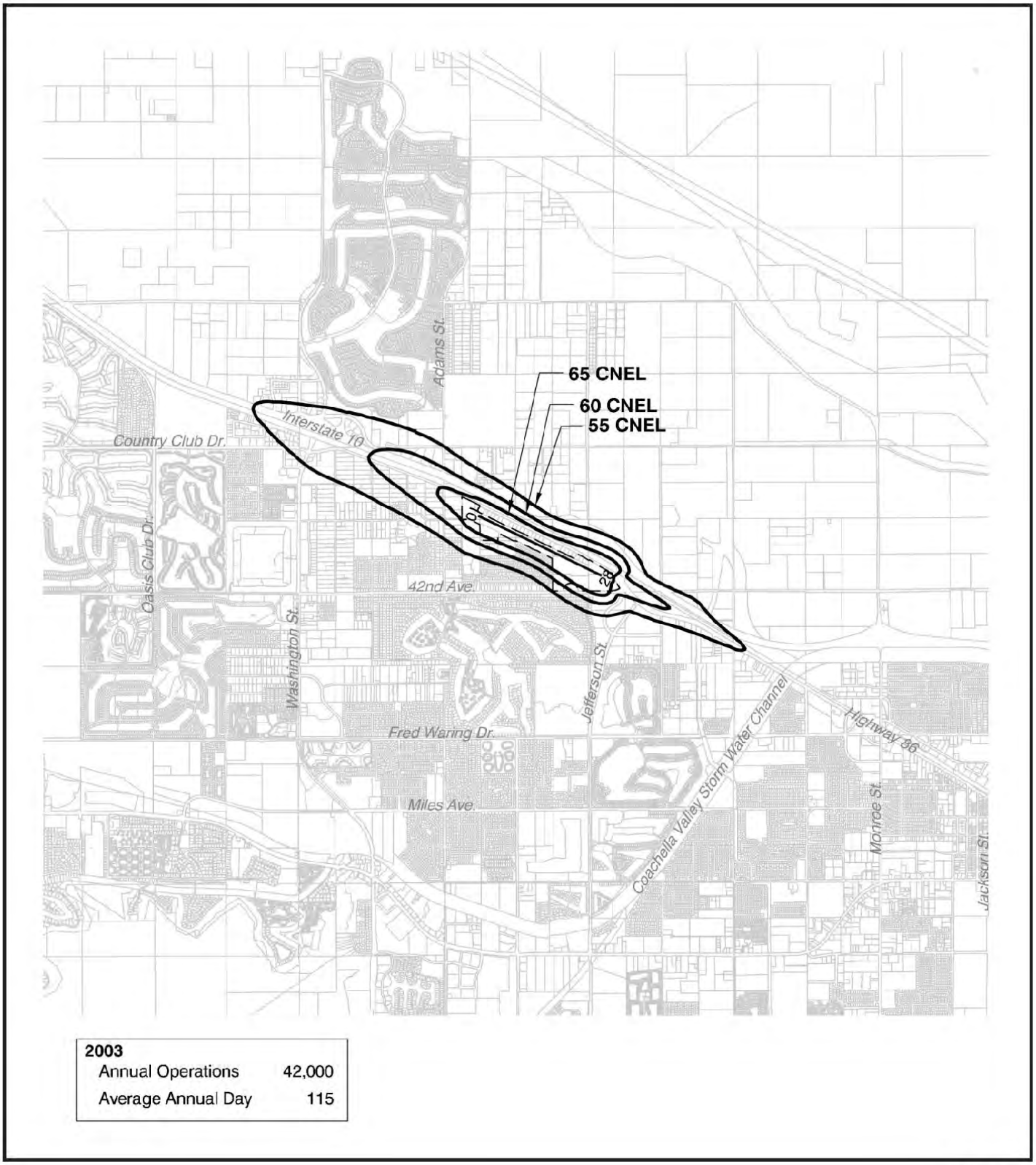

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.6

BERMUDA DUNES MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS:
AVERAGE ANNUAL DAY

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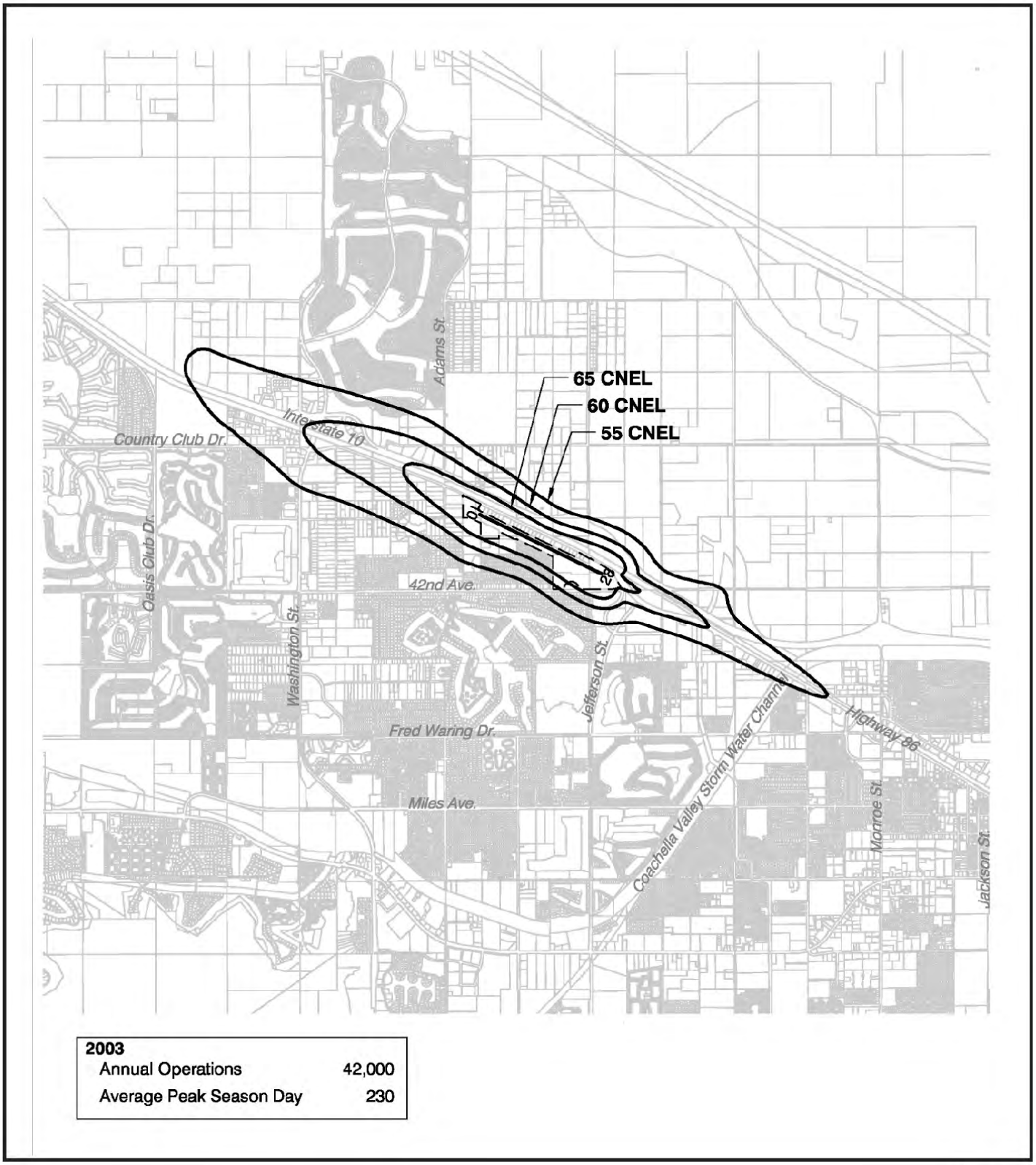

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.7

BERMUDA DUNES MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS:
AVERAGE PEAK SEASON DAY

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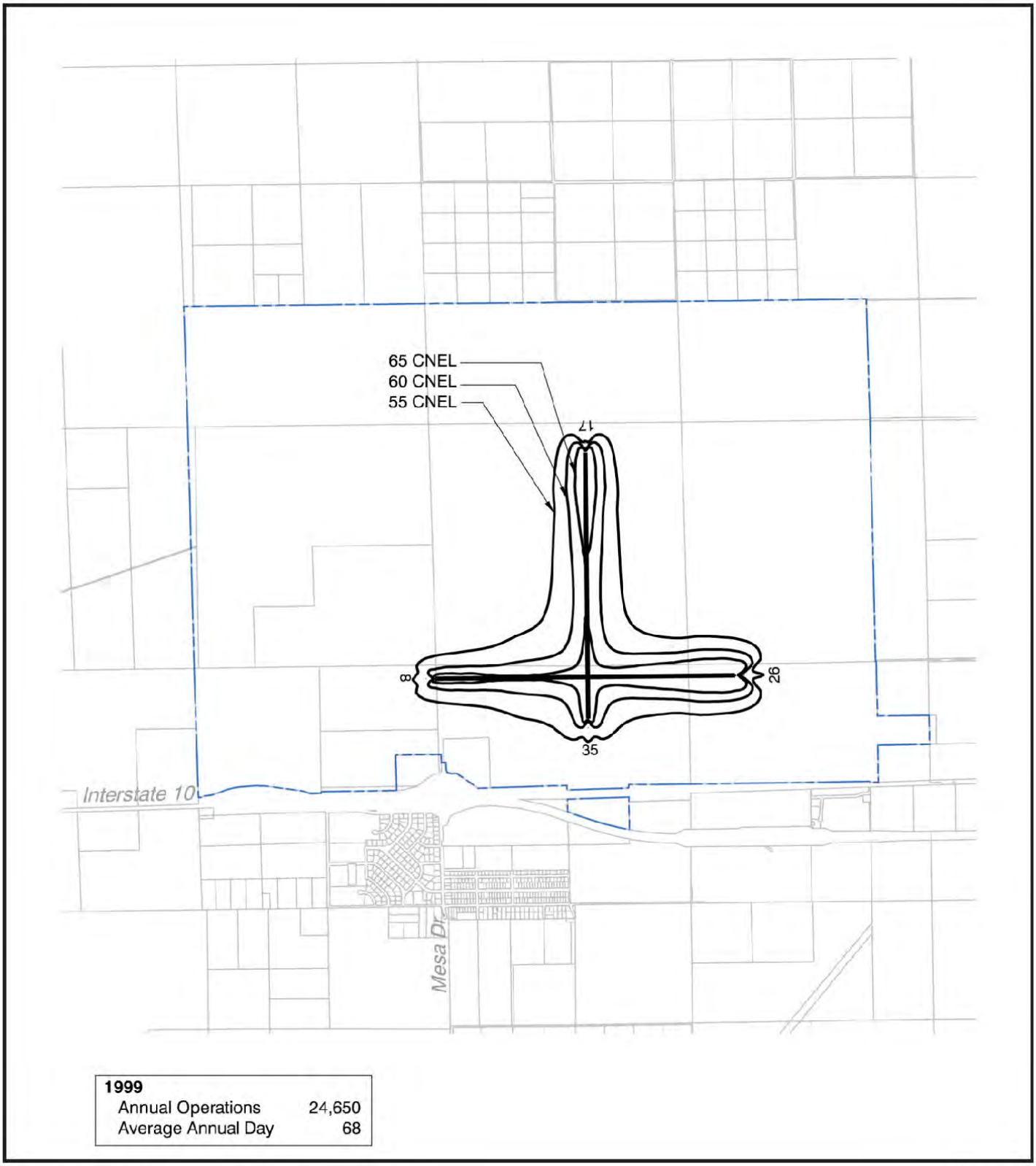

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.8

BLYTHE MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS

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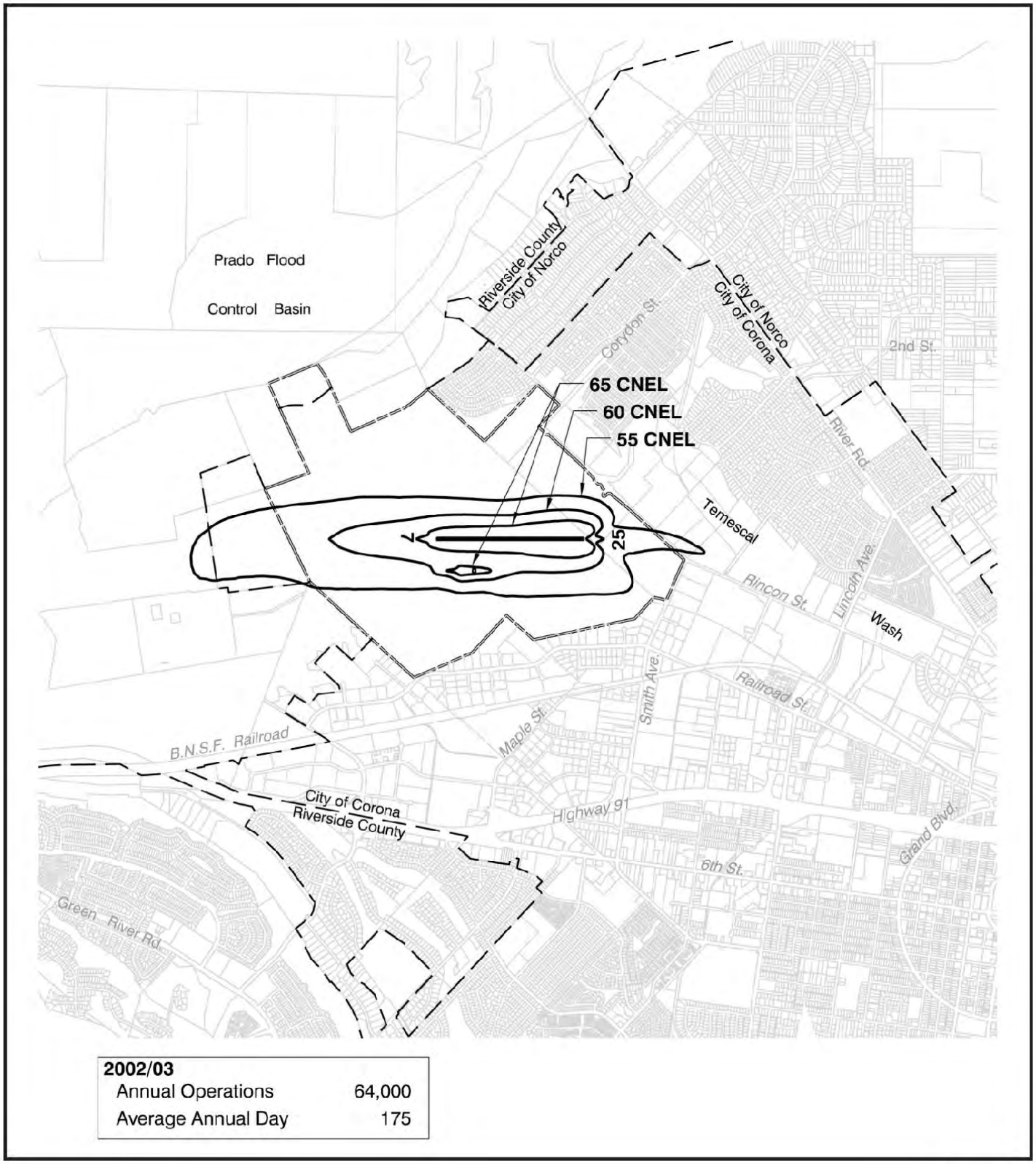

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.9

CORONA MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS

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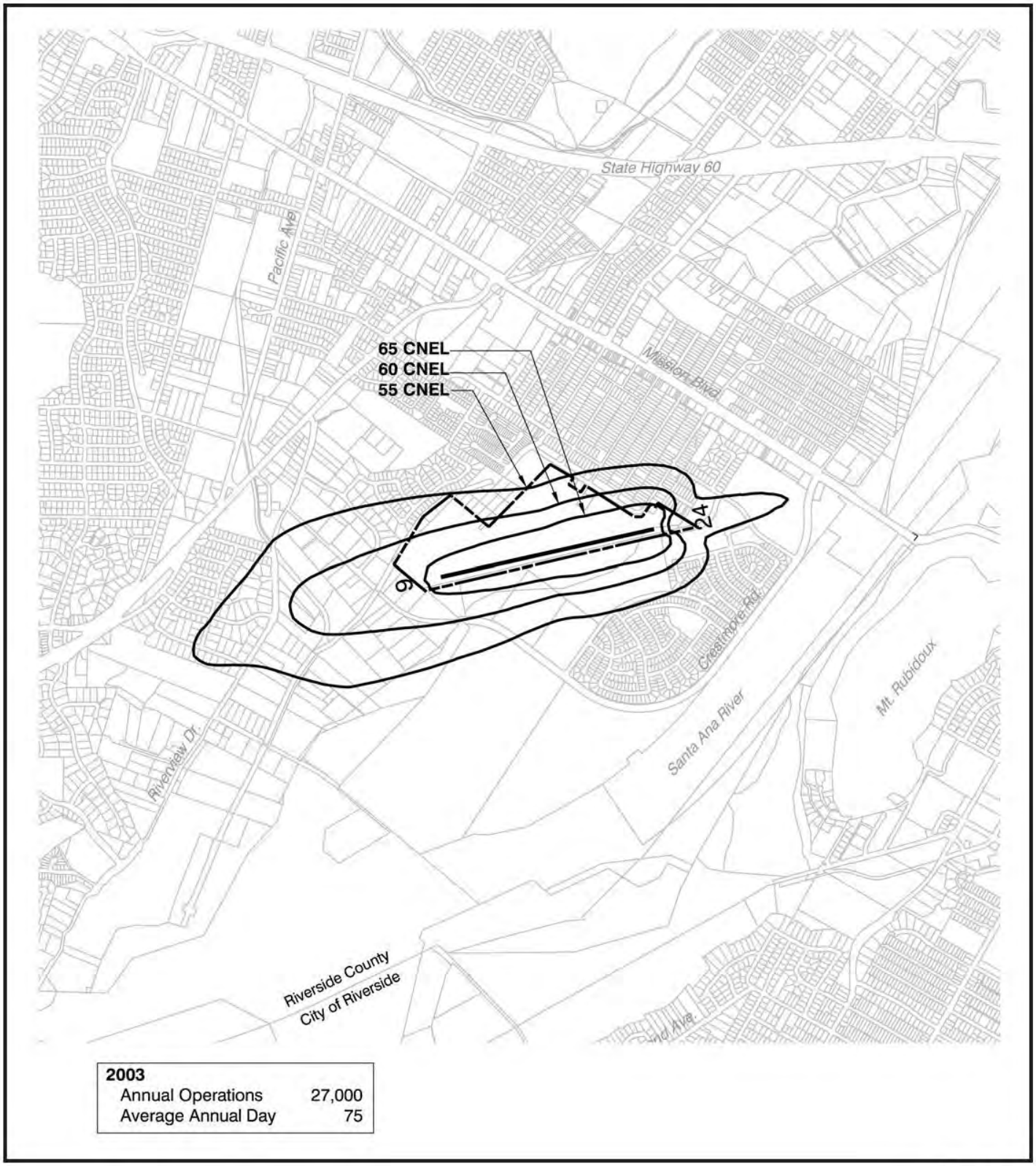

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.10

FLABOB AIRPORT
EXISTING NOISE CONTOURS

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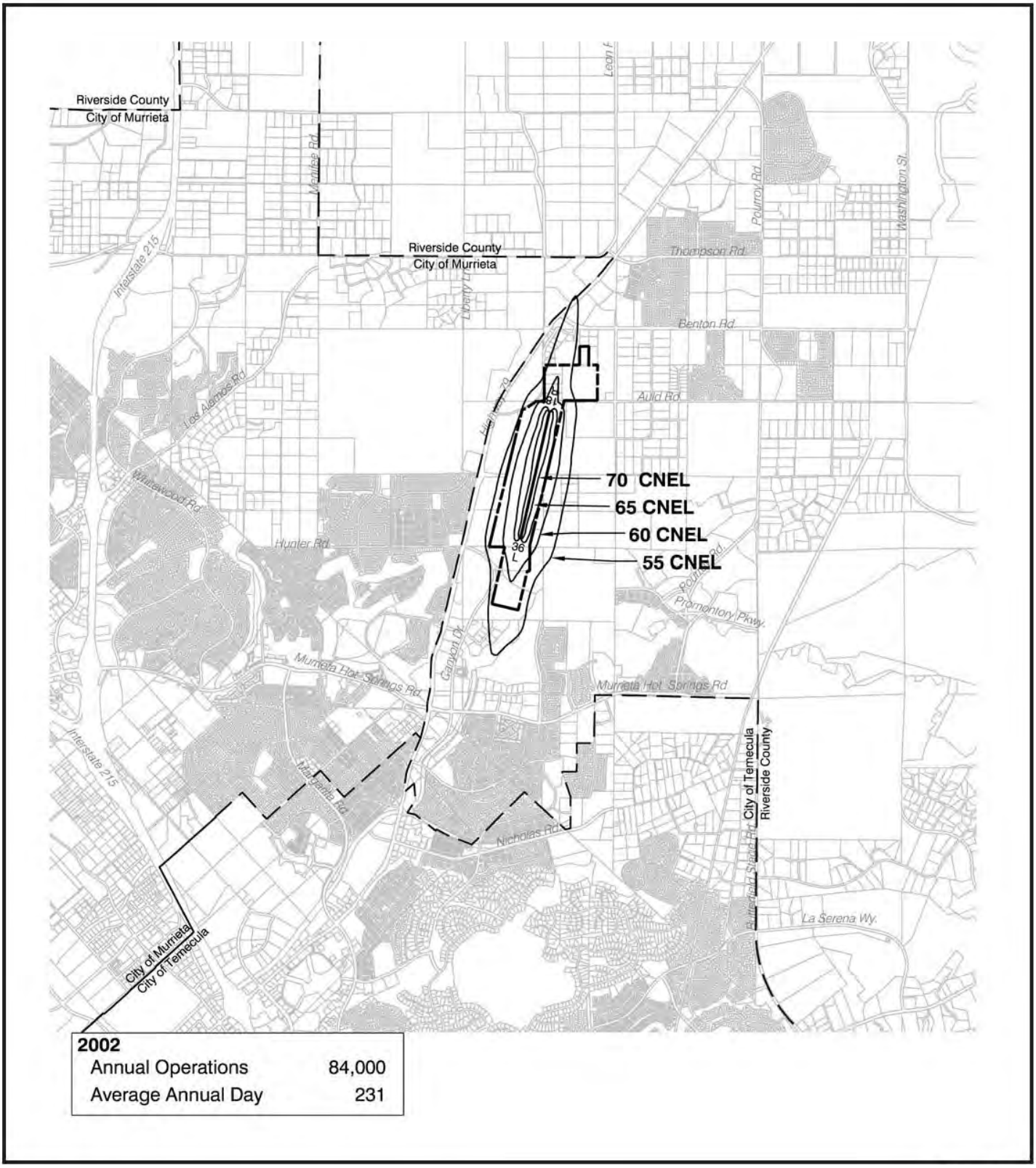

Data Source: Riverside County ALUC (2007)

December 16, 2013

Figure 4.15.11

FRENCH VALLEY AIRPORT
EXISTING NOISE CONTOURS

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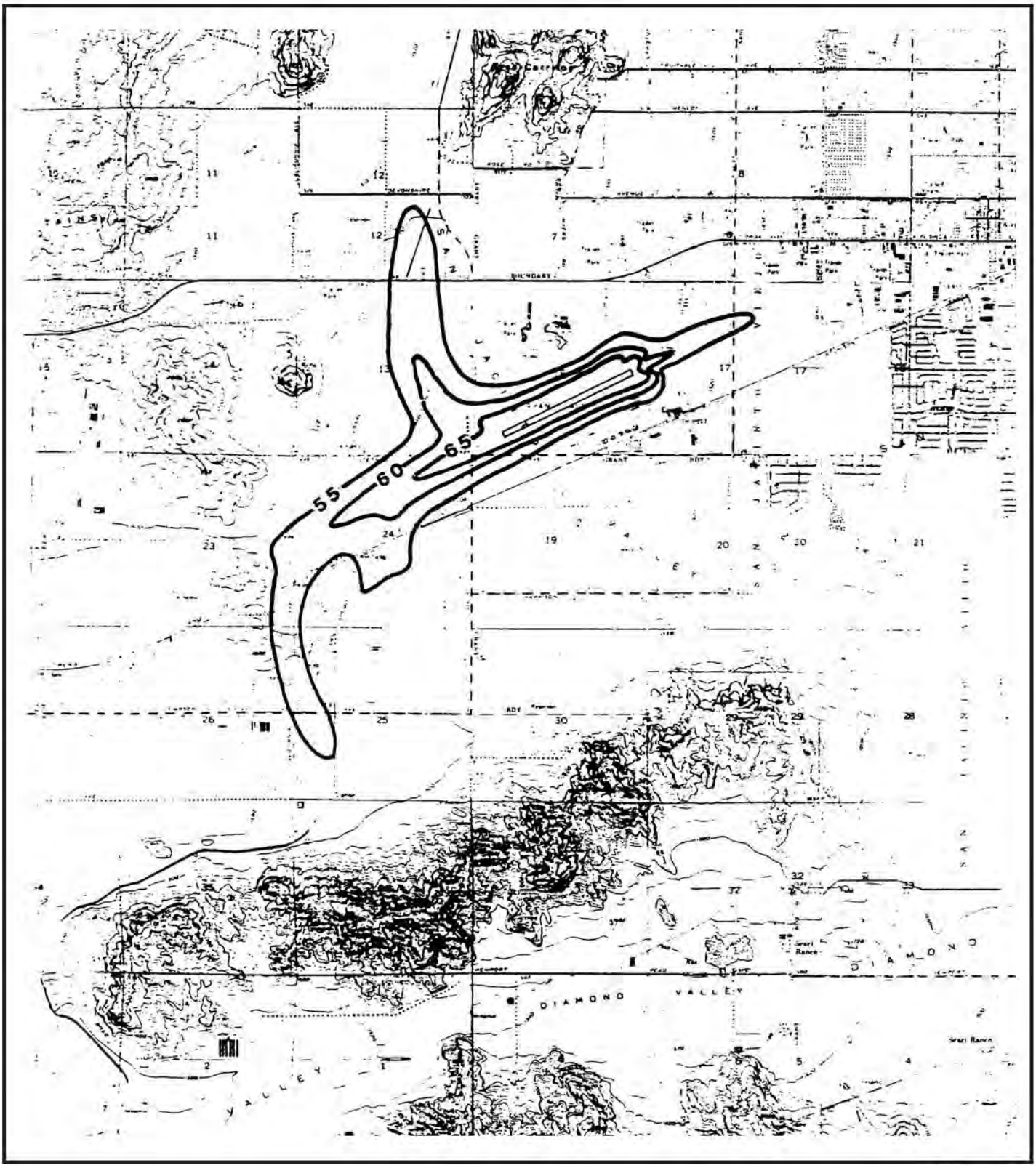

Data Source: Riverside County ALUC (1992)

December 16, 2013

Figure 4.15.12

HEMET RYAN AIRPORT
EXISTING NOISE CONTOURS

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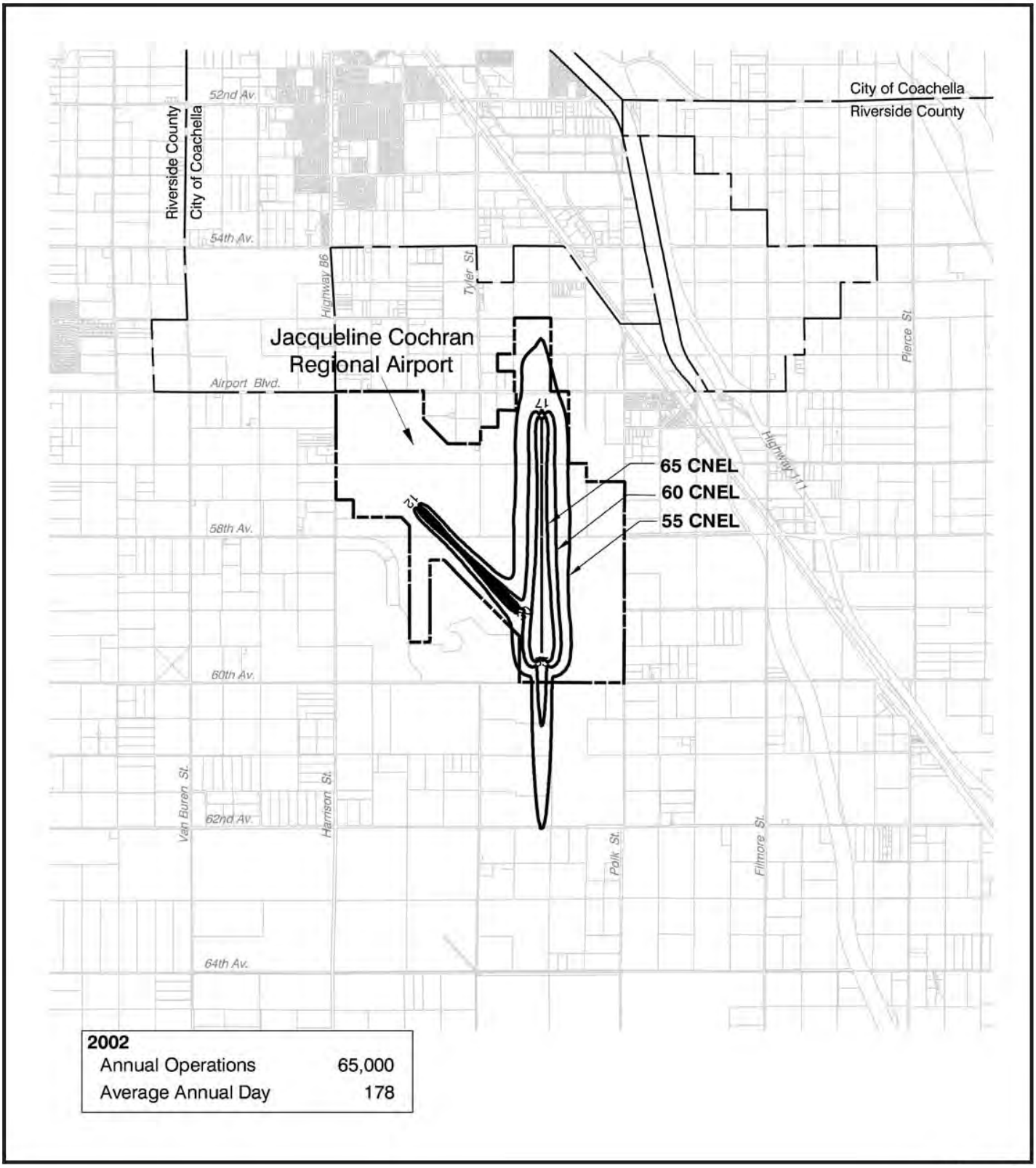

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.13

JACQUELINE COCHRAN REGIONAL AIRPORT EXISTING NOISE CONTOURS

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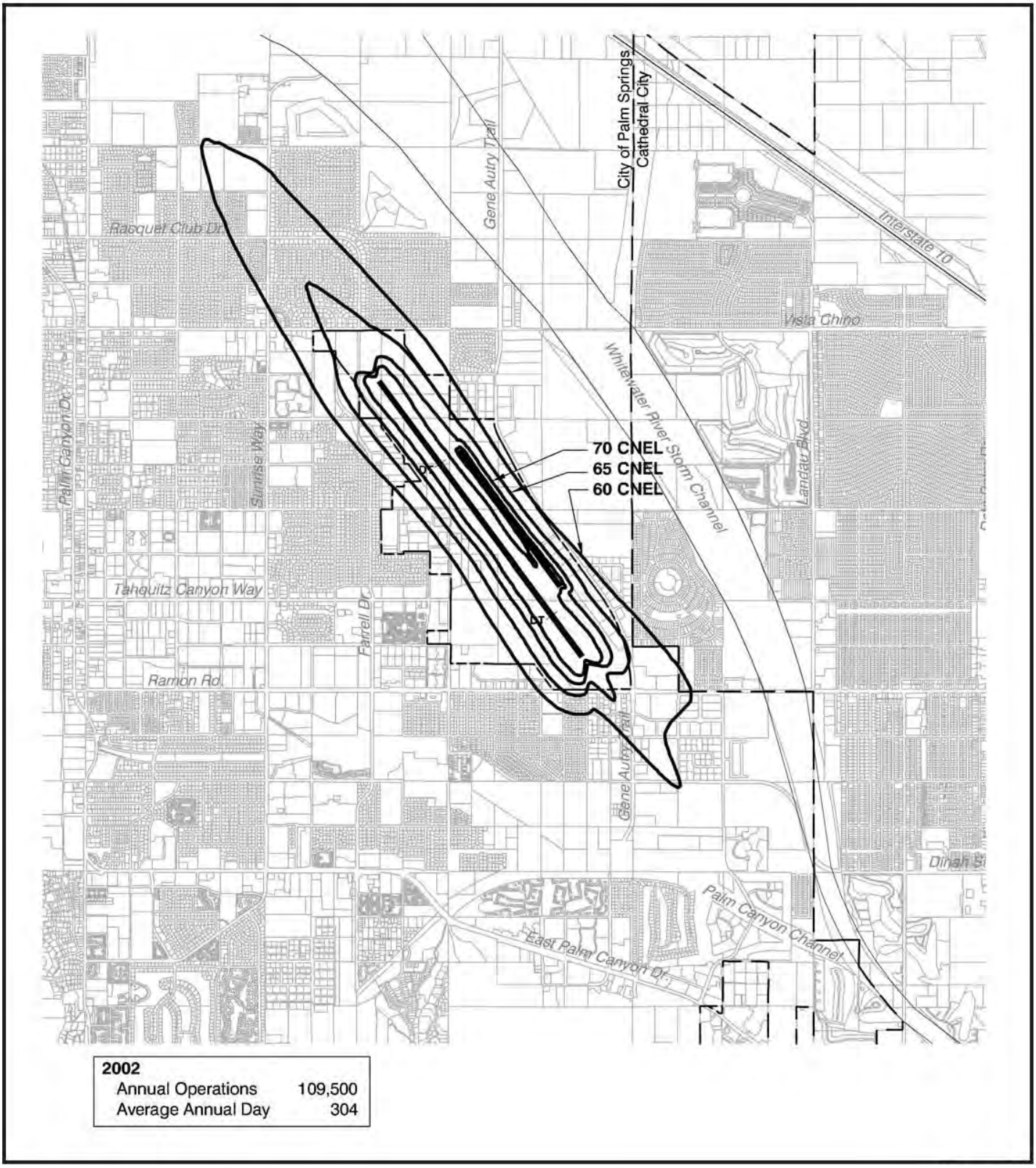

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.14

PALM SPRINGS INTERNATIONAL AIRPORT EXISTING NOISE CONTOURS

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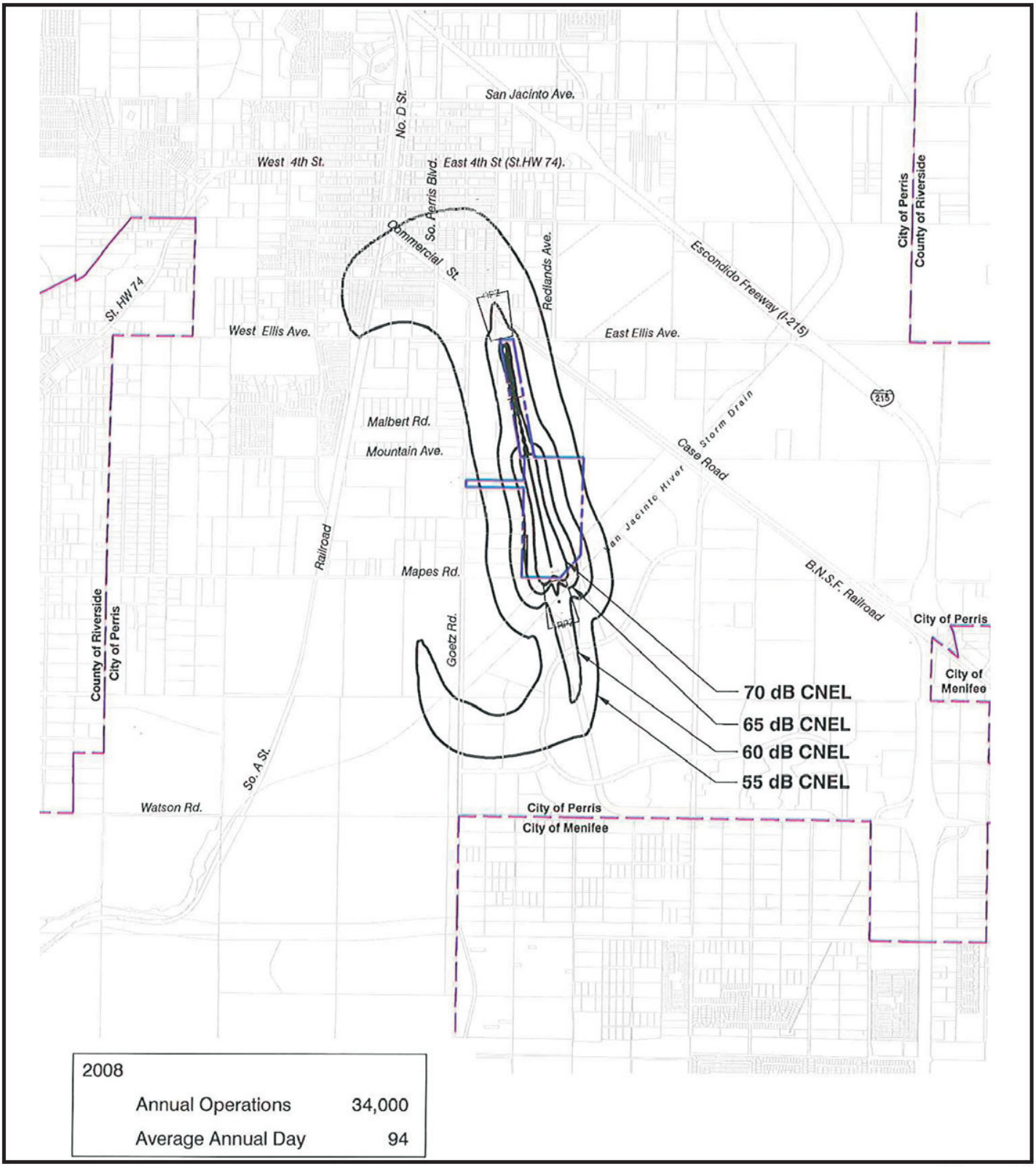

Data Source: Riverside County ALUC (2011)

December 16, 2013

Figure 4.15.15

PERRIS VALLEY AIRPORT
EXISTING NOISE CONTOURS

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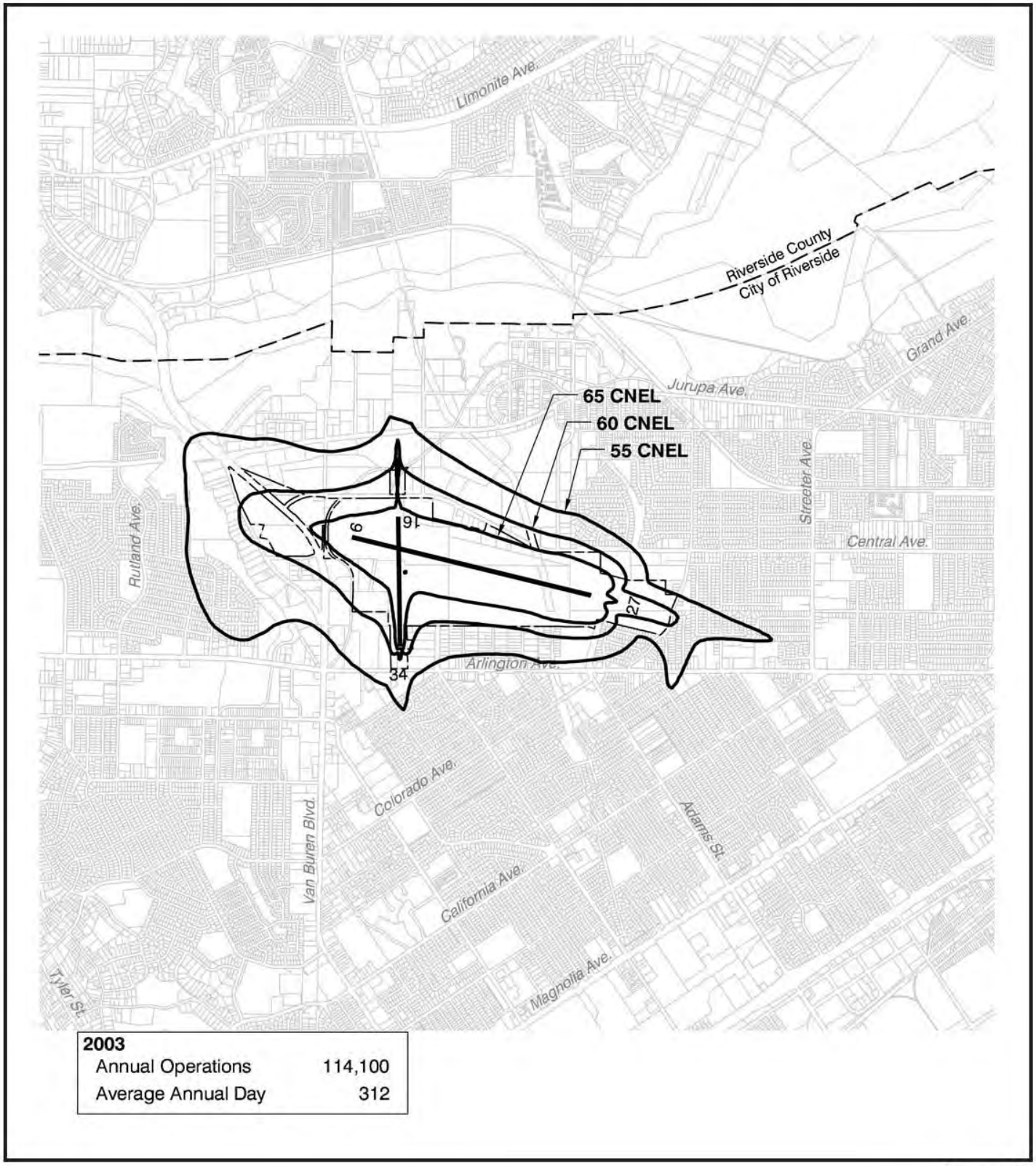

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.16

RIVERSIDE MUNICIPAL AIRPORT
EXISTING NOISE CONTOURS

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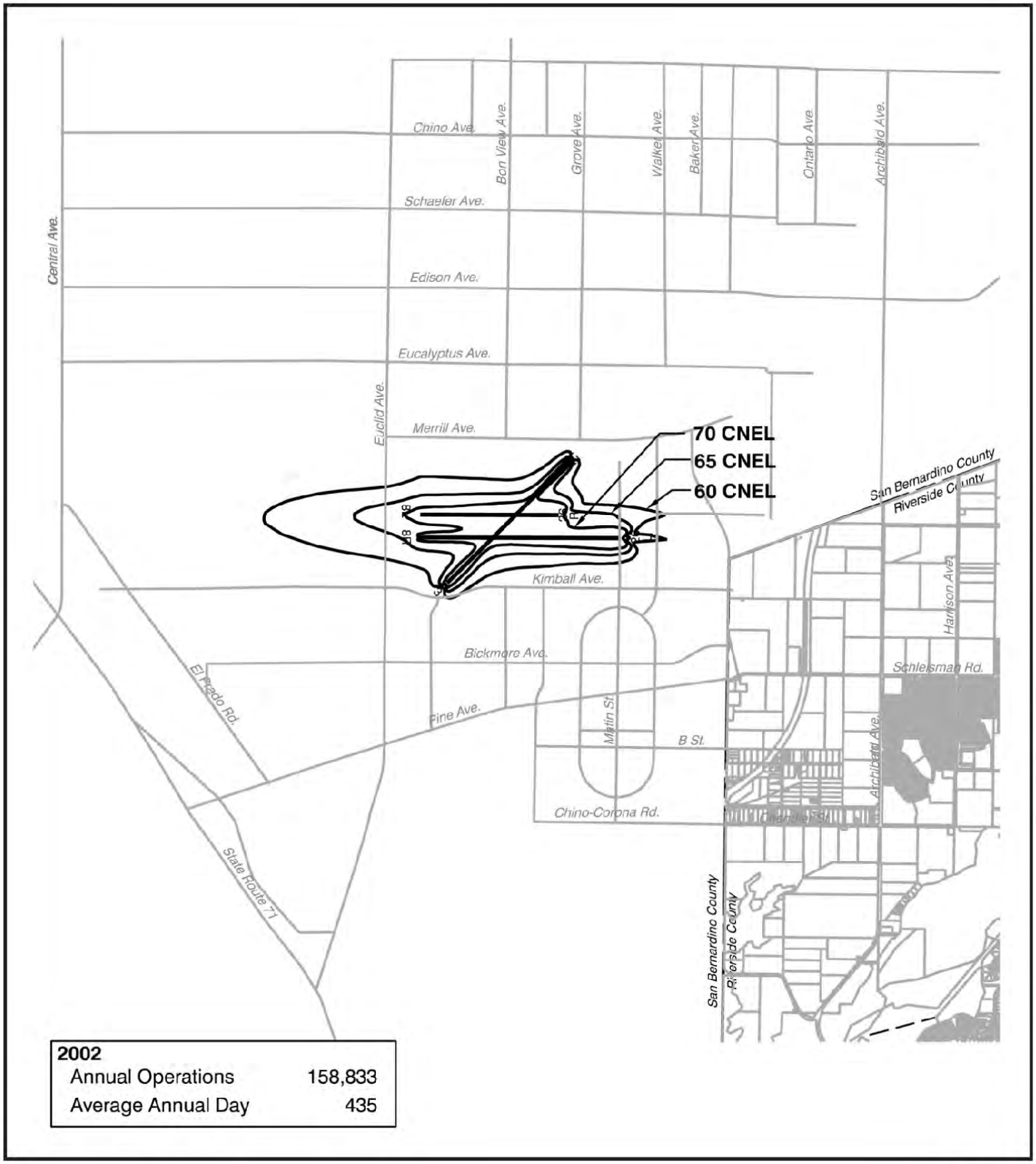

Data Source: Riverside County ALUC (2008)

December 16, 2013

Figure 4.15.17

CHINO AIRPORT
EXISTING NOISE CONTOURS

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E. Military Noise Sources

Military activities can have various effects on the ambient noise environment, mainly from aircraft and ordnance delivery. In 2010, the U.S. Department of the Navy issued a Final Environmental Impact Statement (Final EIS) addressing a proposal to base, train and operate a new fighter jet, the F-35B, on the West Coast. Much of the military noise information presented in this section comes from that document. Information regarding operations at the Chocolate Mountain Aerial Gunnery Range (CMAGR, discussed below) and other facilities comes from the CMAGR Land Withdrawal Renewal Draft Legislative Environmental Impact Statement (Draft LEIS) issued by the U.S. Department of the Navy in August 2012. The Draft LEIS assesses the potential environmental effects of continuing to use CMAGR for military training activities for another 25 years beyond 2014.

The predominant noise sources associated with military activities are aircraft operations, both at and around base airfields, as well as in military airspace and on ranges. Airspace noise includes supersonic flight and ordnance delivery events. According to the Final EIS issued by the U.S. Navy for West Coast base operations, noise conditions associated with military operations can include a variety of aircraft-related noises, such as the following:

- Sonic booms generated by aircraft traveling at airspeeds in excess of Mach 1 (the speed of sound, about 340 miles per hour). A short burst of vibration may accompany the sound. Per the Navy Final EIS (page 3-9), the overpressures of sonic booms that reach the ground are well below those that would begin to cause physical injury to humans or animals. They can, however, be annoying and cause startle reaction in humans and animals.

- Area-type operations, where aircraft are uniformly distributed horizontally within an airspace, including: rotary-wing close air support; air-to-air operations (helicopters and jets), such as air combat maneuvers, area reconnaissance, low-altitude training and air interdiction (i.e., tactical attack without ground support); fixed-wing close air support. Any of which may occur in multiple areas at once. These types of noises can be fairly continuous when involving aircraft hovering or centered over a single area for long periods. Rotary-wing aircraft may also generate low-level (weak) airborne vibrations as well.

- Route-type operations, where aircraft are dedicated to a specific route (for example, bombing runs or ingress/egress routes), including: low-altitude rotary-wing close air support and high-altitude fixed-wing close air support. These types of noise tend to be of shorter duration, as the noise source tends to travel into and out of earshot as a route is flown. Any associated vibrations are also transient.

- Ordnance delivery by aircraft (contributing both aircraft and very-short duration explosive noise and vibration).

Except for route-type operations, the above operations are generally limited to the restricted areas on, above and in the general vicinity of the military facility conducting the exercise. Route operations can also take aircraft away from the military facility's direct (restricted) airspace along "military training routes," which are discussed below. Other ground-based noise and vibration can be generated on military facilities by the following:

- Artillery fire from field guns, mortars, howitzers, anti-aircraft guns, etc. (very-short duration explosive noise and vibration).

- Ground-based arms, artillery and ordnance exercises, including "numerous rifle, machinegun, rocket and explosive demolition" sounds (Draft LEIS, page 3-102). This includes both weapon discharges as well as detonation of explosives (including high explosives) and demolition charges.

- Vehicle travel, including both traditional axled vehicles (cars, jeeps, trucks, Humvees, etc.) as well as tracked vehicles (tanks, bulldozers, etc.). Vehicles may travel both on and off road. Vehicle noise may also be associated with transit to/from the facility.

- Operation of fixed and portable equipment, such as electricity generators, air conditioners, radios and other communication, data and navigation devices, etc.

Other "non-military man-made" sources of noise occurring on or near military facilities can include: roadway vehicle operation, rail traffic, commercial and industrial operations, agricultural activities and equipment (discing, sowing, harvesting, etc.), off-road vehicle operation, property landscaping and maintenance, operation of heating, ventilation and air conditioning (HVAC) equipment at residences, commercial, industrial or agricultural land uses, etc. (Draft LEIS, page 3-93).

With its large expanses of open land, Riverside County is home to a number of military bases, including three active facilities: the Chocolate Mountain Aerial Gunnery Range (part of the Bob Stump Training Range Complex), March Joint Air Reserve Base and the Naval Surface Warfare Center (in Corona). The Naval Warfare Center provides technical operations, testing and assessment, and engineering support for the Navy and is not associated with aircraft, munitions or other significant military noise sources. Thus, it is not discussed further here.

Bob Stump Training Range Complex: Since before World War II, the southwestern United States has been vital in providing the vast expanses of open space necessary for the training of the country's Armed Forces. Spanning over 1.2 million acres in southwest Arizona and southeast California, including a portion of Riverside County, the Bob Stump Training Range Complex (BSTRC) is the largest military training facility in the world (see Figure 4.15.18 (Military Airspace in Southern California)). The U.S. Marine Corps complex encompasses the Chocolate Mountain Aerial Gunnery Range (CMAGR) in Riverside and Imperial counties, the El Centro Range Complex (in southern Imperial County, near the Mexico border), the Air Ground Combat Center at Twenty-nine Palms in San Bernardino County, the Barry M. Goldwater Range in Yuma County, Arizona, and also the U.S. Army's Yuma Proving Ground also in Arizona.

In addition to providing territory for various wide-ranging ground force and surface-fire activities, the BSTRC is used for training exercises that frequently also involve jet and other military aircraft flying high speeds at low altitudes. Thus, in addition to noise generated on the ground and above military bases and training facilities themselves, portions of the western U.S., particularly the remote desert regions around the Bob Stump Training Range Complex, may be subject to noise from jet overflight and other military use of airspace.

Chocolate Mountain Aerial Gunnery Range: The other most notable source of military noise is the Chocolate Mountain Aerial Gunnery Range (CMAGR). The northern tip of CMAGR is located in Riverside County immediately east of the Salton Sea. In total, the range encompasses nearly 460,000 acres, roughly half of which is public land administered by the Bureau of Land Management (BLM) and half is federal land administered by the Department of the Navy. A total of 108,363 acres of CMAGR are within Riverside County; the remainder (roughly 75% of the site) is in Imperial County.

Since the 1940s, CMAGR has provided support training that is essential to the readiness of the nation's Marine Corps and Naval Air Forces. CMAGR is a live-fire tactical aviation training range that takes advantage of the area's desert mountain terrain, which is ideal for air-to-ground attack and air-to-air combat training. According to the Navy (Draft LEIS, page 3-10), "25 types of tactical aviation training activities currently occur on a regular basis at the CMAGR and its adjacent MTRs." Tactical military exercises at CMAGR involve live explosives and large force-on-force aviation training, including bombing, rocketry and strafing practice. Artillery, demolitions,

small arms and Naval Special Warfare training are also conducted within the range, as well as parachute air drops and helicopter operations. Aircraft use the CMAGR as well as the special use airspace associated with it. According to the Navy Draft LEIS, CMAGR sees 6,000-7,000 training sorties annually for fixed wing aircraft (one sortie represents one flight by one aircraft from takeoff to landing, but may include any number of bombing, strafing or other training runs). Sorties per day tend to average between five and roughly 20 for most CMAGR airspace areas.

In terms of ordnance operations, the other major source of noise from CMAGR, the Navy's West Coast FEIS reports that an average of 204,000 rounds of large caliber munitions are expended annually and "approximately 42,000 of those rounds were high explosives." (Final EIS, page 6-18) It also notes that "approximately 80% of all rounds fired are associated with air-to-ground activity on the range and 15% and 2% of the total expenditure were during the CNEL evening and nighttime periods, respectively." Based on the data provided, the FEIS notes that CMAGR range use occurs 305 days per year.

Figure 4.15.19 (Existing Noise Contours for Chocolate Mountain Aerial Gunnery Range) shows the existing noise contours associated with CMAGR as reported in the Draft LEIS based on "worse-case" operation levels involving daily operations (i.e., all 30 days of the month monitored) and nearly 7,400 light operations per year. Per the Draft LEIS (page 3-93), the area between the CMAGR southwestern boundary and the Salton Sea "appears to contain a variety of land uses that include either residential uses on what may otherwise be agricultural land, residential communities, such as Bombay Beach and Niland, and even commercial resorts such as Glamis North KOA ['Kampgrounds of America'] and the apparent residences near area attractions such as Salvation Mountain. The latter two examples appear to abut the Coachella Canal and might thus be considered representative of closest off-range potentially noise-sensitive receivers with respect to the CMAGR boundary." Of these sites, only the Glamis North KOA campground is located within Riverside County, the rest are all within Imperial County. As reported by the Navy (Draft LEIS, page 3-102), the ambient noise levels (L_{eq}) in the region range from 30-60 dBA over a continuous 24-hour period (for nighttime hours, the effective L_{dn} would be approximately 50 dBA). (Note, the measurement was taken near Niland, roughly two miles from the CMAGR boundary and also "appear to include sound from distant military operations conducted at the CMAGR con-current[ly].")

The noise contours shown address noise generated by ordnance detonations and aircraft flight. As shown in Figure 4.15.19, modeling of ordnance noise generation found that the "62 dBC CNEL noise contours do not extend beyond the current government property boundaries" of CMAGR (Draft LEIS, page 3-102) and no "off-range persons or housing units" (in Riverside or Imperial County) are exposed to noise levels greater than 62 dBC CNEL. For aircraft noise, the 65 dBA contour is limited to within the boundaries of the CMAGR, also as shown in Figure 4.15.19. Note, as opposed to dBA, which filter out very high and very low frequencies to replicate human ear sensitivity, dBC units denote essentially unweighted decibels. "C-weighting" is typically applied to impulsive sounds, such as sonic boom or ordnance detonation (Final EIS, page 3-7).

According to the Draft LEIS, the existing contours reflect typical activities ongoing at the range through a given training year (305 days of activity annually). The noise contours mapped and modeled, as shown in Figure 4.15.19, are for existing activity levels at CMAGR. This level of activity is projected to continue to occur at the same approximately level of intensity for the next 25 years. Thus, no separate "future" noise contour maps are included in this section for CMAGR. Also, since noise exposure outside CMAGR within Riverside County are mapped as being within limits (i.e., under 65 dBA), CMAGR as a noise source is not discussed further in either the 'Effects' or 'Impacts and Mitigation' portions of this section (Sections 4.15.5 and 4.15.6). With the proposed General Plan policies and low level of development potential surrounding the CMAGR in Riverside County, it can safely be concluded that future development resulting from or accommodated by GPA No. 960, including

land use changes in the Salton Sea area, would not be subject to significant noise impacts from CMAGR activities. No further analysis is needed at this time.

March Joint Air Reserve Base: March is one of the oldest airfields operated by the U.S. military, having been established as Alessandro Flying Training Field in 1918. March Field's primary mission was pilot training, then in 1931 it became used as an operations base. (It was also home to Bob Hope's first USO show in 1941.) After World War II, the base became part of the Air Force's Tactical Air Command, later the Strategic Air Command (until 1992). Since 1996, March has been an Air Reserve Base under the Air Force Reserve Command (renamed a Joint Air Reserve Base in 2003). The base is still active as a military airport, hosting operational flying missions, particularly humanitarian missions, the 4th Air Force of the Air Force Reserve Command and multiple units of the California Air National Guard. It is also to be used for air cargo (as part of the adjacent March GlobalPort) in the future. However, other than air shows and other short special events, March Air Reserve Base is typically not a major center for noise-generating military exercises, training or other activities. See Figure 4.15.20 (March Joint Air Reserve Base, Noise Contours) for the existing noise contour for March.

Military Operations Areas and Military Training Routes: Both of these terms denote types (or uses) of military airspace that can lead to the travel of military aircraft at altitudes and/or speeds that could result in (usually) brief noise and/or vibration exposures to people on public or private lands outside of military facilities. Because of the speed and power of the aircraft involved, these airspaces can stretch a hundred or more miles from the associated military facility. Associated noise exposures can affect thousands of people, though almost always for very brief periods at infrequent intervals.

A "military operations area" (MOA) is defined in the Code of Federal Regulations (Title 14, Section 1.1) as "airspace established outside Class A airspace to separate or segregate certain non-hazardous military activities from IFR traffic [i.e., aircraft navigating by instrument, such as commercial jetliners] and to identify for VFR traffic [i.e., aircraft navigating visually, such as civilian light planes, etc.] where these activities are conducted." MOAs are designed for routine training or testing maneuvers. Areas above military bases, near actual combat or other military emergencies are generally designated as "restricted airspace." MOAs have restrictions or prohibitions that occur periodically, rather than continuously, and apply only to the aircraft not participating in the military operation. Typically, MOAs restrict non-military aircraft to certain elevations or speed, but do not prohibit them entirely.

MOAs are often positioned over isolated, rural areas to provide ground separation for any noise nuisance or potential accident debris. Each designated MOA appears on the relevant air avigation sectional charts, along with its normal hours of operation, lower and upper altitudes of operation, controlling authority contact and using agency. Although live-fire training with aircraft weapons can only occur within restricted airspace, the adjacent MOAs enhance the versatility and realism of this training by expanding the airspace available for tactical maneuvers before or following ordnance delivery actions, for example at the CMAGR (Draft LEIS, page 3-8). MAOs in Southern California, including portions of eastern Riverside County, are shown in Figure 4.15.18.

As shown in Figure 4.15.21 (Military Training Airspace in the SMAGR Operating Area), a number of "military training routes" (MTRs) link the various facilities of the Bob Stump Training Complex, as well as providing routes across the country. MTRs are aerial corridors established jointly by the Federal Aviation Administration (FAA) and the federal Department of Defense (DOD) in which military aircraft can operate below 10,000 feet mean sea level (MSL) at speeds exceeding the 250 knot limit (nearly 290 miles per hour) that all other aircraft are normally restricted to when below that elevation (the exception is when a craft is instructed otherwise by an air traffic controller, e.g., for hazard avoidance reasons, emergencies, etc.). These runs are conducted as part of military low-altitude, high-speed training and at times may exceed the 10,000 foot MSL level. Military craft are supposed to, however, stay at or below Mach 1 (the speed of sound). According to the U.S. Marine Corps, aircraft using

these military training routes may fly as low as 200 feet above ground level at speeds up to, but not exceeding, the speed of sound.

Thirteen MTRs, which share nine centerlines, are currently located within five nautical miles of the restricted airspace at CMAGR (see Figure 4.15.21). Three of these MTRs are used for training missions at the CMAGR, providing entry to the CMAGR and allowing aircrews to practice long-distance, low-level, terrain-following, high-speed flight as a tactic for attacking a target while using terrain to mask their approach and evade detection. Four other MTRs transit airspace near the CMAGR, but do not directly support its operations. Others link the southeastern California bases with other military facilities further north (such as the Twenty-nine Palms Air Ground Combat Center north of Riverside County) and in Arizona to the east (e.g., Yuma Proving Ground and Laguna Army Airfield) and southeast (such as the Yuma Air Station and the Barry M. Goldwater Range). All of these facilities are within 100 miles of CMAGR (Draft LEIS, page 3-8).

According to the Riverside County Airport Land Use Commission (RCALUC), per its 2004 Riverside County Airport Land Use Compatibility Plan Policy Document (page I-3), there are also military and restricted flight areas in Riverside County associated with the Quail Military Operations Area, located north of Blythe Airport and the Kane and Abel Military Operations Areas (part of the CMAGR). Additionally, there is a restricted flight area associated with Camp Pendleton (a U.S. Marine Corps Air Station in San Diego County) located southwest of French Valley Airport.

Other Special Use Airspace: Special use airspace is defined as airspace where activities must be confined because of their nature or where limitations are imposed on aircraft not taking part in those activities. Although these areas are often reserved for military use and are designed to separate non-participating aircraft from military training operations, such as the MOAs and MTRs discussed above, they can also apply to other areas where noise reductions are desired.

In particular, locations surrounding wilderness areas and national wildlife refuges area also designated as special use airspace. As these areas fall under the definition of "National Park," all aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface of designated National Park areas per FAA regulations. FAA Advisory Circular 91-36C defines the "surface" as the highest terrain within 2,000 feet laterally of the route of flight or the uppermost rim of a canyon or valley. There are several wilderness areas within Riverside County. Joshua Tree National Park being the largest, it is in the vicinity of Chiriaco Summit Airport, Jacqueline Cochran Regional Airport, Desert Center Airport and Palm Springs International Airport. Other restricted airspace over wildernesses include Anza-Borrego State Park and the San Mateo Canyon, Santa Rosa, San Jacinto, Agua Tibia and San Gorgonio Wilderness Areas. (See RCALUC Compatibility Plan Document, page I-3). See Figure 4.15.22 (Special Use Airspace in Riverside County).

F. Other Noise Sources

Stationary Noise Sources: Stationary noise sources present in residential areas include HVAC equipment and maintenance equipment such as leaf-blowers and gasoline-powered lawnmowers. Another stationary noise source is amplified sound, which includes noise from personal or home audio equipment, automotive audio equipment, outdoor loudspeakers, such as those used for paging, and amplified sound at music or theatrical performances. Because this sound typically includes music or speech, it is potentially more detectable and more annoying than other sounds of the same noise level. Conditional use permits, as well as the Riverside County Noise Ordinance (No. 847) establishes limitations on time and magnitude of noise for these sources.

Commercial uses often include larger, rooftop-mounted HVAC equipment. The motors, pumps and fans that cool and heat buildings produce point-source noise that most directly affects adjacent land uses. Frequently, this

equipment includes components of pure tone noise from the rotational frequency of motors. Although noise levels are generally low from these sources, the fact that such sources may operate continuously and may include pure tones that make them audible at a substantial distance creates potential for conflict. Riverside County ordinances, such as No. 348 (Zoning Code) and No. 847 (Regulating Noise) generally address these conflicts.

Agricultural Activity Noise: Agricultural operations may produce significant noise during planting and harvesting times from equipment operation. Agricultural noise may be disturbing to neighboring residential areas, a common phenomena as urban development intrudes into agricultural lands. Agricultural areas may also have noise-sensitive uses, which can be disturbed by high noise levels as is the case with the raising of animals and poultry. Therefore, the potential for noise conflicts exists at the outskirts of urban areas where agricultural operations and urban development abut or intermix.

Industrial and Other Major Noise Sources: Industrial land uses can be associated with a variety of noise impacts, particularly due to stationary sources. Industrial uses can generate noise during normal operations from sources such as shipping and loading facilities, concrete crushing facilities, recycling activities and other large mechanical or hydraulic equipment use. Other stationary sources of noise include natural gas extraction facilities, water treatment facilities and mining activities that are located throughout Riverside County.

Riverside County has several major industrial and commercial sites that generate relatively high noise levels that potentially affect their respective neighborhoods. These sources include the following:

- Numerous industrial sites in the Mira Loma area.
- Desert Hills truck stop/inspection facility on I-10 in Cabazon.
- Numerous auto body shops on Mission Avenue in the Rubidoux area.
- Wind Energy Conversion Systems ("wind mills") in San Gorgonio Pass near Palm Springs.
- Lake Elsinore Storm Stadium (sports arena), located at 500 Diamond Drive in Lake Elsinore.
- El Sobrante Landfill near Corona at 10910 Dawson Canyon Road.
- All-American Asphalt mining, located at 400 East Sixth Street in Corona.
- 3M Mining, located at 18750 Minnesota Road in Corona.
- Approximately 18 mining operations in the Coachella Valley area.
- Gas line pressure release valves in various locations throughout the county.
- Water wells in various locations throughout the county.

U.S. Marine Corps Bob Stump Training Range Complex (BSTRC)
1. Primary mission—training support for all aspects of Marine Corps tactical aviation
2. CMAGR and BMGR West provide the core training capabilities and capacities
3. ECR and YPG provide supplementary training capabilities and capacities
4. Close to Marine and Navy air stations, Camp Pendleton, and aircraft carriers
5. Year-round flying weather

R-2501N
MCAGCC
R-2501W
R-2501S
R-2501E
Twentynine Palms Expeditionary Airfield

U.S. Marine Corps Air Ground Combat Center at Twentynine Palms (MCAGCC)
1. Primary mission—training combined elements of Marine Air Ground Task Forces
2. Premier pre-deployment training range for Marine expeditionary forces
3. Current training capacity – expeditionary units of up to 3,000 troops
4. Proposed expansion would train expeditionary brigades of 15,000 troops
5. Ranges support combined arms training of infantry, armored, air, and support units
6. Fixed-wing aircraft and helicopter aircrews trained in support of ground forces

U.S. Marine Corps Base (MCB) Camp Pendleton
1. Primary mission—training in amphibious and air assault and ground combat
2. Five amphibious assault landing beaches and inland ground combat ranges
3. Aviation training emphasis is on helicopter air assault and support of ground forces
4. MCAS Camp Pendleton is within the MCB

Camp Pendleton
R-2503C
R-2503B
R-2503A
R-2503D
Marine Corps Air Station Camp Pendleton

U.S. Marine Corps Chocolate Mountain Aerial Gunnery Range (CMAGR)
1. Primary mission—training in air-to-ground attack and air-to-air combat
2. Premier Marine Corps range for air-to-ground training with live explosive ordnance
3. Emphasis on training individual aircrews in flights of one, two, and four aircraft
4. Supports training with most types of conventional explosive and inert ordnance
5. Realistic air-to-ground targets in diverse terrain settings
6. Landing zones, observation posts, other ground sites that support air-ground training
7. Supports large force-on-force aviation training exercises that use all of the BSTRC
8. Hosts Navy SEALs desert training

R-2507N
R-2507E
R-2507S
Kitty Baggage Range
Shade Tree Range
R-2510B
R-2510A
Inkey Barley Range
R-2512
Loom Lobby Range
Naval Air Facility El Centro

U.S. Army Yuma Proving Ground (YPG)
1. Primary mission—testing ground combat and aircraft weapons systems
2. Restricted airspace available for air combat training when not needed for testing
3. Air-to-ground target range with limited training capability
4. Ground units deployment areas to support air combat training

R-2306D
R-2308C
R-2306B
R-2306C
R-2308B
R-2308A
Yuma Proving Ground
R-2306A
R-2309
R-2307
R-2306E
Laguna Army Airfield
R-2311

Luke Air Force Base

U.S. Marine Corps Barry M. Goldwater Range West (BMGR West)
1. Primary mission—training in air-to-air, air-to-ground, and surface-to-air combat
2. Instrumented air combat training range (Tactical Aircrew Combat Training System)
3. Numerous ground units deployment areas to support air combat training
4. Air-to-ground range supporting urban combat operations training
5. Realistic battlefield settings in diverse terrain – limited to inert ordnance
6. Individual aircrew training as well as large-scale air-ground combat exercises
7. Core range for large force-on-force aviation training exercises hosted at the BSTRC

Marine Corps Air Station Yuma
Barry M. Goldwater Range West
R-2301W
R-2301E
Barry M. Goldwater Range East
R-2305
R-2304

Marine Corps Air Station Miramar

MC Recruit Depot San Diego

Marine Corps Recruit Depot
1. Primary mission – basic training to make civilians into Marines
2. Individual and small unit training

Naval Air Station North Island
Naval Amphibious Base (NAB) Coronado

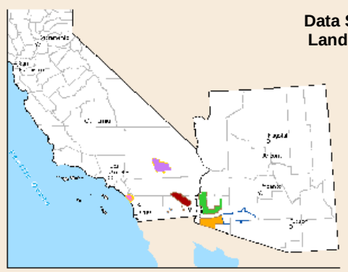
U.S. Navy El Centro Ranges (ECR)
1. Primary mission—training in air-to-air and air-to-ground combat
2. Four small air-to-ground ranges with basic training capabilities
3. Limited to inert ordnance
4. Restricted airspace can be scheduled to support CMAGR missions

Military Airfield
Bob Stump Training Range Complex
Other Marine Corps Range
Other DoD Range

Special Use Airspace
Restricted Airspace
Military Operations Area / Air Traffic Control Assigned Airspace

50 Mile Distance from CMAGR
100 Mile Distance from CMAGR
150 Mile Distance from CMAGR
200 Mile Distance from CMAGR
State Boundary

BMGR West - Barry M. Goldwater Range West
BSTRC - Bob Stump Training Range Complex
ECR - El Centro Ranges
MCAGCC - Marine Corps Air Ground Combat Center
MCAS - Marine Corps Air Station
MCB - Marine Corps Base
YPG - Yuma Proving Ground



Data Source: US Department of Navy, CMAGR Land Withdrawl Draft LEIS, Figure 3-13 (2010)

Figure 4.15.18

\\agency\Imagis\Projects\Planning\Safety_Element\Airports.mxd

December 16, 2013

0 20 40 Miles

MILITARY AIRSPACE OVER SOUTHERN CALIFORNIA

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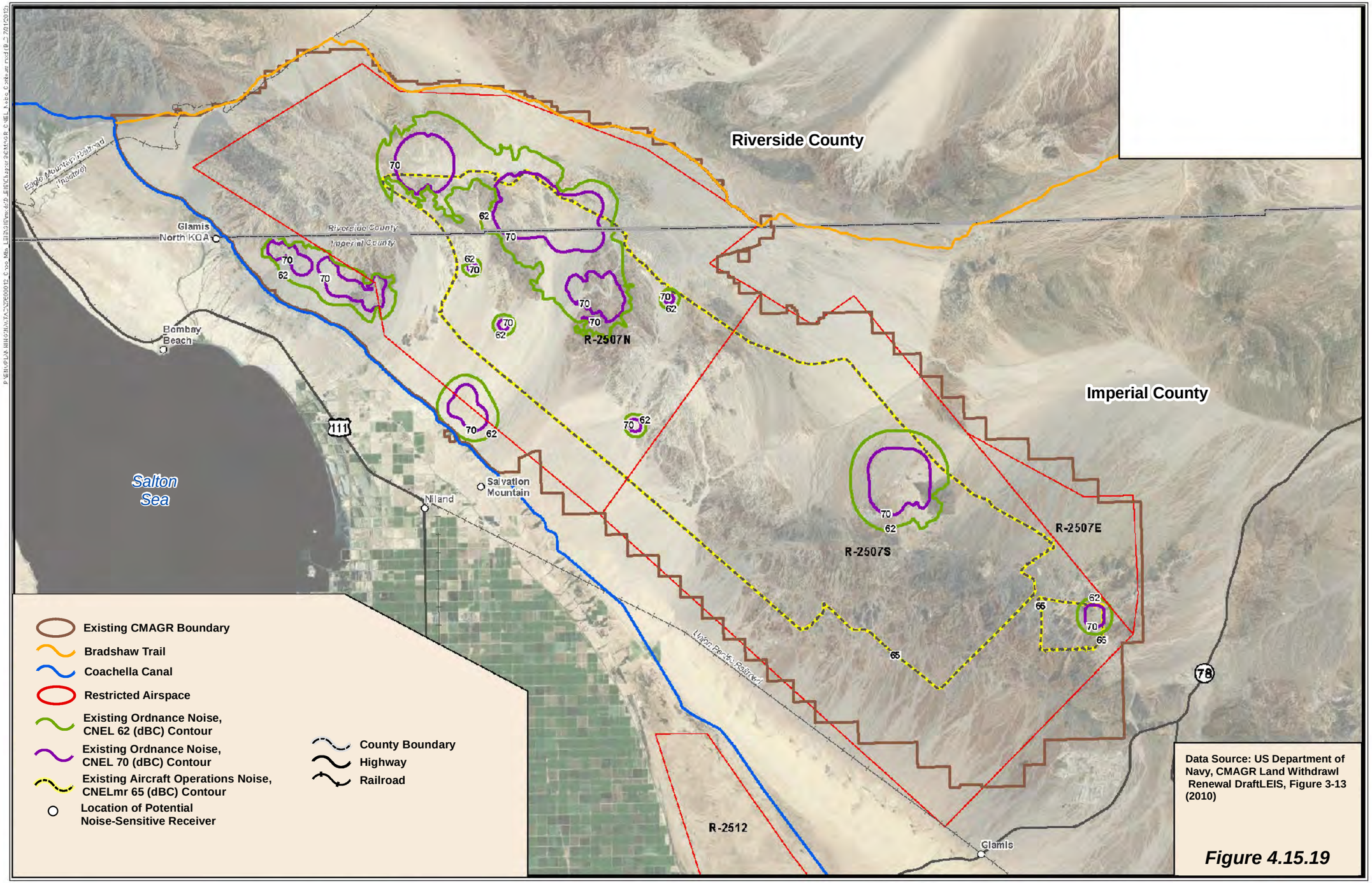

Figure 4.15.19

December 16, 2013

Miles
0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

CHOCOLATE MOUNTAIN AERIAL GUNNERY RANGE (CMAGR) EXISTING NOISE CONTOURS

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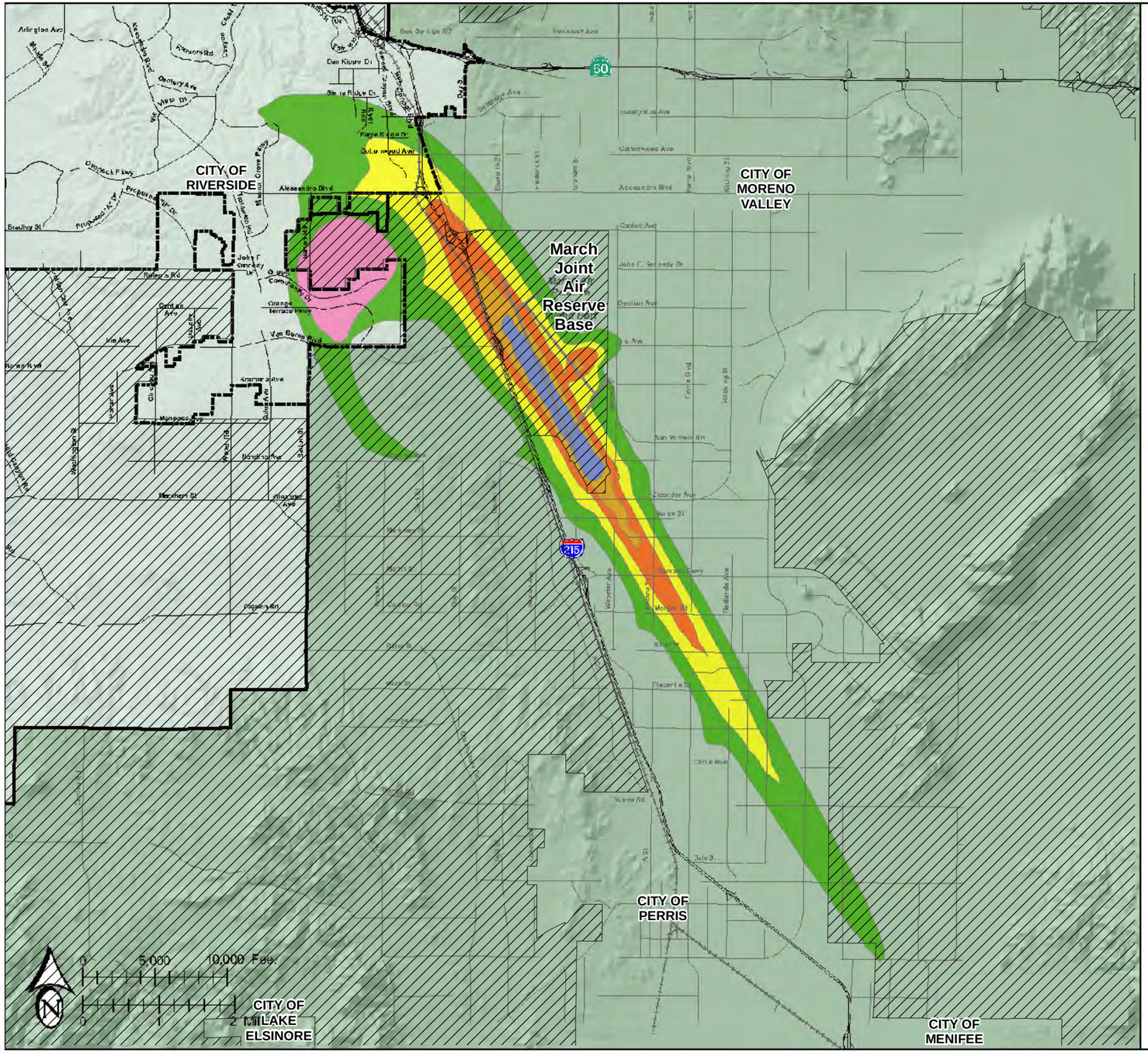

Noise Contours

- 80 CNEL
- 75 CNEL
- 70 CNEL
- 65 CNEL
- 60 CNEL
- 55 CNEL
- Riverside City Boundary
- Unincorporated County Land

Data Source: City of Riverside
2025 General Plan (2010)

Figure 4.15.20

December 16, 2013

Miles
0 1.25 2.5

RIVERSIDE COUNTY PLANNING DEPARTMENT

MARCH JOINT AIR RESERVE BASE
EXISTING NOISE CONTOURS

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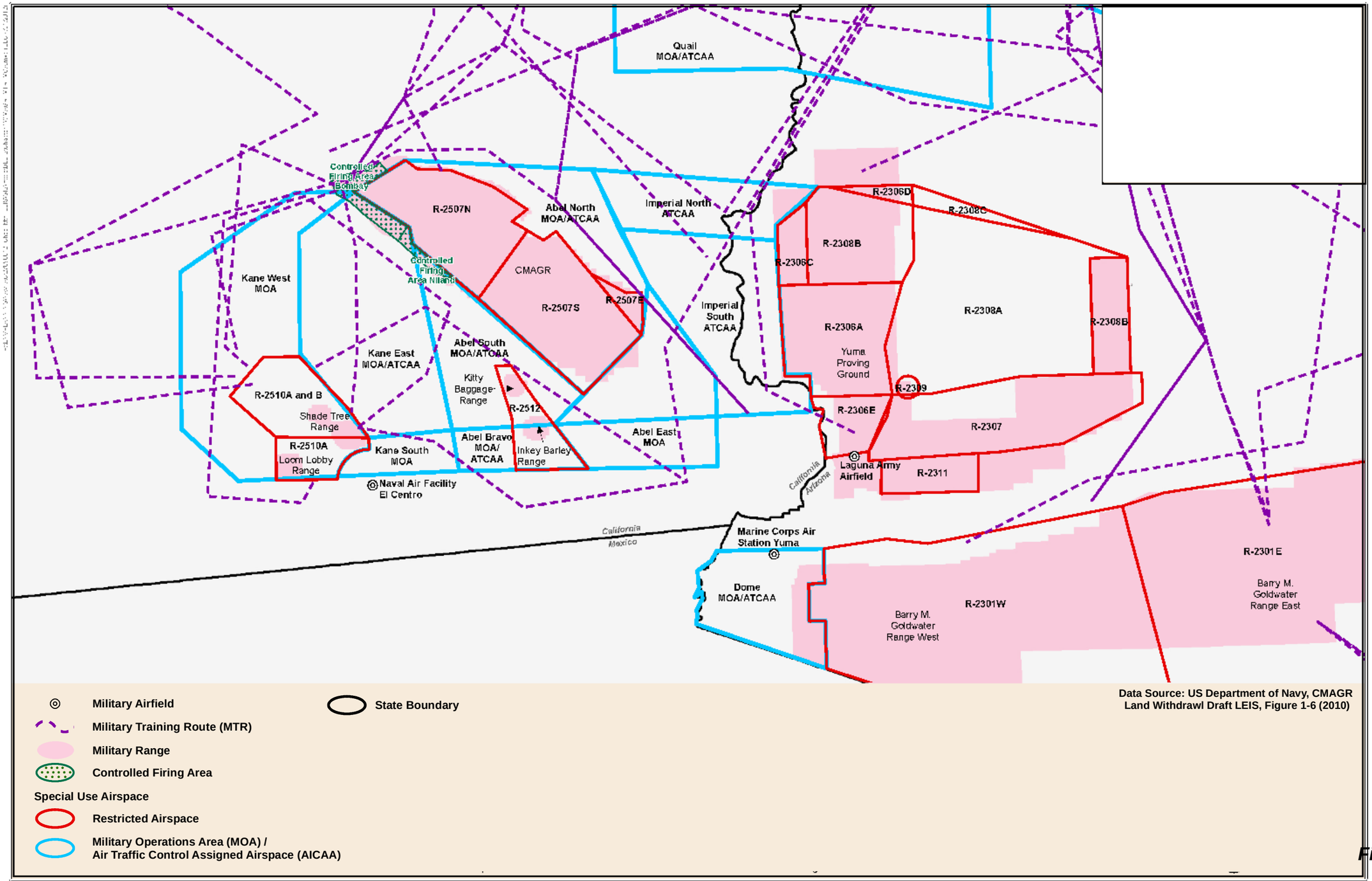

Figure 4.15.21

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December 16, 2013

0 15 30 Miles

MILITARY TRAINING AIRSPACE IN THE CMAGR OPERATING AREA

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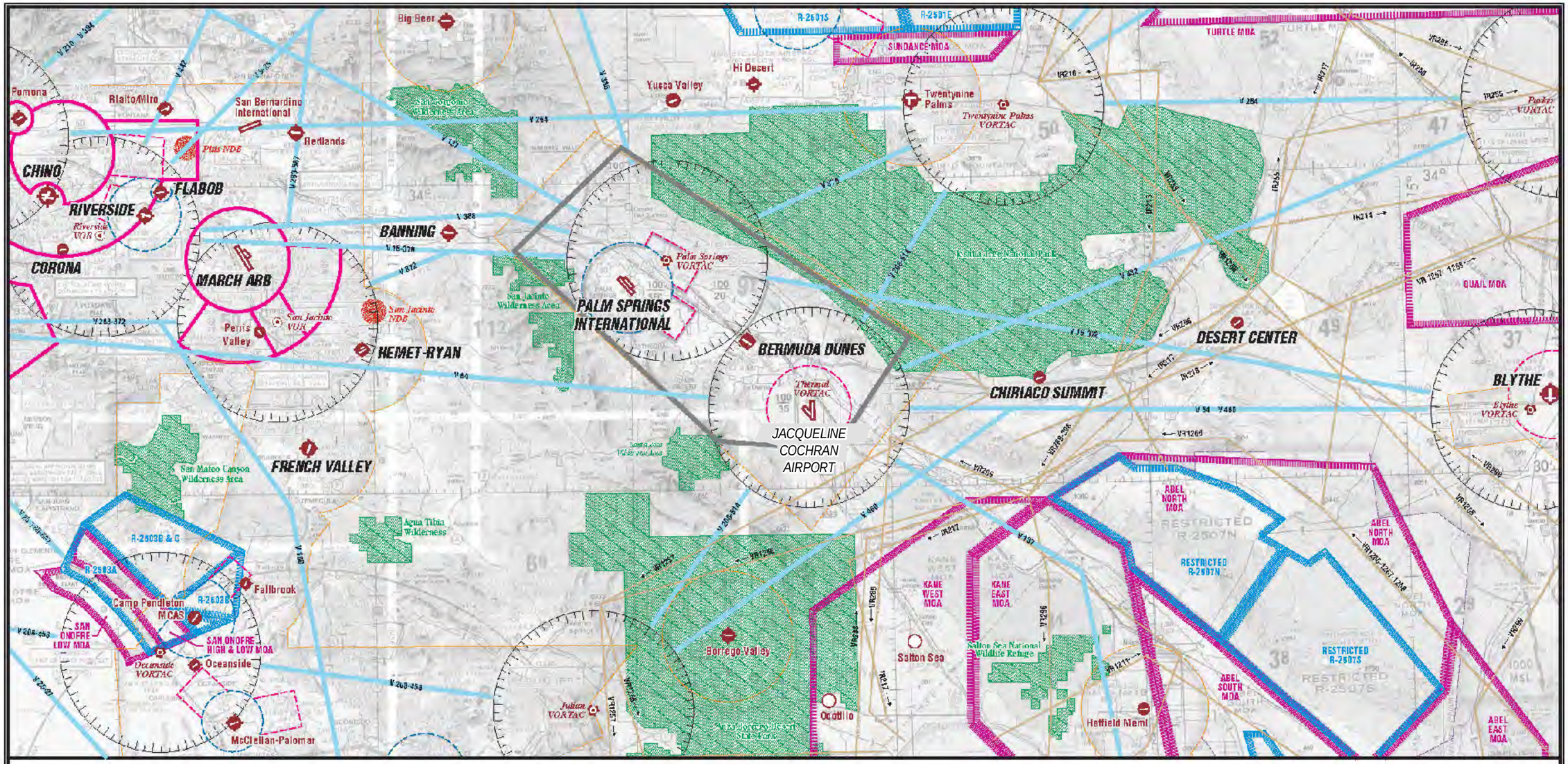

Airport with hard-surfaced runways 1,500' too 8,069' in length

Airport with other than hard-surfaced runways

Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'

Wilderness Areas

Non-Directional Radiobeacon (NDB)

Compass Rose

Military Operations Area (MOA)

Prohibited, Restricted, Warning and Alert Areas

VOR

VORTAC

Military Training Routes

Victor Airways

Class C Airspace

Class D Airspace

Class E Airspace

Class E Airspace with floor 700' above surface

Class E Airspace with floor 1200' or greater above surface that abuts Class G Airspace

Terminal Radar Service Area (TRSA)

Data Source: Riverside County Airport Lan Use Comission, Riverside County Airport Land Use Compatibility Plan Document, Map 2 (2004)

Figure 4.15.22

December 16, 2013

Miles

0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

SPECIAL USE AIRSPACE OVER RIVERSIDE COUNTY

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Recreational Activity Noise: Recreational lands and wildlife habitat are also impacted by noise. Recreational uses include both those that are quiet by nature and those that are noisy by nature. Quiet recreational uses include activities such as hiking, bicycling and horseback riding. Noise-generating recreational uses include sports park activities and off-road vehicle recreational areas. Uncontrolled use of off-road vehicles in parks and open space lands degrade recreational opportunities for Riverside County's residents. Noise intrusion into wildlife habitat drives off wildlife and with prolonged use, may effectively reduce the amount of land used as habitat by various species. As described earlier under military noise, aircraft overflight noise can also affect open space values and, as a result, FAA regulations prohibit flight over National Parks and Wilderness Areas below 2,200 feet.

In addition to the noise sources described above, there are several noise sources within the unincorporated Riverside County area that are considered to have potential noise impacts to their immediate neighborhoods. These recreational noise sources include the following:

- Mike Rahauges Shooting Range near Norco on River Road off I-15 at Second Street.
- Rice Valley Dunes off-road vehicle park, 5 miles south of Rice Valley, exit on Highway 62.
- Ira G. Long Off-road Vehicle Park, in Palm Springs.
- Water activities on the Colorado River, particularly the operation of recreational watercraft.

4.15.3 Policies and Regulations Addressing Noise

This section covers the various federal, state and local regulations, policies and standards that exist (or are proposed) to address noise. Many of these regulations serve to reduce potential adverse impacts caused by noise within Riverside County. These impacts and mitigation effects are discussed later in Section 4.15.6.

A. State and Federal Regulations

1. Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, the Office promulgated the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare and the environment. To aid compliance, the EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" ("EPA Levels" herein). The EPA Levels document recommends that the L_{dn} should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the EPA identifies 5 dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA L_{dn} (meaning, there would not be a noticeable increase in adverse community reaction for an increase of 5 dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as

advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings from prior years remain in place providing guidance for more individualized control of specific issues by federal, state and local government agencies.

2. Federal Transit Administration

The Federal Transit Administration (FTA) has developed methodology and significance criteria to evaluate incremental noise impacts from surface transportation modes (i.e., on-road motor vehicles and trains) as presented in Transit Noise Impact and Vibration Assessment (FTA Guidelines). It includes incremental noise impact criteria based on EPA findings and studies of annoyance levels in communities affected by transportation noise. The FTA extended the EPA's 5 dBA incremental impact criterion to ambient levels above 55 dBA. It found that as baseline ambient levels increase, it takes smaller and smaller increments to trigger increases in community annoyance. The FTA also developed criteria for judging the significance of vibration impacts based on annoyance levels expected in communities exposed to vibration from transportation sources and construction activity. The applicable standards that were used in relation to this programmatic EIR are as follows.

Standards for Substantial Noise Increases: In addition to standards for "excessive" noise, criteria are also necessary for establishing when an *increase* in noise levels will result in a significant impact. For this type of analysis, this section uses the FTA's incremental criteria for noise exposure, which become progressively more stringent as the baseline noise levels increase. This is appropriate given the logarithmic nature of sound (i.e., sound intensity increases exponentially as the decibel value increases). As a result, these criteria are more protective of communities with high noise exposure.

Table 4.15-H: Incremental Noise Impact Criteria for Noise-Sensitive Uses

Existing Noise Exposure (CNEL, in dBA)	Allowable Project Noise Exposure (CNEL, in dBA)	Allowable Combined Noise Exposure (CNEL, in dBA)	Allowable Noise Exposure Increment (CNEL, in dBA)
55	55	58	3
60	57	62	2
65	60	66	1
70	64	71	1
75	65	75	0

Source: Federal Transit Administration, 1995.

Standards for Excessive Groundborne Vibration or Noise: The FTA's groundborne vibration impact thresholds for sensitive buildings, residences and institutional land uses are shown in Table 4.15-I (Groundborne Vibration and Noise Impact Criteria), below. It should be noted that even with these standards, vibration-sensitive manufacturing or research would require additional, detailed (site-specific) evaluation to define the applicable vibration levels. Generally, however, vibration-sensitive equipment is not affected by groundborne sound waves (or noise levels).

The increase in ambient noise levels expected over time is attributable almost entirely to traffic-related sound in most areas of the county. As identified in Table 4.15-H, above, where the baseline L_{dn} is less than 60 dBA, a permanent increase in roadway traffic noise levels of 3 dBA over baseline ambient noise levels is considered to be substantial and, therefore, significant. Where the baseline L_{dn} is between 60 dBA and 65 dBA, a permanent

increase in roadway traffic noise levels of 2 dBA over baseline ambient noise levels is considered to be substantial and, therefore, significant. And, where the baseline L_{dn} is between 65 dBA and 70 dBA, a permanent increase in roadway traffic noise levels of 1 dBA over baseline ambient noise levels is considered to be substantial and, therefore, significant. This means, for example, that in residential areas with a baseline ambient noise level of 50 dBA L_{dn}, a less-than 5 dBA increase in noise levels would produce a minimal increase in community annoyance levels, while at 70 dBA L_{dn}, only a 1 dBA increase can be accommodated before a significant annoyance increase results.

Table 4.15-I: Groundborne Vibration and Noise Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 micro inch/sec)[1]		Groundborne Noise Impact Levels (dB re 20 microPascals)	
	Frequent Events[2]	Occasional or Infrequent Events[3]	Frequent Events[2]	Occasional or Infrequent Events[3]
Category 1: Buildings where low ambient vibration is essential for interior operations	65 VdB	65 VdB	NA[4]	NA[4]
Category 2: Residences and buildings where people normally sleep	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use (schools, churches, libraries, etc.)	75 VdB	83VdB	40 dBA	48 dBA

Footnotes:
1. This criterion limit is based on levels acceptable for most moderately sensitive equipment, e.g., optical microscopes.
2. "Frequent Events" are defined as more than 70 vibration events per day.
3. "Occasional or Infrequent Events" are defined as fewer than 70 vibration events per day.
4. Does not apply (N/A): vibration-sensitive equipment is not sensitive to groundborne noise.

Source: U.S. Dept. of Transportation, Federal Transit Administration, "Transit Noise and Vibration Impact Assessment," May 2006.

3. Federal Aviation Administration

The primary regulation used by the Federal Aviation Administration (FAA) to address "planning for aviation noise compatibility on and around airports" is 14 CFR Part 150. These regulations were issued in 1981 under the authority of the Aviation Safety and Noise Abatement Act of 1979 (49 United States Code Appendix 2104c). In addition to airports, this regulation also addresses freestanding heliports as well. The aim of these regulations is to provide a "balanced approach for mitigating the noise impacts of airports upon their neighbors while protecting or increasing both airport access and capacity, as well as maintaining the efficiency of the national aviation system."

Among other things, these regulations prescribe the methodology governing development, submission and review of airport noise exposure maps and noise compatibility programs for communities near airports. The noise exposure maps use average annual L_{dn}/CNEL contours around the airport as the primary noise descriptor. Per FAA standards, all land uses are considered compatible when aircraft noise effects are less than 65 dBA L_{dn}/CNEL. At higher noise exposures, increasing restrictions are applied to development within the aircraft noise contours depending upon the noise-sensitivity of the land use and the degree of noise attenuation required in the structures' interior spaces.

4. Federal Highway Works Administration

Vehicular noise is the most prevalent source of noise disturbances within Riverside County. The Federal Highway Works Administration (FHWA) implements a number of noise-related policies and procedures in order to protect the health, safety and welfare of the public from highway noise. Title 23 of the Code of Federal Regulations (CFR) establishes noise abatement criteria and requirements for information to be given to local

officials for use in the planning and design of approved highways. Part 772, in particular, establishes procedures for noise studies and noise reducing measures. In simple terms, the FHWA adheres to a 67 dBA noise level standard for highway projects.

5. State Regulations

California Building Standards Code: The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control and noise insulation. Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code includes acoustical regulations for exterior-to-interior sound insulation, as well as for sound isolation between adjacent spaces of various occupied units. Specifically, Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn}, with windows closed, in any habitable room for general residential uses.

California Noise Insulation Standards: The California Noise Insulation Standards (CCR Title 25 Section 1092) establish uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses and dwellings other than detached single-family dwellings. Specifically, Title 25 specifies that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn}/CNEL (i.e., the same levels that the EPA recommends for residential interiors) in any habitable room of a new dwelling. An acoustical study must be prepared for proposed multiple unit residential and hotel/motel structures where outdoor L_{dn}/CNEL is 60 dBA or greater. The study must demonstrate that the design of the building would reduce interior noise to 45 dBA L_{dn}/CNEL or lower. Because noise levels can increase over time in developing areas, Title 25 also specifies that dwellings are to be designed so that interior noise levels will meet this standard for at least ten years from the time of building permit application.

OPR General Plan Guidelines: Though not adopted by law, the 2003 California General Plan Guidelines, published by the California Governor's Office of Planning and Research (OPR), provides guidance for the compatibility of projects within areas of specific noise exposure. The designation of a level of noise exposure as "normally acceptable" for a given land use category implies that the exterior and interior noise levels would be acceptable to the occupants without the need for any noise abatement measures outside or special structural acoustic treatment for the interior spaces. The Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide local communities with some flexibility in setting local noise standards to allow for the variability in community preferences. Findings presented by the EPA in its EPA Levels document also influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., L_{dn} or CNEL) and in the upper limits for the "normally acceptable" outdoor exposure of noise-sensitive uses. These principals have been adopted into Riverside County's General Plan Noise Element as well. See discussion of General Plan Table N-1 (under Table 4.15-K, below), for additional information.

California Vehicle Code: Recent studies show that the most objectionable feature of traffic noise is the sound produced by vehicles equipped with illegal or faulty exhaust systems. In addition, such vehicles are often operated in a manner that causes tire squeal and excessively loud exhaust noise. A number of California vehicle noise regulations can be enforced by local authorities, as well as the California Highway Patrol. These include Sections 23130, 23130.5, 27150 and 38275 of the California Vehicle Code (CVC), as well as excessive speed laws, which may also be applied to curtail traffic noise. These sections discuss the following:

- CVC Sections 23130 and 23130.5 establish maximum noise emission limits for the operation of all motor vehicles at any time under any conditions of grade, load, acceleration or deceleration.

- CVC Section 27150 requires motor vehicles to be equipped with an adequate muffler to prevent excessive noise.

- CVC Section 38275 requires off-highway motor vehicles to be equipped with an adequate muffler to prevent excessive noise.

The California Highway Patrol and the California Department of Health Services (as well as local health departments) are available to aid local authorities in code enforcement and training pursuant to proper vehicle sound level measurements.

B. Riverside County Regulations

1. Airport Land Use Compatibility Plans

The Riverside County Airport Land Use Commission (ALUC) adopted the Riverside County Airport Land Use Compatibility Plan (ALUCP) Policy Document which establishes land use compatibility planning and policies near airports throughout the county. This policy document replaced compatibility plans (ALUCPs) for individual airports adopted by ALUC at various times from 1974 through 1998. Individual airports covered under the new master ALUCP have varying adoption dates (the earliest new adoption date was 2005). In cases where the master ALUCP has not been adopted yet, the given airport would continue to implement its existing individual airport compatibility plan.

These ALUCP documents promote compatibility between airports and the land uses that surround them. As required by California State law, either the policy document or an earlier ALUCP has been adopted for all of the public-use and military airports in Riverside County, while preparation of compatibility plans for private-use airports is at the option of the ALUC. It should be noted that the Chino Airport is located in San Bernardino County, thus only the portion of that airport's influence area that extends into Riverside County is addressed herein.

Within the County of Riverside, noise levels and development around airports are also addressed under General Plan Policy N 7.3, which states, "Prohibit new residential land uses, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of any currently operating public-use or military airports. The applicable noise contours are as defined by the Riverside County Airport Land Use Commission and depicted in [General Plan] Appendix L, as well as in the applicable Area Plan's Airport Influence Area section."

Also, it should also be noted that the table of noise level and compatibility standards issued as part of the FAA Part 150 regulations includes a footnote that specifies, "The designations in this table do not constitute a county determination that any use of land is acceptable or unacceptable under federal, state or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with local land use authorities. FAA determinations under Part 150 are guidelines and are not intended to substitute for land uses determined to be suitable by local authorities in response to locally determined needs and values in achieving noise compatible land uses."

2. County Ordinance No. 847 - Regulating Noise

Ordinance No. 847 addresses sound disturbances and sets various acceptable noise limits. Though not explicitly used to set CEQA thresholds, the ordinance does "establish countywide standards regulating noise," although a number of activities and uses are exempt from the regulations. Table 4.15-J (County Ordinance No. 847 Sound Level Standards), below, lists the sound level standards associated with various land uses under Ordinance No. 847. The ordinance states that "no person shall create any sound...on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1 [reproduced as Table 4.15-J herein]." The ordinance also sets a series of additional "special sound source standards" that apply to motor vehicles, power tools and equipment, audio equipment, sound amplifying equipment and live music.

Accordingly, this ordinance sets various limits for acceptable noise levels depending on the type of land use. For open space and residential areas, the acceptable nighttime threshold is much lower (45 dB L_{max}) than for areas used for commercial and industrial areas (55 – 75 dB L_{max}). Activities in any area that surpass applicable thresholds would be in violation of the ordinance and thus subject to sanction. Table 4.15-J, below, shows all of the ordinance's sound levels.

Table 4.15-J: Riverside County Ordinance No. 847 Sound Level Standards

General Plan Land Use Information				Maximum Decibel Level (dB L_{max})	
Foundation Component	Land Use Designation		Density (AC) or FAR*	7 am – 10 pm	10 pm – 7 am
COMMUNITY DEVELOPMENT	EDR	Estate Density Residential	2 ac min. lot	55	45
	VLDR	Very Low Density Residential	1 ac min. lot	55	45
	LDR	Low Density Residential	0.5 ac min. lot	55	45
	MDR	Medium Density Residential	2 - 5 du/ac	55	45
	MHDR	Medium-High Density Residential	5 - 8 du/ac	55	45
	HDR	High Density Residential	8 - 14 du/ac	55	45
	VHDR	Very High Density Residential	14 - 20 du/ac	55	45
	HHDR	Highest Density Residential	20+ du.ac	55	45
	CR	Commercial Retail	0.20 - 0.35 FAR	65	55
	CO	Commercial Office	0.25 - 1.0 FAR	65	55
	CT	Commercial Tourist	0.20 - 0.35 FAR	65	55
	CC	Community Center	5 - 40 du/ac 0.10 - 0.30 FAR	65	55
	LI	Light Industrial	0.25 - 0.60 FAR	75	55
	HI	Heavy Industrial	0.15 - 0.50 FAR	75	75
	BP	Business Park	0.25 - 0.60 FAR	65	45
	PF	Public Facilities	≤ 0.60 FAR	65	45
	SP	Specific Plan-Residential		55	45
		Specific Plan-Commercial		65	55
		SP - Light Industrial		75	55
		SP - Heavy Industrial		75	75
RURAL COMMUNITY	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low Density Residential	1 AC	55	45
	LDR	Low Density Residential	0.5 AC	55	45
RURAL	RR	Rural Residential	5 AC	45	45
	RM	Rural Mountainous	10 AC	45	45
	RD	Rural Desert	10 AC	45	45
AGRICULTURE	AG	Agriculture	10 AC	45	45

General Plan Land Use Information				Maximum Decibel Level (dB L_{max})	
Foundation Component	Land Use Designation		Density (AC) or FAR*	7 am – 10 pm	10 pm – 7 am
OPEN SPACE	C	Conservation		45	45
	CH	Conservation Habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 ac min. lot	45	45
	W	Watershed		45	45
	MR	Mineral Resources		75	45

* Density (min. lot size per dwelling unit or du per acre); Floor-Area Ratio (FAR) (buildable area per net lot acreage).
Source: Riverside County Ordinance No. 847.1, Regulating Noise. As amended through June 19, 2007.

3. Standards from the Riverside County General Plan

Within the existing Riverside County General Plan, five policies directly address a noise threshold or standard, including Policies N 1.3, 14.1 and 14.9, which address acceptable noise levels for new development, particularly residential uses. Policy N 4.1 addresses stationary source noise levels and Policy LU 16.10 addresses noise coming from wind turbines. In addition, Policy N 16.3 addresses vibration levels and Policy N 7.3 addresses aviation noise contours. See the full texts of these policies below.

In addition to these policies, the General Plan Noise Element also includes Table N-1, "Land Use Compatibility for Community Noise Exposure" and Table N-2, "Stationary Source Land Use Noise Standards." Table N-1, which is reproduced in Table 4.15-K, below, indicates the acceptable, provisional and unacceptable noise levels associated with various land uses. The guidelines also provide adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise and its assessment of the relative importance of noise pollution.

General Plan Table N-2 (see Table 4.15-L, below) sets standards for residential land uses in conjunction with General Plan Policy N 2.3. The table also notes, however, that these are only "preferred standards" and that the final decision is made by the Riverside County Planning Department and Office of Public Health.

C. Existing Riverside County General Plan Policies

The Riverside County General Plan Noise Element addresses noise and noise sources within the county through these existing policies below. Noise issues are also addressed directly or tangentially in several other Elements of the General Plan, also as indicated below.

1. Noise (N) Element Policies

Policy N 1.1: Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping or block walls shall be used.

Policy N 1.2: Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports.

Policy N 1.3: Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:

- Schools
- Rest homes
- Mental care facilities
- Libraries
- Places of worship
- Hospitals
- Long-term care facilities
- Residential uses
- Passive recreation uses

According to the State of California Office of Planning and Research General Plan Guidelines, an acoustical study may be required in cases where these noise-sensitive land uses are located in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.

Table 4.15-K: Land Use Compatibility for Community Noise Exposure (aka GP Table N-1)

Legend:	
Normally Acceptable:	Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable:	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditions will normally suffice. Outdoor environment will seem noisy.
Normally Unacceptable:	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.

	Clearly Unacceptable:	New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

Source: Riverside County General Plan, Table N-1 (from California Office of Noise Control), 2003.

Policy N 1.4: Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.

Policy N 1.5: Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors and noise-sensitive uses of Riverside County.

Policy N 1.6: Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses.

Policy N 1.7: Require proposed land uses, affected by unacceptably high noise levels, to have an acoustical specialist prepare a study of the noise problems and recommend structural and site design features that will adequately mitigate the noise problem.

Policy N 1.8: Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines. Please see the Wind Energy Conversion Systems section for more information.

Policy N 2.1: Create a County Noise Inventory to identify major noise generators and noise sensitive land uses and to establish appropriate noise mitigation strategies.

Policy N 2.2: Require a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects within noise impacted areas to mitigate existing noise.

Policy N 2.3: Mitigate exterior and interior noises to the levels listed in the table below [i.e., General Plan Table N-2] to the extent feasible for stationary sources.

Table 4.15-L: Stationary Source Land Use Standards (aka General Plan Table N-2)

Land Use	Interior Standards*	Exterior Standards*
Residential		
10:00 pm to 7:00 am	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 am to 10:00 pm	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

* These are only preferred standards; final decision will be made by the Riverside County Planning Department and the Office of Public Health.
Source: Riverside County General Plan, Table N-2, 2003.

Policy N 3.1: Protect Riverside County's agricultural resources from noise complaints that may result from routine farming practices through the enforcement of the Riverside County right-to-farm ordinance.

Policy N 3.2: Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene to help determine effective noise mitigation strategies in noise-producing areas.

Policy N 3.3: Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.

Policy N 3.4: Identify point-source noise producers such as manufacturing plants, truck transfer stations and commercial development by conducting a survey of individual sites.

Policy N 3.5: Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noise-sensitive land uses.

Policy N 3.6: Discourage projects that are incapable of successfully mitigating excessive noise.

Policy N 3.7: Encourage noise-tolerant land uses, such as commercial or industrial, to locate in areas already committed to land uses that are noise-producing.

Policy N 4.1: Prohibit facility-related noise received by any sensitive use from exceeding the following worst-case noise levels:

a. 45 dBA-10-minute L_{eq} between 10:00 pm and 7:00 am.

b. 65 dBA-10-minute L_{eq} between 7:00 am and 10:00 pm.

Policy N 4.2: Develop measures to control non-transportation noise impacts.

Policy N 4.3: Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed and ensure that the recommended mitigation measures are implemented.

Policy N 4.4: Require that detailed and independent acoustical studies be conducted for any new or renovated land uses or structures determined to be potential major stationary noise sources.

Policy N 4.5: Encourage major stationary noise-generating sources throughout the County of Riverside to install additional noise buffering or reduction mechanisms within their facilities to reduce noise generation levels to the lowest extent practicable prior to the renewal of conditional use permits or business licenses or prior to the approval and/or issuance of new conditional use permits for said facilities.

Policy N 4.6: Establish acceptable standards for residential noise sources, such as, but not limited to, leaf blowers, mobile vendors, mobile stereos and stationary noise sources, such as home appliances, air conditioners and swimming pool equipment.

Policy N 4.7: Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source.

Policy N 4.8: Require that the parking structures, terminals and loading docks of commercial or industrial land uses be designed to minimize the potential noise impacts of vehicles on the site, as well as on adjacent land uses.

Policy N 5.1: Enforce the Wind Implementation Monitoring Program (WIMP).

Policy N 5.2: Encourage the replacement of outdated technology with more efficient technology with less noise impacts.

Policy N 6.1: Consider noise reduction as a factor in the purchase of County maintenance equipment and its use by County contractors and permittees.

Policy N 6.2: Investigate the feasibility of retrofitting current County-owned vehicles and mechanical equipment to comply with noise performance standards consistent with the best available noise reduction technology.

Policy N 6.3: Require commercial or industrial truck delivery hours be limited adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits.

Policy N 6.4: Restrict the use of motorized trail bikes, mini-bikes and other off-road vehicles in areas of the county except where designated for that purpose. Enforce strict operating hours for these vehicles in order to minimize noise impacts on sensitive land uses adjacent to public trails and parks.

Policy N 7.2: Adhere to applicable noise compatibility criteria when making decisions regarding land uses adjacent to airports. Refer to the Airports section of the Land Use Element (Page LU-32) and the Airport Influence Area sections of the corresponding Area Plans.

Policy N 7.4: Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.

~~**Policy N 9.3 (Previously N 8.3):** Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures.~~

~~**Policy N 9.7 (Previously N 8.7):** Require that field noise monitoring be performed prior to siting to any sensitive land uses along arterial roadways. Noise level measurements should be of at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels.~~

Policy N *9.1* (Previously N 8.1): Enforce all noise sections of the California Vehicle Code.

Policy N *9.2* (Previously N 8.2): Ensure the inclusion of noise mitigation measures in the design of new roadway projects in the county.

Policy N *9.3* (Previously N 8.3): Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures.

Policy N *9.4* (Previously N 8.4): Require that the loading and shipping facilities of commercial and industrial land uses, which abut residential parcels be located and designed to minimize the potential noise impacts upon residential parcels.

Policy N *9.5* (Previously N 8.5): Employ noise mitigation practices when designing all future streets and highways, and when improvements occur along existing highway segments. These mitigation measures will emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.

Policy N *9.6* (Previously N 8.6): Require that all future exterior noise forecasts use Level of Service C and be based on designed road capacity or 20-year projection of development (whichever is less) for future noise forecasts.

Policy N *9.7* (Previously N 8.7): Require that field noise monitoring be performed prior to siting to any sensitive land uses along arterial roadways. Noise level measurements should be of at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels.

Policy N *10.1* (Previously N 9.1): Encourage local and regional public transit providers to ensure that the equipment they operate and purchase is state-of-the-art and does not generate excessive noise impacts on the community.

Policy N *10.2* (Previously N 9.2): Encourage the use of quieter electric-powered vehicles.

Policy N *10.3* (Previously N 9.3): Encourage the development and use of alternative transportation modes including bicycle paths and pedestrian walkways to minimize vehicular noise within sensitive receptor areas.

Policy N *10.4* (Previously N 9.4): Actively participate in the development of noise abatement plans for freeways and rapid transit.

Policy N *11.1* (Previously N 10.1): Check all proposed projects for possible location within railroad noise contours using typical noise contour diagrams.

Policy N *11.2* (Previously N 10.2): Minimize the noise effect of rail transit (freight and passenger) on residential uses and other sensitive land uses through the land use planning process.

Policy N *11.3* (Previously N 10.3): Locate light rail and fixed rail routes and design rail stations in areas that are accessible to both residential and commercial areas, but also minimize noise impacts on surrounding residential and sensitive land uses.

Policy N *11.4* (Previously N 10.4): Install noise mitigation features where rail operations impact existing adjacent residential or other noise-sensitive uses.

Policy N *11.5* (Previously N 10.5): Restrict the development of new sensitive land uses to beyond the 65 decibel CNEL contour along railroad rights-of-way.

Policy N *12.1* (Previously N 11.1): Utilize natural barriers such as hills, berms, boulders, and dense vegetation to assist in noise reduction.

Policy N *12.2* (Previously N 11.2): Utilize dense landscaping to effectively reduce noise. However, when there is a long initial period where the immaturity of new landscaping makes this approach only marginally effective, utilize a large number of highly dense species planted in a fairly mature state, at close intervals, in conjunction with earthen berms, setbacks or block walls.

Policy N *13.1* (Previously N 12.1): Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N *13.2* (Previously N 12.2): Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N *13.3* (Previously N 12.3): Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:

a. Temporary noise attenuation fences;

b. Preferential location of equipment; and

c. Use of current noise suppression technology and equipment.

Policy N *13.4* (Previously N 12.4): Require that all construction equipment utilize noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Policy N *14.1* (Previously N 13.1): Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to the tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double-paned windows and dense construction materials.

Policy N *14.2* (Previously N 13.2): Continue to develop effective strategies and mitigation measures for the abatement of noise hazards reflecting effective site design approaches and state-of-the-art building technologies.

Policy N *14.3* (Previously N 13.3): Incorporate acoustic site planning into the design of new development, particularly large scale, mixed-use or master-planned development, through measures which may include:

a. Separation of noise-sensitive buildings from noise-generating sources.

b. Use of natural topography and intervening structure to shield noise-sensitive land uses.

c. Adequate sound proofing within the receiving structure.

Policy N *14.4* (Previously N 13.4): Consider and, when necessary, lower noise to acceptable limits, require noise barriers and landscaped berms.

Policy N *14.5* (Previously N 13.5): Consider the issue of adjacent residential land uses when designing and configuring all new, non-residential development. Design and configure on-site ingress and egress points that divert traffic away from nearby noise-sensitive land uses to the greatest degree practicable.

Policy N *14.6* (Previously N 13.6): Prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures.

Policy N *14.7* (Previously N 13.7): Assist the efforts of local homeowners living in high noise areas to noise attenuate their homes through funding assistance and retrofitting program development, as feasible.

Policy N *14.8* (Previously N 13.8): Review all development applications for consistency with the standards and policies of the Noise Element of the General Plan.

Policy N *14.9* (Previously N 13.9): Mitigate 600 square feet of exterior space to 65 dB CNEL when new development is proposed on residential parcels of 1 acre or greater.

Policy N *15.1* (Previously N 14.1): Minimize the potential adverse noise impacts associated with the development of mixed-use structures where residential units are located above or adjacent to commercial uses.

Policy N *15.2* (Previously N 14.2): Require that commercial and residential mixed-use structures minimize the transfer or transmission of noise and vibration from the commercial land use to the residential land use.

Policy N *15.3* (Previously N 14.3): Minimize the generation of excessive noise level impacts from entertainment and restaurant/bar establishments into adjacent residential or noise-sensitive uses.

Policy N *16.1* (Previously N 15.1): Restrict the placement of sensitive land uses in proximity to vibration-producing land uses.

Policy N *16.2* (Previously N 15.2): Consider the following land uses sensitive to vibration:

- Hospitals
- Concert halls
- Sensitive research operations
- Offices
- Residential areas
- Libraries
- Schools

Policy N *16.3* (Previously N 15.3): Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.

Policy N *17.1* (Previously N 16.1): Identify, quantify and map noise producers and provide noise contour diagrams as is practical.

Policy N *17.2* (Previously N 16.2): Identify and map noise-sensitive land uses throughout the county.

Policy N *17.3* (Previously N 16.3): Identify and map point-source noise producers such as surface mines, wind turbines, manufacturing plants, truck transfer stations, active recreational facilities and amphitheaters.

Policy N *18.1* (Previously N 17.1): Maintain baseline information on an ongoing basis regarding ambient and stationary noise sources.

Policy N *18.2* (Previously N 17.2): Monitor and update available data regarding the community's existing and projected ambient stationary noise levels.

Policy N *18.3* (Previously N 17.3): Assure that areas subject to noise hazards are identified, quantified and mapped in a form that is available to decision makers.

Policy N *18.4* (Previously N 17.4): Develop and maintain a detailed, comprehensive noise data base.

Policy N *18.5* (Previously N 17.5): Develop and update county noise inventories using the following steps.

a. Identify noise sources and noise-sensitive land uses.

b. Continue to identify various agency responsibilities, review noise complaint files and conduct noise surveys and monitoring, as needed.

Policy N *18.6* (Previously N 17.6): Identify those areas of the county affected by high noise levels.

Policy N *18.7* (Previously N 17.7): Evaluate current land use to identify potential noise conflict areas.

Policy N *18.8* (Previously N 17.8): Gather activity operations' data of noise sources; prepare analytical noise exposure models to develop existing and projected noise contours around major noise sources down to 50 CNEL.

Policy N *18.9* (Previously N 17.9): Encourage greater involvement of other County departments in the identification, measurement and reduction of noise hazards throughout the county, including: Building and Safety Department, Aviation Department and the Department of Public Health-Office of Industrial Hygiene.

Policy N *19.1* (Previously N 18.1): Provide information to the public regarding the health effects of high noise levels and means of mitigating such levels.

Policy N *19.2* (Previously N 18.2): Cooperate with industry to develop public information programs on noise abatement.

Policy N *19.3* (Previously N 18.3): Condition that prospective purchasers or end users of property be notified of overflight, sight and sound of routine aircraft operations by all effective means, including:

a. Requiring new residential subdivisions that are located within the 60 CNEL contour or are subject to overflight, sight and sound of aircraft from any airport to have such information included in the State of California Final Subdivision Public Report.

b. Requiring that Declaration and Notification of Aircraft Noise and Environmental Impacts be recorded and made available to prospective purchasers or end users of property located within the 60 CNEL noise contour for any airport or air station or is subject to routine aircraft overflight.

Policy N *19.4* (Previously N 18.4): Promote increased awareness concerning the effects of noise and suggest methods by which the public can be of assistance in reducing noise.

Policy N *19.5* (Previously N 18.5): Require new developments that have the potential to generate significant noise impacts to inform impacted users on the effects of these impacts during the environmental review process.

2. Land Use (LU) Element Policies

Policy LU 1.8: As required by the Airport Land Use Law, submit certain proposed actions to the Riverside County Airport Land Use Commission for review. Such actions include proposed amendments to the general plan, area plans, or specific plans, as well as proposed revisions to the zoning ordinance and building codes.

Policy LU *7.4* (Previously LU 6.4): Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing and traffic.

Policy LU *15.1* (Previously LU 14.1): Allow airport facilities to continue operating in order to meet existing and future needs respecting potential noise and safety impacts.

Policy LU *16.9* (Previously LU 15.9): Restrict placement of commercial wind turbine arrays within 2,000 feet of residential development for arrays with 10 or fewer wind turbines and restrict placement of commercial wind turbine arrays within 3,000 feet or greater of residential development for arrays with more than 10 wind turbines, unless the applicant supplies documentation that the machines are designed according to proven engineering practices and will not violate applicable County noise standards including excessive low frequency or pure tone noise.

Policy LU *16.10* (Previously 15.10): Require wind turbines to operate at less than 65 dBA and not more than 60 dBA when installed adjacent to noise-sensitive land uses.

Policy LU *29.6* (Previously 23.6): Require that commercial projects abutting residential properties protect the residential use from the impacts of noise, light, fumes, odors, vehicular traffic, parking and operational hazards.

Policy LU *30.6* (Previously LU 24.6): Control the development of industrial uses that use, store, produce, or transport toxins, generate unacceptable levels of noise or air pollution, or result in other impacts.

Policy LU *31.3* (Previously LU 25.3): Require that new public facilities protect sensitive uses, such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking and operational hazards.

Policy LU *32.10* (Previously LU 26.10): Require that mixed-use developments be designed to mitigate potential conflicts between uses, considering such issues as noise, lighting, security, trash, and truck, and automobile access.

3. Circulation (C) Element Policies

Policy C 3.27: Evaluate proposed highway extensions or widening projects for potential noise impacts on existing and future land uses in the area. Require that the effects of truck mix, speed limits and ultimate motor vehicle volumes on noise levels are also explored during the environmental process.

Policy C 3.28: Reduce transportation noise through proper roadway design and coordination of truck and vehicle routing.

Policy C 3.29: Include noise mitigation measures in the design of new roadway projects in the county.

Policy C 5.1: Encourage Caltrans to install and maintain landscaping and other mitigation elements along freeways and highways, especially when they are adjacent to existing residential or other noise sensitive uses.

Policy C 6.7: Require that the automobile and truck access of commercial and industrial land uses abutting residential parcels be located at the maximum practical distance from the nearest residential parcels to minimize noise impacts.

Policy C 9.3: Encourage the development of a mass multi-modal transit system with reduced noise characteristics.

Policy C 9.4: Encourage local and regional public transit providers to ensure the equipment they use and operate does not generate excessive noise impacts on the community.

Policy C 9.5: Properly maintain transit lines and encourage operational restrictions (e.g. hours of operation, speed limits) at times that will reduce adverse noise impacts in residential areas and other noise sensitive areas.

Policy C 13.7: Dedicate right-of-way and land for future transit centers in community centers and/or major activity areas (high concentrations of employment and residential uses) and in areas that minimize noise impacts on surrounding residential and sensitive land uses.

Policy C 14.3: Encourage the use of noise-reducing flight procedures for airplanes and helicopters, such as maintaining flight altitudes or using flight patterns that avoid noise-sensitive neighborhoods to the extent permitted by Federal Aviation Administration regulations.

Policy C *20.8* (Previously C 20.6): Protect Riverside County residents from transportation generated noise hazards. Increased setbacks, walls, landscaped berms, other sound absorbing barriers or a combination thereof shall be provided along freeways, expressways and four-lane highways in order to protect adjacent noise-sensitive land uses from traffic-generated noise impacts. Additionally, noise generators such as commercial, manufacturing and/or industrial activities shall use these techniques to mitigate exterior noise levels to no more than 60 decibels.

D. Proposed New or Revised General Plan Policies

The following new General Plan Noise (N) Element policy is proposed as part of GPA No. 960.

1. Noise (N) Element Policies

Policy N 7.1: New land use development within Airport Influence Areas shall comply with airport land use noise compatibility criteria contained in the corresponding airport land use compatibility plan for the area. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in [General Plan] Appendix *I-1*~~L~~ and summarized in the Policy Area section of the affected Area Plans.

Policy N 7.3: Prohibit new residential land uses, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of any currently operating public-use or military airports. The applicable noise contours are as defined by the Riverside County Airport Land Use Commission and depicted in [General Plan] Appendix *I-1*~~L~~, as well as in the applicable Area Plan's Airport Influence Area section.

***NEW* Policy N 8.1:** *Prohibit residential development, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of the Chocolate Mountain Aerial Gunnery Range.*

2. Land Use (LU) Element Policies

Policy LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

a. Compliance with the design standards of the appropriate area plan land use category.

b. Require that structures be constructed in accordance with the requirements of the County=s zoning, building, and other pertinent codes and regulations.

c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.

d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.

e. Pursue energy efficiency through street configuration, building orientation, and landscaping to capitalize on shading and facilitate solar energy, as provided for in Title 24 *Part 6 and/or Part 11*, of the California ~~Administrative~~ Code *of Regulations (CCR)*.

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate.

g. Encourage innovative and creative design concepts.

h. Encourage the provision of public art *that enhances the community's identity, which may include elements of historical significance and creative use of children's art*. ~~Encourage creative use of children's art as public art. An example of this would be a child day care center utilizing appropriate design elements (such as murals made by the children in place of a plain painted wall). If the project area is of historical significance, consider including that element into the project design.~~

i. Include consistent and well-designed signage that is integrated with the building=s architectural character.

j. Provide safe and convenient vehicular access and reciprocal access between adjacent commercial uses.

k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighborhoods.

l. Mitigate noise, odor, lighting, and other impacts on surrounding properties.

m. Provide and maintain landscaping in open spaces and parking lots.

n. Include extensive landscaping.

o. Preserve natural features, such as unique natural terrain, *arroyos, canyons, and other* drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.

p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space, and other pertinent elements.

q. Design parking lots and structures to be functionally and visually integrated and connected.

r. Site buildings access points along sidewalks, pedestrian areas, and bicycle routes, and include amenities that encourage pedestrian activity.

s. Establish safe and frequent pedestrian crossings.

t. Create a human-scale ground floor environment that includes public open areas that separate pedestrian space from auto traffic or where mixed, it does so with special regard to pedestrian safety.

u. Recognize open space, including hillsides, arroyos, riparian areas, and other natural features as amenities that add community identity, beauty, recreational opportunities, and monetary value to adjacent developed areas.

v. Manage wild land fire hazards in the design of development proposals located adjacent to natural open space.

Policy LU *15.2* (Previously LU 14.2): Review all proposed projects and require consistency with any applicable airport land use compatibility plan as set forth in [General Plan] Appendix *I-1*~~L~~ and as summarized in the Area Plan's Airport Influence Area section for the airport in question.

***NEW* Policy LU 23.8:** *Restrict through truck traffic in residential areas and on streets with specific facilities that have high density of people/users; through planning and design of developments, direct truck traffic to mater transportation corridors.*

3. Open Space (OS) Element Policies

Policy OS 14.5: Require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours and air quality. *The same standards shall apply to the non-mining land uses within or adjacent to areas classified by the State Geologist as MRZ-2a.*

4.15.4 Thresholds of Significance for Noise

Thresholds are used to determine whether a project may have a significant environmental effect. The "threshold of significance" for a given environmental effect is simply the level at which the Lead Agency finds the effects of the project to be significant. A threshold may be based on health-based standards, safety requirements, a regulatory standard or any of a variety of qualitative factors, as deemed appropriate by the Lead Agency. For the noise and vibration issues addressed in this section, the CEQA thresholds are used. However, because of the nature of these CEQA questions, a variety of standards, policies and other values also come into play, as discussed below after the CEQA thresholds.

A. CEQA Thresholds

For this EIR, implementation of GPA No. 960 may result in a significant noise impact if it would:

1. Generate or expose persons to noise levels in excess of standards established in the General Plan, noise ordinance or applicable standards of other agencies.

2. Generate or expose persons to excessive groundborne vibration or groundborne noise levels.

3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

5. Result in exposure of people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, public use airport or private airport/private airstrip.

B. Standards for Significance and Mitigation

In the first CEQA threshold above, noise level significance is related to the exceedance of standards "established in the General Plan, noise ordinance or applicable standards of other agencies." As seen in the prior section (4.15.3), however, a large number of noise standards exist for a wide range of situations. Some standards apply to just federal projects or to freeways or to airports. Others address stationary sources or are merely "recommended" as guidelines for local agencies. As a result, determining specifically what impacts are significant in which cases can be difficult at the programmatic level. In all cases, the specific circumstances and nature of the proposed project or discretionary action dictate what standards are applicable or most appropriate. The impacts and mitigation necessary, if any, would then be assessed for the given situation.

For the case of this countywide, programmatic EIR, several 'simplified' standards are used as reference points for potential significance in analyzing the data generated for noise in association with this project. As an indicator of a potentially significant noise level for residential uses (as generally representing all sensitive receptors), the analyses in the rest of this section use an exterior sound level standard of 55 dBA (or 60 dBA if no 55-dBA contour is available and for certain airports). Use of this standard is consistent with an interior noise level that can readily be attenuated to 40 dBA (or lower) through standard building construction techniques (i.e., without requiring any special noise mitigation). See subsequent sections for additional information. As a proximal threshold for significant sound *increases*, the FTA's incremental noise increase standards in Table 4.15-H are used.

Lastly, for noise effects associated with air travel and airport activities, the standards used are those consistent with the General Plan (e.g., Policy N 7.3) and the Riverside County Airport Land Use Compatibility Plan (Policy Document). This specifically refers to a maximum CNEL of 60 dBA for new residential development (except a level of 55 dB is applied to the Chiriaco Summit and Desert Center Airports per the ALUCP).

The above thresholds are equal to or lower than those set by the various agencies and policies discussed in Section 4.15.3, i.e., EPA levels, FAA levels and California Building Code (Title 24) levels, as well as Riverside County General Plan Table N-1, etc. The use of the specific thresholds above serve to ensure that noise significance is addressed conservatively. Further, these outdoor sound level ranges are considered within the limits of reasonably achievable noise attenuation values that could be reached through conventional construction measures and, if needed, reasonably feasible sound mitigation measures. These issues are discussed further in the subsequent sections.

4.15.5 Effect of GPA No. 960 on the General Plan and on Noise

GPA No. 960 includes specific changes to General Plan land use designations (LUDs) on various parcels throughout unincorporated Riverside County. In addition to these land use changes, the project also includes several Policy Area, Study Area and overlay changes. The proposed project would also incorporate maps for new trail and road alignments, road standard revisions and an incidental commercial policy for rural areas. As a result, future development accommodated by the proposed project, GPA No. 960, may result in the siting of commer-

cial and industrial uses in close proximity to noise sensitive uses, such as residences, schools or hospitals. Likewise, it could lead to homes being sited near noise sources, such as industrial uses or busy highways. The following sections analyze how the proposed project may affect, or be affected by, noise sensitive uses within Riverside County. The section following this one analyzes the relative significance of these results and outlines appropriate mitigation and regulatory actions to address impacts.

A. Proposed Noise-Related General Plan Changes

In regards to noise, GPA No. 960 includes several proposed changes to the General Plan Noise Element to update the chapter to reflect current noise conditions in Riverside County, as well as current regulatory issues.

Airport Future Noise Contours: The project includes an update to the discussion of airports and their contribution to noise within the county to reflect name changes and that the Desert Center Airport is not a public facility. As described in greater detail in EIR Section 3.0 (Project Description), three airports within Riverside County (Flabob, Riverside Municipal and Blythe) also have proposed land use designation (LUD) changes designed to improve their compatibility with the associated Airport Land Use Compatibility Plans. The General Plan also notes that the most recent airport noise contours (as adopted by the Riverside County ALUC) are included in Appendix L of the General Plan. The currently approved set of airport noise contours are also shown in Figures 4.15.5 through 4.15.17 in Section 4.15.2. The future year airport noise contours are included as Figures 4.15.23 through 4.15.39, below.

Military Noise Sources: The Noise Element also includes a new section recognizing the presence of the Chocolate Mountain Aerial Gunnery Range (CMAGR) in Riverside County. Specifically, proposed new Policy N 8.1 prohibits new residential land uses, other than single homes on single lots, within the CMAGR's 60 dB CNEL contours. General Plan policies to ensure land use consistency and protect future land uses adjacent to CMAGR from noise and vibration effects from the range are also included in the affected Area Plans, i.e., the Eastern Coachella Valley Area Plan and the Far Eastern Desert Area (which is addressed in the Land Use Element itself, rather than as a separate Area Plan).

Updated Noise Appendix: The new ambient noise data collected as part of this EIR (see Appendix EIR-7) is also included in Appendix I-1 of the General Plan, as required by State/OPR General Plan regulations.

New Noise Data – Ambient Noise Levels: As outlined in Section 4.15.2, the newly collected ambient noise monitoring data was used to develop a new baseline of current ambient noise levels in Riverside County. The noise monitoring documents the existing noise environment and captures the noise levels associated with typical daily operations and activities throughout the county. The specific locations used for the short-term and long-term noise measurements were selected to represent areas of growth across the county. That is, areas most likely to have increased ambient noise levels since the last countywide data was collected in 1999. The use of new 2010 data provides a recent and reasonable snapshot of existing noise conditions within Riverside County. See Tables 4.15-D and 4.15-F for the ambient noise monitoring results for both long-term and short-term.

New Noise Data – Projected Traffic Noise Levels: Per Section 4.15.2, noise levels associated with traffic on county roads were also recalculated. For traffic noise, the sound levels are modeled, rather than measured directly. This modeling allows development of noise scenarios (contours) for a variety of traffic patterns, including for traffic levels projected to occur when the General Plan builds out, both with and without the GPA No. 960 project. As a result, these build out noise contours can indicate where potential noise impacts might occur and where buffers, sound walls or other measures to reduce noise levels might be warranted.

The modeled traffic noise levels for the base year (environmental existing setting) of 2007 were presented in Table 4.15-G in Section 4.15.2. The future traffic noise levels forecast for 2060 (General Plan build out year) are provided in Table 4.15-M (Future Traffic Noise Levels, With and Without Project), below. The resultant data was then used to develop a series of projected contour maps for various county roadway locations and types, as provided in Figures 4.15.40 through 4.15.53, also below.

Table 4.15-M: Future Traffic Noise Levels, With and Without Project

Roadway Segments (All results in Ldn dBA at 50 feet from Centerline of Outermost Lane)	Existing: Base Year (2007)	Future: GP Build Out Year (2060)				B/O Scenario Difference*
		Existing Gen. Plan		GP With GPA No. 960		
		NO PROJ	Change	WITH PROJ	Change	
38th Ave between Del Webb Blvd and western city limits of Indio	65.1	**71.2**	*6.1*	**70.8**	*5.7*	**- 0.4**
42nd Ave between Washington St and Yucca Lane	66.6	**67.8**	*1.2*	**69.4**	*2.8*	**1.6**
54th Ave between Monroe St and Jackson St	67.9	**69.2**	*1.3*	**67.8**	*- 0.1*	**- 1.4**
62nd Ave between eastern city limits of La Quinta and Jackson St	67.2	**69.3**	*2.1*	**73.9**	*6.7*	**4.6**
Agua Mansa Rd between Market St and Wilson St	67.9	**73.4**	*5.5*	**71.7**	*3.8*	**- 1.7**
Airport Blvd between Van Buren St and Fredrick St	64.4	**70.9**	*6.5*	**70.3**	*5.9*	**- 0.6**
Archibald Ave between Limonite Ave and N Riv. County limits	71.4	**75.4**	*4.0*	**75.3**	*3.9*	**- 0.1**
Archibald Ave between River Rd and Chandler St	68.4	**72.2**	*3.8*	**71.0**	*2.6*	**- 1.2**
Armstrong Ave between Sierra Ave and SH-60	70.2	**73.6**	*3.4*	**72.6**	*2.4*	**- 1.0**
Bellegrave Ave between Cantu Galleano Ranch Rd and Marlatt St	69.9	**72.7**	*2.8*	**71.9**	*2.0*	**- 0.8**
Bellegrave Ave between Bain St and Van Buren Blvd	69.0	**76.5**	*7.5*	**74.2**	*5.2*	**- 2.3**
Bellegrave Ave between Interstate 15 and Wineville Ave	68.0	**72.8**	*4.8*	**72.6**	*4.6*	**- 0.2**
Bob Hope Dr between Ramon Rd and Dinah Shore Dr	67.9	**72.9**	*5.0*	**73.1**	*5.2*	**0.2**
Briggs Rd between Los Alamos Rd and SH-79	65.1	**73.6**	*8.5*	**73.2**	*8.1*	**- 0.4**
Broadway between southern city limits of Blythe and Seeley Ave	63.0	**67.5**	*4.5*	**67.7**	*4.7*	**0.2**
Cactus Ave between Ellsworth St and I-215	68.7	**73.8**	*5.1*	**72.1**	*3.4*	**- 1.7**
Cajalco Rd between Temescal Canyon Rd and La Sierra Ave	67.0	**77.8**	*10.8*	**75.5**	*8.5*	**- 2.3**
Cajalco Rd between El Sobrante Rd and Gavilan Rd	68.8	**78.6**	*9.8*	**76.8**	*8.0*	**- 1.8**
Cajalco Rd between Patterson Ave and Day St	67.9	**78.2**	*10.3*	**76.3**	*8.4*	**- 1.9**
Camino Real between Jurupa Rd and Limonite Ave	65.2	**69.2**	*4.0*	**68.1**	*2.9*	**- 1.1**
Cantu Galleano Rnch Rd between Etiwanda Ave and Van Buren Blvd	72.8	**73.2**	*0.4*	**73.0**	*0.2*	**- 0.2**
Center St between Iowa Ave and Mount Vernon Ave	63.9	**66.1**	*2.2*	**67.1**	*3.2*	**1.0**
Citrus St between Cleveland Ave and Summer Ave	65.4	**68.3**	*2.9*	**65.1**	*- 0.3*	**- 3.2**
Clay St between Limonite Ave and Van Buren Blvd	66.6	**65.2**	*- 1.4*	**65.2**	*- 1.4*	**0.0**
Clinton Keith Rd between W Murrieta city limits and Los Alamos Rd	67.2	**75.8**	*8.6*	**74.3**	*7.1*	**- 1.5**
Country Village Rd between Granite Hill Dr and Philadelphia St	70.0	**75.0**	*5.0*	**74.2**	*4.2*	**- 0.8**
Del Webb Blvd between Washington St and 38th Ave	66.1	**68.9**	*2.8*	**70.7**	*4.6*	**1.8**
Desert Moon Dr between Ramon Rd and Varner Rd	64.4	**66.5**	*2.1*	**66.7**	*2.3*	**0.2**
Dillon Rd between Long Canyon Rd and Bennett Rd	67.9	**70.8**	*2.9*	**69.2**	*1.3*	**- 1.6**
Domenigoni Pkwy between Warren Rd and Patterson Ave	74.4	**74.3**	*- 0.1*	**73.0**	*- 1.4*	**- 1.3**
Domenigoni Pkwy between SH-79 and Patterson Ave	74.2	**74.9**	*0.7*	**72.7**	*- 1.5*	**- 2.2**
E Stetson Ave between eastern city limits of Hemet and Girard St	68.5	**72.2**	*3.7*	**71.1**	*2.6*	**- 1.1**
El Sobrante Rd between Cajalco Rd and Mockingbird Canyon Rd	67.1	**75.9**	*8.8*	**74.0**	*6.9*	**- 1.9**
Ellis Ave between Theda St and Marshall Rd	66.9	**66.7**	*- 0.2*	**64.7**	*- 2.2*	**- 2.0**
Etiwanda Ave between SH-60 and Philadelphia St	72.6	**76.6**	*4.0*	**75.9**	*3.3*	**- 0.7**
Etiwanda Ave between Limonite Ave and Holmes Ave	63.7	**69.0**	*5.3*	**63.7**	*0.0*	**- 5.3**
Felspar Rd between Mission Blvd and Galena St	68.3	**68.7**	*0.4*	**67.6**	*- 0.7*	**- 1.1**
Gavilan Rd between Cajalco Rd and Multiview Dr	66.2	**71.2**	*5.0*	**70.7**	*4.5*	**- 0.5**
Gilman Springs Rd between ramps on SH-79 and State St	73.4	**75.0**	*1.6*	**73.8**	*0.4*	**- 1.2**
Gilman Springs Rd between Jack Rabbit Trail and Bridge St	72.0	**78.1**	*6.1*	**76.2**	*4.2*	**- 1.9**
Graeber St between Cactus Ave and Meyer St	60.4	**73.0**	*12.6*	**71.5**	*11.1*	**- 1.5**
Grand Ave between Corydon Rd and SH-74	68.5	**73.0**	*4.5*	**68.4**	*- 0.1*	**- 4.6**
Hamner Ave between Limonite Ave and 65th St	68.1	**70.1**	*2.0*	**70.0**	*1.9*	**- 0.1**

Roadway Segments (All results in Ldn dBA at 50 feet from Centerline of Outermost Lane)	Existing: Base Year (2007)	Future: GP Build Out Year (2060)				B/O Scenario Difference*
		Existing Gen. Plan		GP With GPA No. 960		
		NO PROJ	Change	WITH PROJ	Change	
Hamner Ave between northern city limits of Norco and 68th St	66.5	**69.9**	*3.4*	**67.0**	*0.5*	**- 2.9**
Harrison St between 62nd Ave and 54th Ave	72.9	**77.7**	*4.8*	**78.8**	*5.9*	**1.1**
Horsethief Canyon Rd between Interstate 15 and Mountain Rd	65.2	**68.2**	*3.0*	**67.2**	*2.0*	**- 1.0**
I-10 between Apache Trail and Fields Rd	84.7	**88.3**	*3.6*	**88.0**	*3.3*	**- 0.3**
I-10 between SH-111 and Tipton Rd	84.6	**88.6**	*4.0*	**88.5**	*3.9*	**- 0.1**
I-10 between Ramon Rd and Date Palm Dr	84.0	**87.4**	*3.4*	**87.2**	*3.2*	**- 0.2**
I-10 between SH-62 and Tipton Rd	84.6	**88.6**	*4.0*	**88.6**	*4.0*	**0.0**
I-10 between Ramon Rd and Monterey Ave	84.3	**87.5**	*3.2*	**87.5**	*3.2*	**0.0**
I-10 between SH-86 and Dillon Rd	82.1	**88.3**	*6.2*	**87.1**	*5.0*	**- 1.2**
I-10 between Dillon Rd and Box Canyon Rd	81.8	**87.4**	*5.6*	**87.2**	*5.4*	**- 0.2**
I-10 between Red Cloud Mine Rd and Eagle Mountain Rd	81.8	**87.0**	*5.2*	**87.4**	*5.6*	**0.4**
I-10 between Hayfield Rd and Red Cloud Mine Rd	81.6	**88.4**	*6.8*	**89.2**	*7.6*	**0.8**
I-10 between Box Canyon Rd and Summit Rd	81.8	**87.3**	*5.5*	**87.1**	*5.3*	**- 0.2**
I-10 between Chuckwalla Valley Rd and Willey Well Rd	81.9	**85.9**	*4.0*	**86.9**	*5.0*	**1.0**
I-10 between Willey Well Rd and Mesa Dr	81.9	**86.7**	*4.8*	**87.1**	*5.2*	**0.4**
I-15 between Mission Blvd and Philadelphia St	82.9	**83.7**	*0.8*	**83.1**	*0.2*	**- 0.6**
I-15 between SH-79 and Rainbow Valley Blvd West	81.8	**84.1**	*2.3*	**84.3**	*2.5*	**0.2**
I-215 between Van Buren Blvd and Oleander Ave	81.5	**82.9**	*1.4*	**82.8**	*1.3*	**- 0.1**
Indian Ave between Dillon Rd and 18th Ave	70.7	**74.3**	*3.6*	**73.8**	*3.1*	**- 0.5**
Iowa Ave between Center St and northern city limits of Riverside	70.6	**71.4**	*0.8*	**71.4**	*0.8*	**0.0**
Jurupa Rd between Valley Way and Camino Real	63.2	**69.4**	*6.2*	**67.3**	*4.1*	**- 2.1**
Knabe Rd between Interstate 15 and Hunt Rd	67.6	**67.6**	*0.0*	**69.7**	*2.1*	**2.1**
Cleveland Ave between S Riverside city limits and Dufferin Ave	68.1	**75.5**	*7.4*	**73.9**	*5.8*	**- 1.6**
Limonite Ave between Archibald Ave and Harrison Ave	66.0	**75.9**	*9.9*	**74.1**	*8.1*	**- 1.8**
Limonite Ave between Hamner Ave and I-15	70.0	**75.5**	*5.5*	**74.6**	*4.6*	**- 0.9**
Limonite Ave between Pedley Rd and Clay St	68.9	**73.9**	*5.0*	**73.0**	*4.1*	**- 0.9**
Limonite Ave between Pedley Rd and Van Buren Blvd	70.9	**74.0**	*3.1*	**73.3**	*2.4*	**- 0.7**
Limonite Ave between Etiwanda Ave and Marlatt St	70.5	**75.6**	*5.1*	**73.6**	*3.1*	**- 2.0**
Limonite Ave between Van Buren Blvd and Felspar Rd	71.9	**73.5**	*1.6*	**72.8**	*0.9*	**- 0.7**
Limonite Ave between Peralta Place and Camino Real	68.1	**72.0**	*3.9*	**71.4**	*3.3*	**- 0.6**
Los Alamos Rd between Briggs Rd and Whitewood Rd	65.9	**76.2**	*10.3*	**74.3**	*8.4*	**- 1.9**
Los Alamos Rd between eastern Murrieta city limits and Briggs Rd	66.5	**76.4**	*9.9*	**74.7**	*8.2*	**- 1.7**
Market St between Aguamansa Rd and Rubidoux Blvd	69.4	**74.4**	*5.0*	**73.2**	*3.8*	**- 1.2**
Markham St between Mockingbird Canyon Rd and Washington St	65.0	**66.1**	*1.1*	**65.1**	*0.1*	**- 1.0**
Markham St between Seaton Ave and Day St	66.4	**69.4**	*3.0*	**68.1**	*1.7*	**- 1.3**
Menifee Rd between Nuevo Rd and Central Ave	67.5	**76.1**	*8.6*	**76.1**	*8.6*	**0.0**
Mission Blvd between Wineville Ave and I-15	69.5	**74.8**	*5.3*	**74.0**	*4.5*	**- 0.8**
Mission Blvd between Pedley Rd and Agate St	70.3	**74.3**	*4.0*	**74.4**	*4.1*	**0.1**
Mockingbird Cyn Rd between Van Buren Blvd and Markham St	70.5	**70.0**	*- 0.5*	**70.7**	*0.2*	**0.7**
Mockingbird Canyon Rd between Markham St and Van Buren Blvd	69.5	**69.96**	*0.5*	**69.2**	*- 0.3*	**- 0.8**
Monroe St between 54th Ave and 52nd Ave	67.7	**72.4**	*4.7*	**71.9**	*4.2*	**- 0.5**
Mountain View Rd between 20th Ave and Varner Rd	67.1	**71.9**	*4.8*	**71.5**	*4.4*	**- 0.4**
Murrieta Hot Spring Rd between Sky Cyn Dr and Winchester Rd	64.7	**72.4**	*7.7*	**72.1**	*7.4*	**- 0.3**
Nuevo Rd between Menifee Rd and Lakeview Ave	66.0	**72.5**	*6.5*	**67.3**	*1.3*	**- 5.2**
Old Elsinore Rd between San Jacinto Ave and Orange Ave	65.6	**73.5**	*7.9*	**68.9**	*3.3*	**- 4.6**
Ontario Freeway between Limonite Ave and 68th St	83.9	**84.1**	*0.2*	**84.0**	*0.1*	**- 0.1**
Palm Dr between N city limits of Cathedral City and 20th Ave	71.2	**73.0**	*1.8*	**73.4**	*2.2*	**0.4**
Pedley Rd between Mission Blvd and SH-60	66.5	**69.1**	*2.6*	**68.2**	*1.7*	**- 0.9**
Pedley Rd between Limonite Ave and Jurupa Rd	65.6	**68.5**	*2.9*	**67.8**	*2.2*	**- 0.7**
Perris Blvd between Reche Vista Dr and Sunnymead Ranch Pkwy	65.6	**70.3**	*4.7*	**69.1**	*3.5*	**- 1.2**
Pinacate Rd between E city limits of Menifee and Juniper Flats Rd	73.0	**73.0**	*0.0*	**78.4**	*5.4*	**5.4**

Roadway Segments (All results in Ldn dBA at 50 feet from Centerline of Outermost Lane)	Existing: Base Year (2007)	Future: GP Build Out Year (2060)				B/O Scenario Difference*
		Existing Gen. Plan		GP With GPA No. 960		
		NO PROJ	Change	WITH PROJ	Change	
Ramon Rd between Varner Rd and I-10	68.2	**73.7**	*5.5*	**73.9**	*5.7*	**0.2**
Pourroy Rd between Thompson Rd and Winchester Rd	65.3	**70.0**	*4.7*	**68.9**	*3.6*	**- 1.1**
Ramon Rd between Sierra Del Sol and La Canada Way	65.3	**72.7**	*7.4*	**72.8**	*7.5*	**0.1**
Ramon Rd between Bob Hope Dr and I-10	70.1	**72.4**	*2.3*	**72.8**	*2.7*	**0.4**
Ramon Rd between I-10 and Varner Rd	70.4	**72.2**	*1.8*	**73.2**	*2.8*	**1.0**
Ramon Rd between Sierra Del Sol and Desert Moon Dr	68.6	**73.6**	*5.0*	**72.9**	*4.3*	**- 0.7**
Ramona Expressway between E city limits of Perris and Davis Rd	71.6	**79.5**	*7.9*	**79.6**	*8.0*	**0.1**
Ramona Expressway between Davis Rd and Lakeview Ave	71.6	**81.3**	*9.7*	**80.5**	*8.9*	**- 0.8**
Reche Vista Dr between Perris Blvd and Reche Canyon Rd	65.6	**72.4**	*6.8*	**68.4**	*2.8*	**- 4.0**
Redlands Blvd between San Timoteo Canyon Rd and Locust Ave	70.9	**72.1**	*1.2*	**68.6**	*- 2.3*	**- 3.5**
Rubiduox Blvd between Market St and 24th St	68.3	**70.6**	*2.3*	**70.2**	*1.9*	**- 0.4**
Schleisman Rd between Archibald Ave and River Rd	67.5	**73.3**	*5.8*	**73.2**	*5.7*	**- 0.1**
Sierra Ave between Armstrong Ave and N Riv. County limits	68.6	**72.4**	*3.8*	**72.4**	*3.8*	**0.0**
Monterey Ave between Ramon Rd and I-10	65.6	**69.5**	*3.9*	**68.4**	*2.8*	**- 1.1**
SR-111 between Tram Way Rd and I-10	72.8	**78.2**	*5.4*	**77.6**	*4.8*	**- 0.6**
SR-195 between Lincoln St and Grapefruit Blvd	68.3	**73.3**	*5.0*	**71.8**	*3.5*	**- 1.5**
SR-371 between SH-79 and Elder Creek Rd	69.5	**73.0**	*3.5*	**71.3**	*1.8*	**- 1.7**
SR-371 between SH-74 and Mitchell Rd	69.1	**73.1**	*4.0*	**71.7**	*2.6*	**- 1.4**
SR-60 between Wineville Ave and Mission Blvd	83.2	**83.4**	*0.2*	**82.3**	*- 0.9*	**- 1.1**
SR-60 between SH-60 and Jack Rabbit Trail	81.8	**84.7**	*2.9*	**84.1**	*2.3*	**- 0.6**
SR-62 between I-10 and Dillon Rd	73.3	**77.0**	*3.7*	**77.4**	*4.1*	**0.4**
SR-74 between northern city limits of Lake Elsinore and I-15	73.0	**76.8**	*3.8*	**76.3**	*3.3*	**- 0.5**
SR-74 between Theda St and Ethanac Rd	72.8	**73.9**	*1.1*	**72.5**	*- 0.3*	**- 1.4**
SR-74 between SH-371 and Palm Canyon Dr	68.3	**72.3**	*4.0*	**70.6**	*2.3*	**- 1.7**
SR-78 between Hobson Way and 18th Ave	67.9	**71.6**	*3.7*	**71.0**	*3.1*	**- 0.6**
SR-79 between eastern city limits of Murrieta and Pourroy Rd	73.9	**81.2**	*7.3*	**78.9**	*5.0*	**- 2.3**
SR-79 between Auld Rd and Hunter Rd	74.3	**80.1**	*5.8*	**79.4**	*5.1*	**- 0.7**
SR-79 between Scott Rd and Wickered Rd	73.8	**82.4**	*8.6*	**80.6**	*6.8*	**- 1.8**
SR-79 between eastern city limits of Temecula and Anza Rd	71.5	**78.7**	*7.2*	**74.4**	*2.9*	**- 4.3**
SR-79 between SH-371 and Sage Rd	69.5	**70.7**	*1.2*	**69.2**	*- 0.3*	**- 1.5**
SR-79 between Domenigoni Pkwy and Patton Ave	73.7	**84.0**	*10.3*	**82.5**	*8.8*	**- 1.5**
SR-79 between Gilman Springs Rd and south. Beaumont city limits	75.0	**82.6**	*7.6*	**81.9**	*6.9*	**- 0.7**
SR-86 between Pierce St and 81st Ave	72.2	**80.9**	*8.7*	**76.9**	*4.7*	**- 4.0**
SR-86 between 74th Ave and Pierce St	71.5	**77.6**	*6.1*	**77.1**	*5.6*	**- 0.5**
SR-86 between southern city limits of Coachella and 66th Ave	78.6	**78.9**	*0.3*	**79.3**	*0.7*	**0.4**
SR-86 between 54th Ave and Airport Blvd	73.0	**82.8**	*9.8*	**78.7**	*5.7*	**- 4.1**
SR-86 between I-10 and Dillon Rd	81.1	**83.3**	*2.2*	**84.3**	*3.2*	**1.0**
SR-86 between Grapefruit Blvd and southern city limits of Coachella	78.2	**81.0**	*2.8*	**82.4**	*4.2*	**1.4**
Seaton Ave between Harvill Ave and Markham St	64.0	**70.7**	*6.7*	**62.8**	*- 1.2*	**- 7.9**
I-15 between Temescal Canyon Rd and Indian Truck Trail	83.2	**83.2**	*0.0*	**83.7**	*0.5*	**0.5**
I-15 between Weirick Rd and Temescal Canyon Rd	83.2	**83.2**	*0.0*	**83.8**	*0.6*	**0.6**
Temescal Canyon Rd between Cajalco Rd and I-15	66.6	**75.4**	*8.8*	**73.1**	*6.5*	**- 2.3**
Temescal Canyon Rd between I-15 and Lawson Rd	64.1	**70.0**	*5.9*	**61.7**	*- 2.4*	**- 8.3**
Interstate 15 Temescal Canyon Rd and Weirick Rd	83.2	**83.8**	*0.6*	**83.8**	*0.6*	**0.0**
US-95 between I-10 and northern county limits of Riverside	68.5	**69.8**	*1.3*	**70.1**	*1.6*	**0.3**
Van Buren Blvd between Bellegrave Ave and Etiwanda Ave	76.5	**77.7**	*1.2*	**77.0**	*0.5*	**- 0.7**
Van Buren Blvd between Mockingbird Cyn Blvd and Firethorn Ave	74.2	**77.4**	*3.2*	**76.3**	*2.1*	**- 1.1**
Van Buren Blvd between Washington St and Krameria Ave	73.2	**76.5**	*3.3*	**75.4**	*2.2*	**- 1.1**
Van Buren Blvd between Limonite Ave and Jurupa Rd	76.5	**78.2**	*1.7*	**79.5**	*3.0*	**1.3**
Van Buren Blvd between Limonite Ave and Clay St	77.1	**77.1**	*0.0*	**78.8**	*1.7*	**1.7**
Van Buren Blvd between I-215 and Harmon St	72.2	**75.7**	*3.5*	**74.7**	*2.5*	**- 1.0**

Roadway Segments (All results in Ldn dBA at 50 feet from Centerline of Outermost Lane)	Existing: Base Year (2007)	Future: GP Build Out Year (2060)				B/O Scenario Difference*
		Existing Gen. Plan		GP With GPA No. 960		
		NO PROJ	Change	WITH PROJ	Change	
Warren Rd between Domenigoni Pkwy and Simpson Rd	70.6	**71.7**	*1.1*	**69.2**	*- 1.4*	**- 2.5**
Warren Rd between west. Hemet city limits and W Esplanade Ave	70.3	**73.6**	*3.3*	**71.7**	*1.4*	**- 1.9**
Washington St between Van Buren Blvd and Golden St	67.5	**74.0**	*6.5*	**72.8**	*5.3*	**- 1.2**
Washington St between Del Webb Blvd and Wildcat Dr	66.6	**70.5**	*3.9*	**70.1**	*3.5*	**- 0.4**
W. Florida Ave between Winchester Rd and west. Hemet city limits	74.9	**79.7**	*4.8*	**79.1**	*4.2*	**- 0.6**
Winchester Rd between Florida Ave and California Ave	71.7	**75.2**	*3.5*	**73.7**	*2.0*	**- 1.5**

* Difference between the two build out scenarios. The "change" values are difference between 2007 and build out.
Source: LSA Associates, Noise Measurement and Analysis Study for GPA No. 960 / General Plan Update, March 2011.

D. Effects Associated with New Noise Data

In general terms, the effects, impacts and mitigation associated with noise resulting from build out of the Riverside County General Plan over time (roughly 50 years) were previously addressed in EIR No. 441, certified for the 2003 RCIP General Plan. Overall, at the programmatic scale, the generalized noise effects and build out impacts within Riverside County are unchanged from that document. See Section 4.15.6 for a full discussion of these. What has changed, however, as demonstrated by both the existing setting and future noise level data included herein, are the noise conditions in which existing uses are occurring and, more importantly (for the purposes of this EIR), in which future uses and sensitive receptors would be exposed.

Increased noise exposure as a result of development, for example this project, can occur in two basic ways. First, it can occur through the introduction of new uses into existing noisy areas causing sensitive receptors, such as residents, school children and other students, patients, congregants, etc., to be exposed to excessive noise levels. This could occur because of existing high noise levels in an area (ambient, stationary, roadway, railroad, airport, etc.) or through an increase in an area's noise over time from initially acceptable to eventually unacceptable levels. And, since vehicle traffic is the main source of pervasive noise within Riverside County, an increase in traffic levels (which also include air and rail) is the second key way in which sensitive receptors can be exposed to excessive noise.

Accordingly, General Plan build out effects, either with or without the project's proposed General Plan changes, would be potentially significant for any that introduce new sensitive receptors into areas in which exterior noise levels exceed 55 dBA. It would likewise be significant for incremental traffic noise increases attributable to the project that would result in either an existing noise level (at any point) that exceeded 55 dBA or in an incremental increase exceeding any of the levels noted in Table 4.15-H.

E. Effects Associated with GPA No. 960

GPA No. 960 would result in a significant noise effect where it would create a change that exposed a sensitive receptor to excessive noise levels or a substantial increase in noise, as defined previously. The proposed project would contribute to noise generation, noise exposure or noise increase in the ways outlined below.

1. General Noise Effects

Depending on intensity, frequency, duration and other factors, noise can affect human health and quality of life. Noise problems can manifest themselves in two general ways:

- The absolute level of noise can generate impacts to existing or reasonably foreseeable future noise-sensitive land uses; or

- A substantial increase in the ambient noise levels existing before project implementation can generate impacts to pre-existing noise-sensitive land uses.

Typical noise-related adverse effects associated with new development projects generally fall into the following categories: noise from construction of a development, noise from the operation of a development and the exposure of noise-sensitive land uses to existing and future noise from all sources.

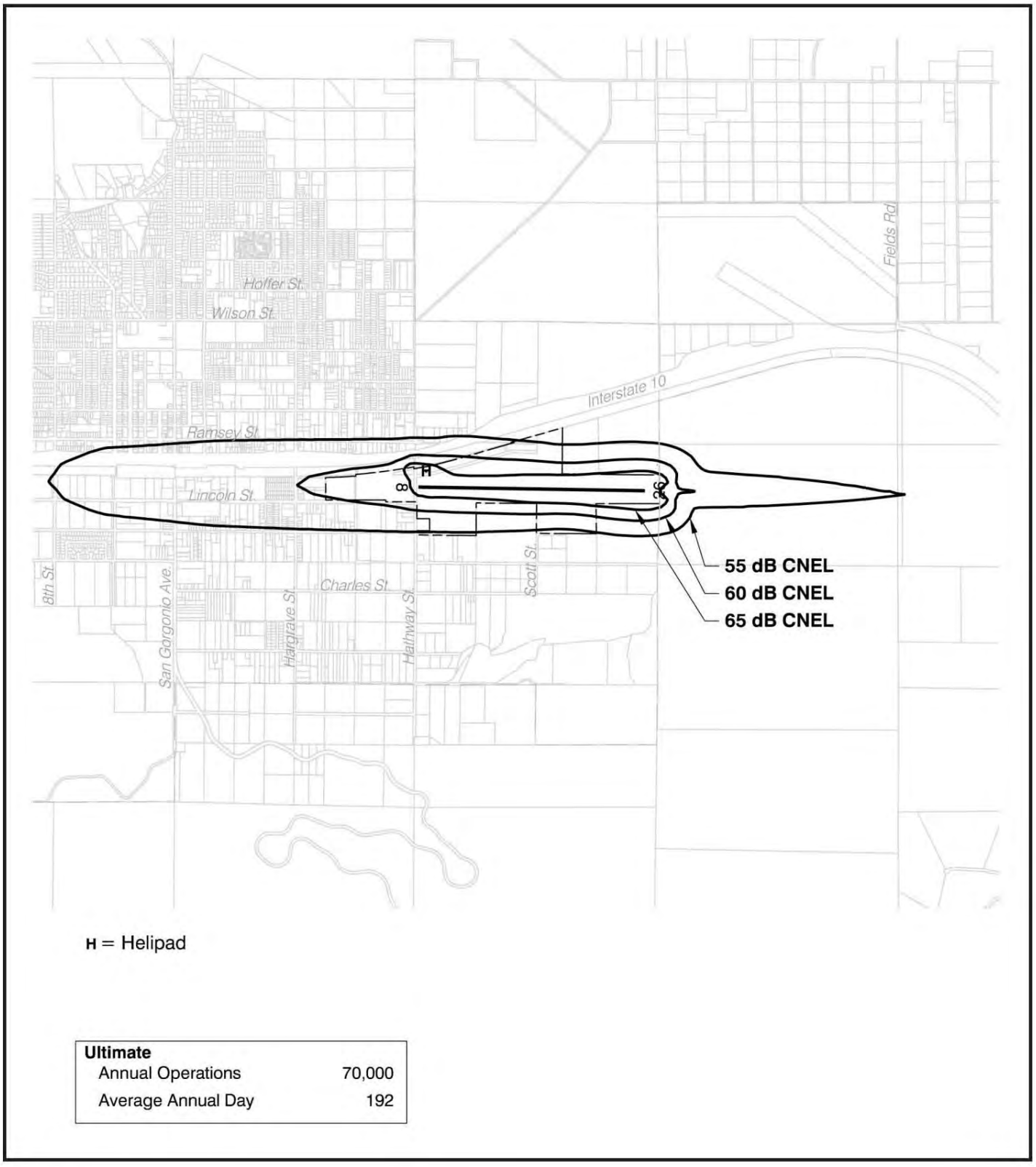
Construction of a development (as well as its supporting infrastructure) causes the exposure of onsite and/or offsite areas to associated noise, including but not limited to, site grading, truck and construction equipment movement, engine noise, rock excavation, rock crushing and blasting. See Table 4.15-N (Typical Vibration Levels Associated with Construction Equipment) for a list of typical construction equipment and noise generated. Operation of a facility can also cause the exposure of onsite and/or offsite areas to increased noise. Typical operational noise sources include, but are not limited to, mechanical equipment (pumps, rooftop equipment, condenser units, air conditioning units, pneumatic equipment, etc.), operational traffic (onsite vehicle movement, engine noise, etc.), speakers, bells, chimes and outdoor human activity in defined areas.

Lastly, the exposure of noise-sensitive land uses to existing and future noise from all sources is another typical adverse effect of development. This is particularly true of exposure to roads and highways, which are the single largest contributor to ambient noise levels. Other noise sources commonly contributing to this type of exposure include railroads, airports, heliports and extractive industries. This category includes the noise caused by new development, when it affects existing or foreseeable future noise-sensitive land uses. It also includes new development that creates or places noise-sensitive land uses where they would be affected by noise (e.g., when a new residential project creates residences close to a highway).

2. Land Use Changes

The General Plan is concerned mainly with the physical build out of Riverside County; many of the changes associated with GPA No. 960 would affect planned land usage. The proposed project's update to the General Plan includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in areas throughout Riverside County. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. Where existing or future noise levels exceed standards, this could result in the exposure of noise-sensitive land uses to excessive noise levels.

The variety of LUD and policy area changes proposed, as per the descriptions in Section 3.0 of EIR and associated Figure 3-1 (and corresponding maps within each Area Plan), may either directly or indirectly affect noise levels and noise exposure within Riverside County. Changes would lead to either an increase or decrease in development potential (density or intensity). Introducing new people and structures into areas would increase the number of sensitive receptors potentially exposed to noise and add incrementally to the traffic volumes that are responsible for a large proportion of the noise generated.



Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.23

BANNING MUNICIPAL AIRPORT
FUTURE NOISE CONTOURS

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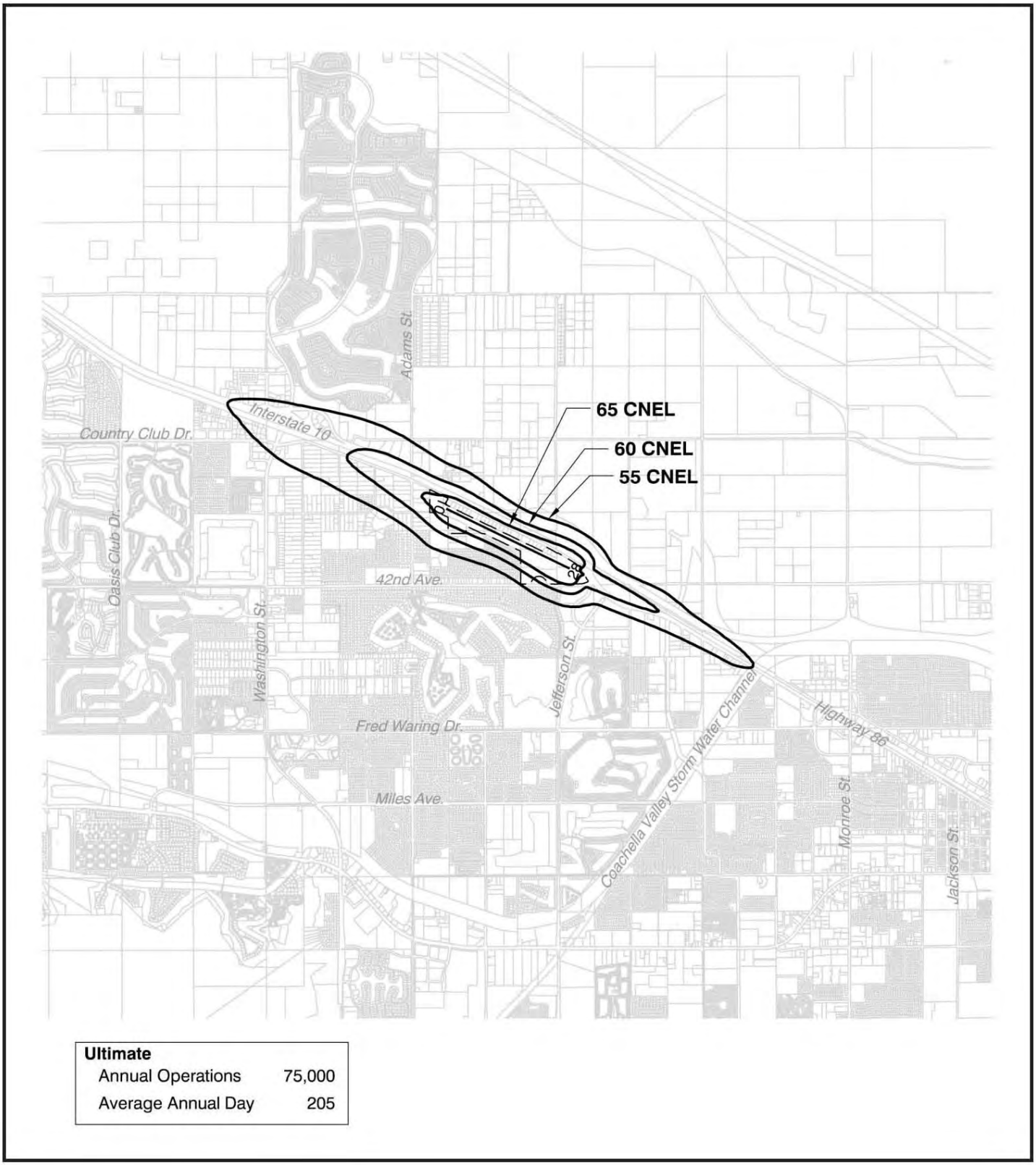

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.24

BERMUDA DUNES AIRPORT FUTURE NOISE CONTOURS: AVERAGE ANNUAL DAY

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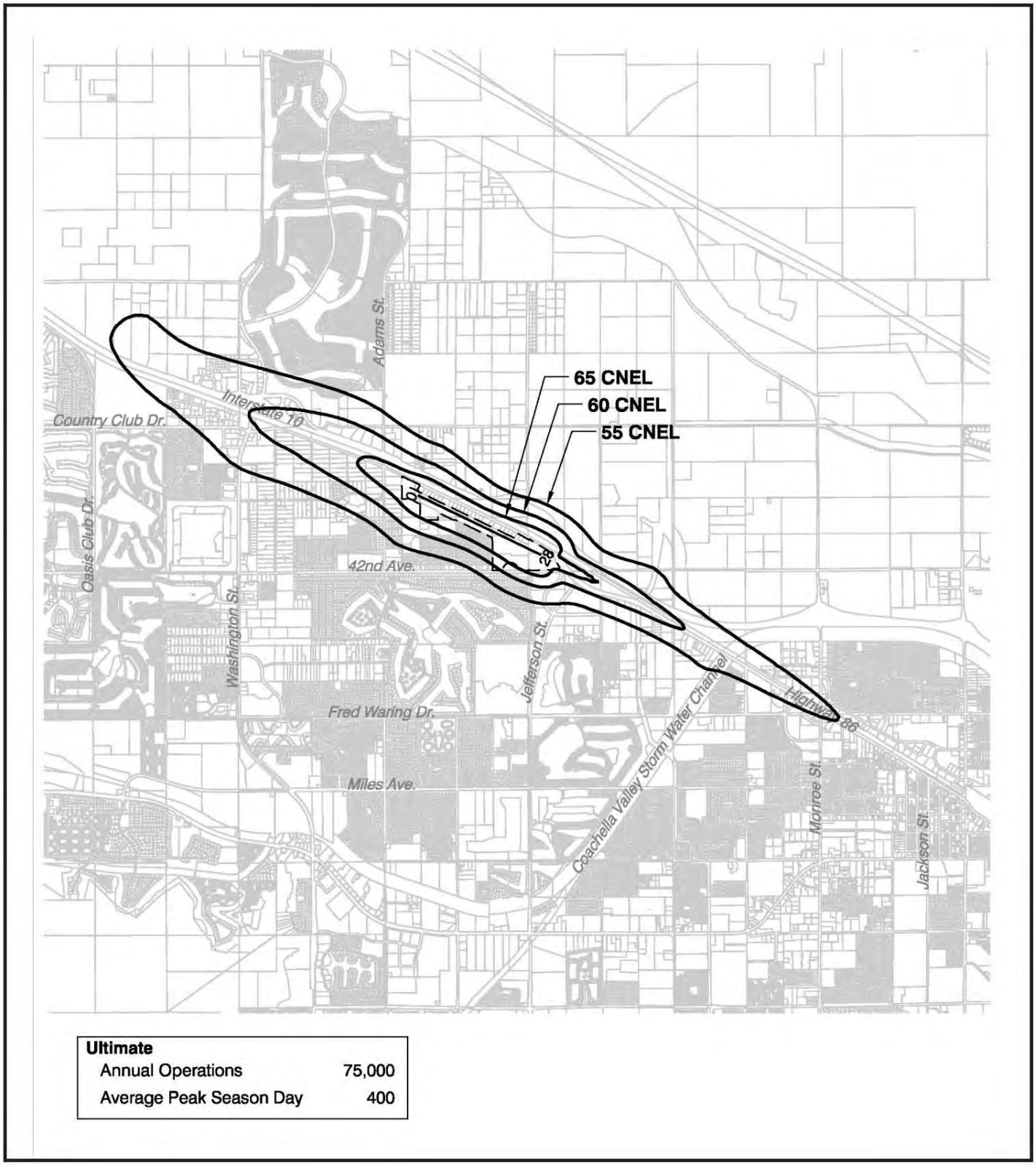

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.25

BERMUDA DUNES AIRPORT FUTURE NOISE CONTOURS: AVERAGE PEAK SEASON DAY

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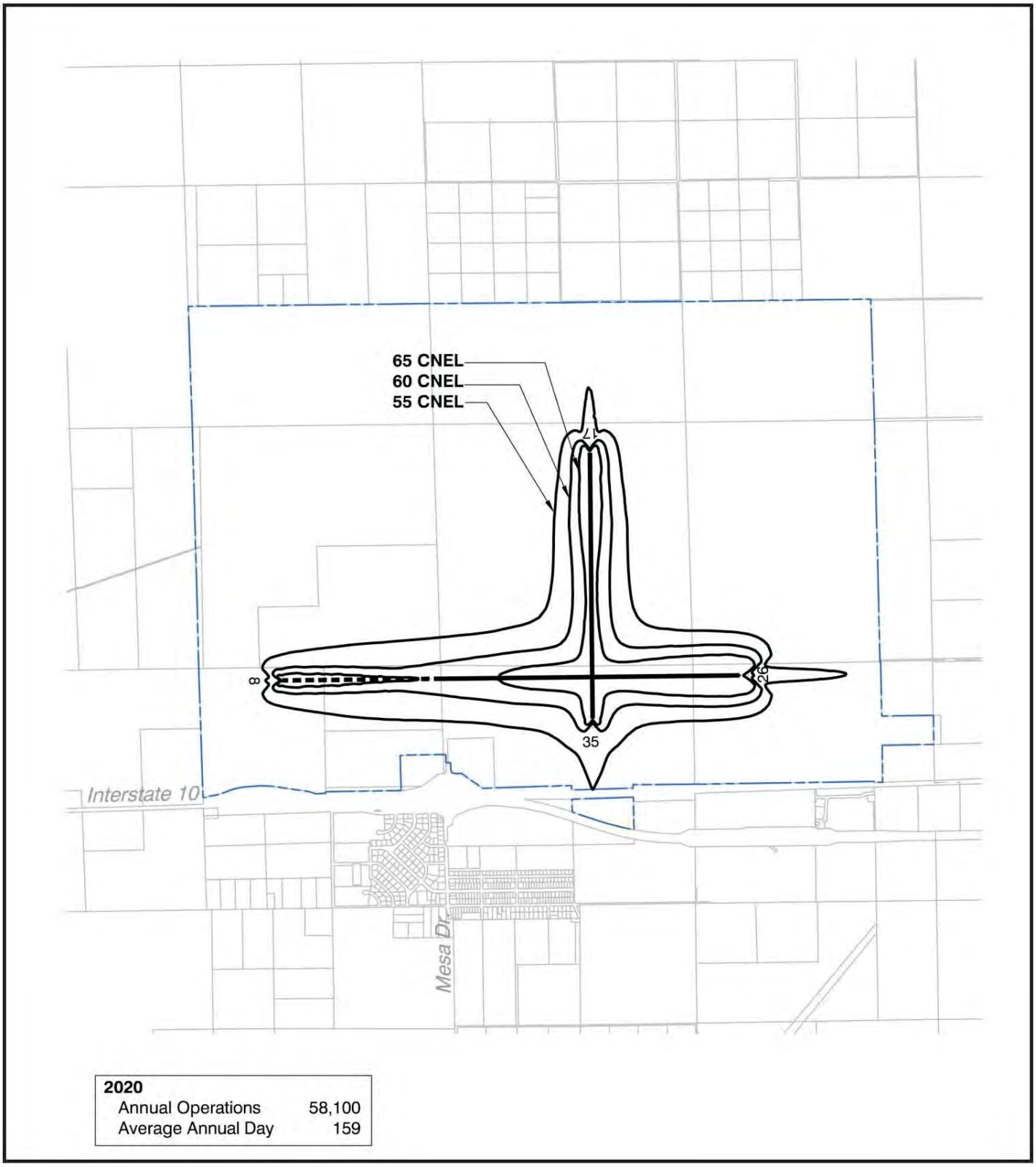

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.26

BLYTHE MUNICIPAL AIRPORT
FUTURE NOISE CONTOURS

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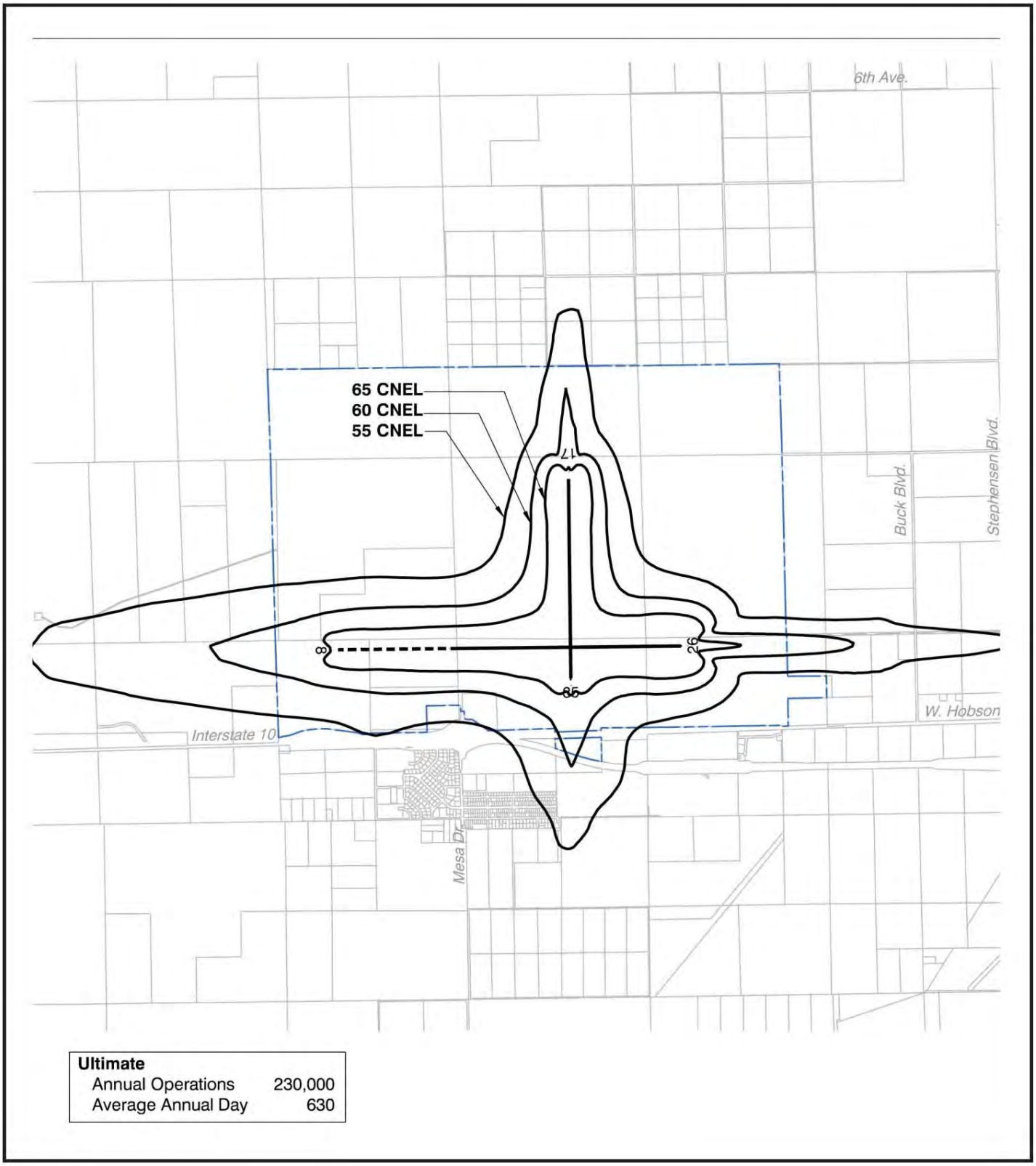

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.27

BLYTHE MUNICIPAL AIRPORT
ULTIMATE NOISE CONTOURS

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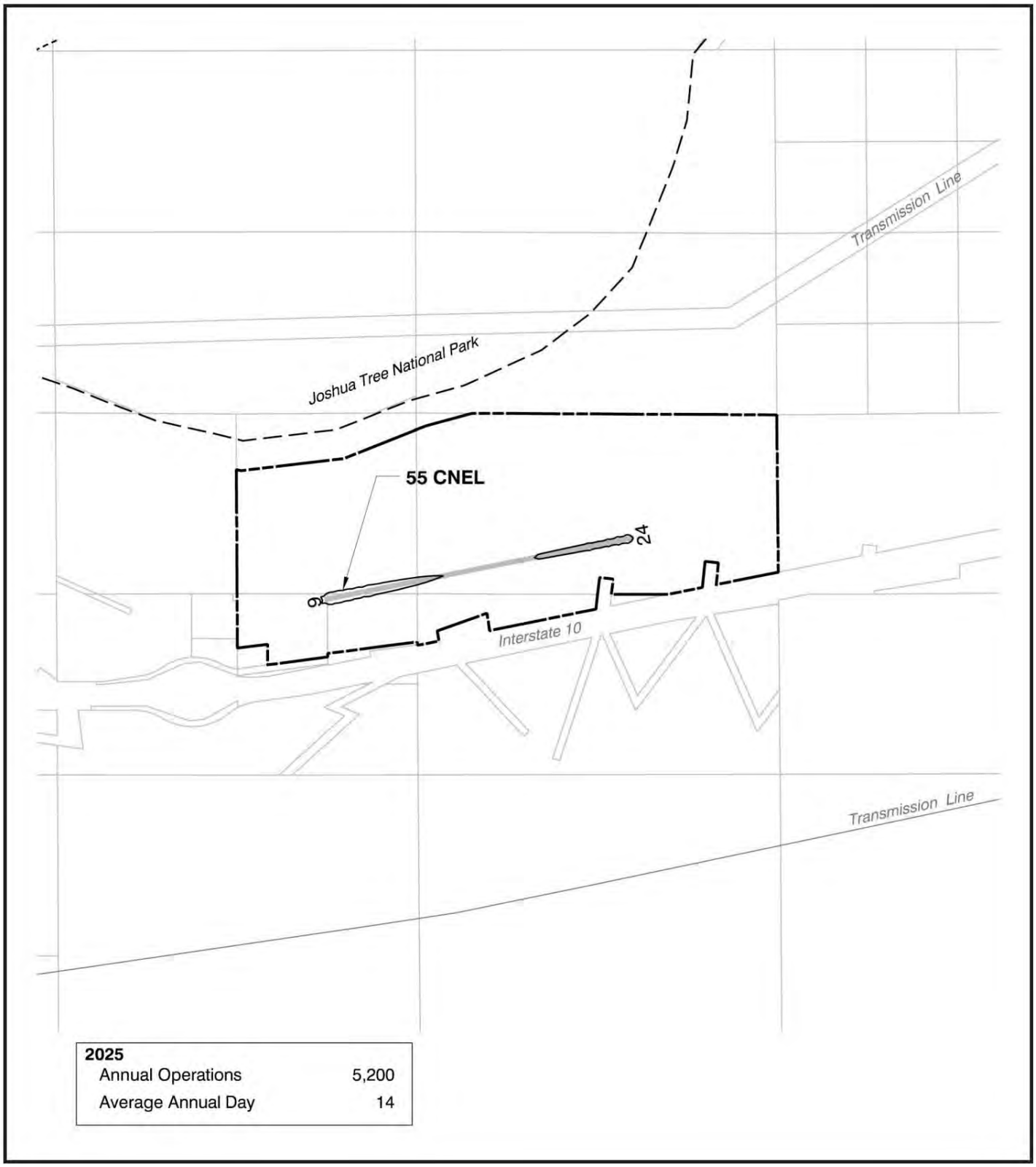

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.28

CHIRIACO SUMMIT AIRPORT
FUTURE NOISE CONTOURS

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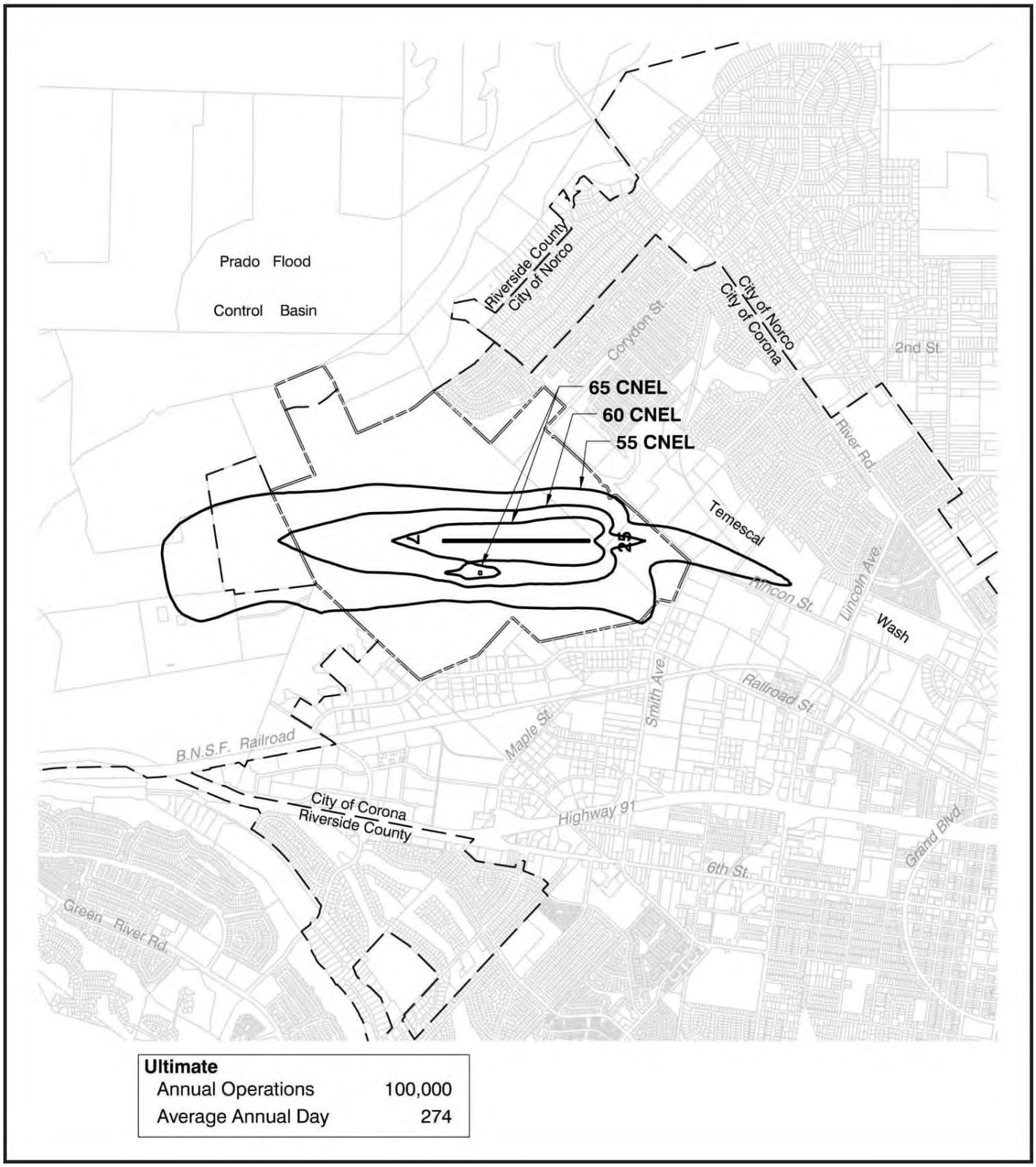

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.29

CORONA MUNICIPAL AIRPORT
FUTURE NOISE CONTOURS

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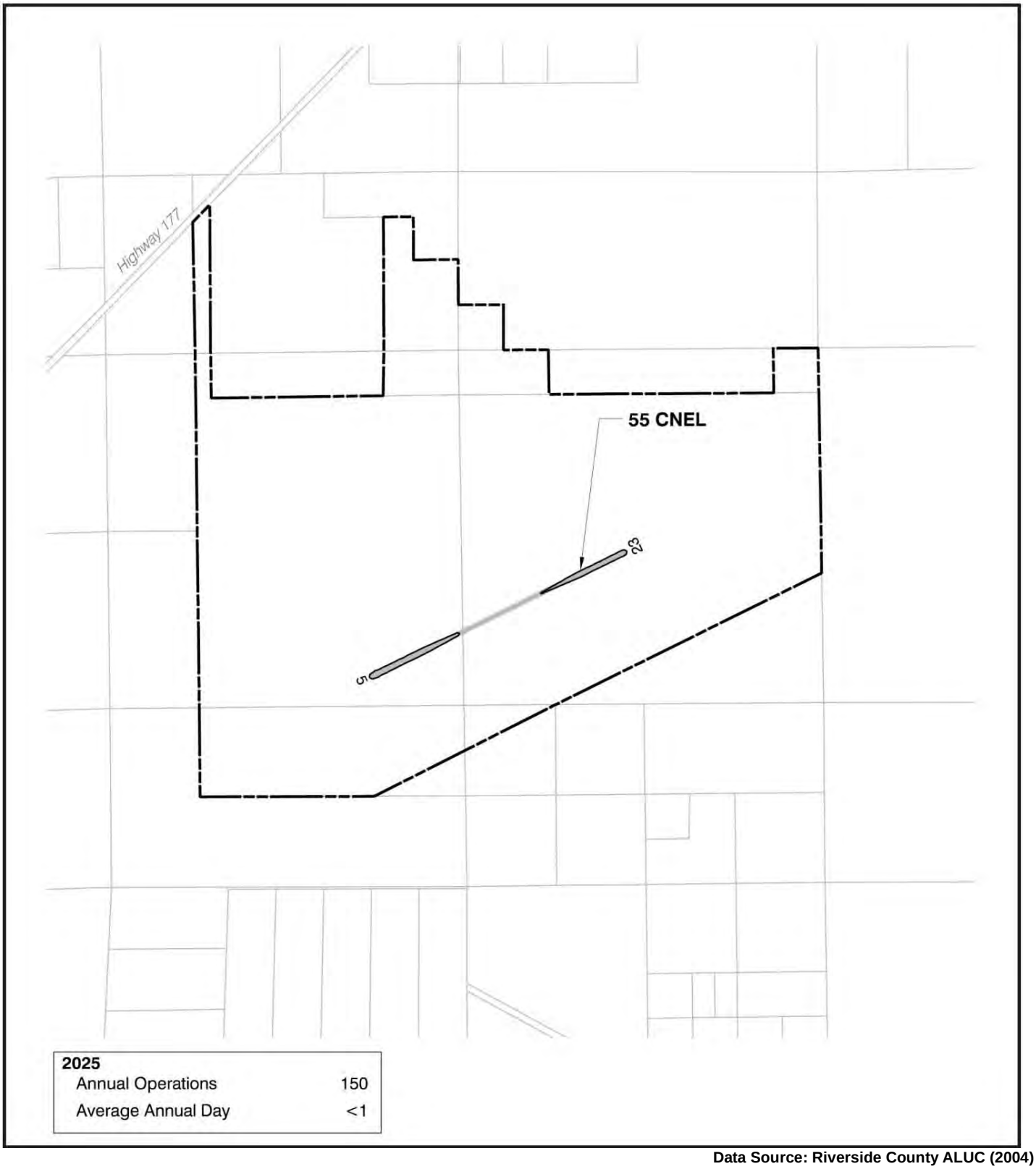

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.30

DESERT CENTER AIRPORT
FUTURE NOISE CONTOURS

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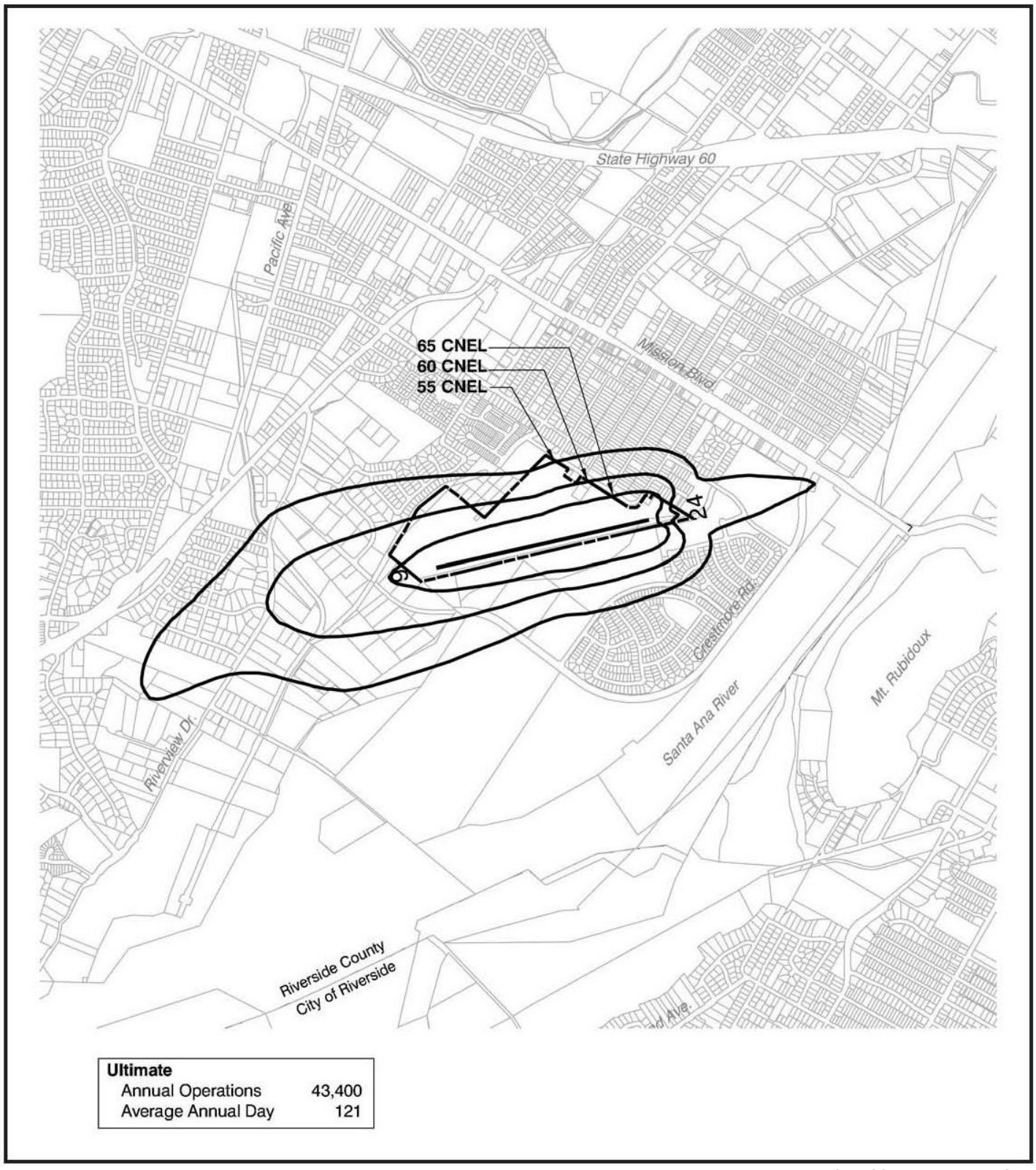

Data Source: Riverside County ALUC (2004)

December 16, 2013

Figure 4.15.31

FLABOB AIRPORT
FUTURE NOISE CONTOURS

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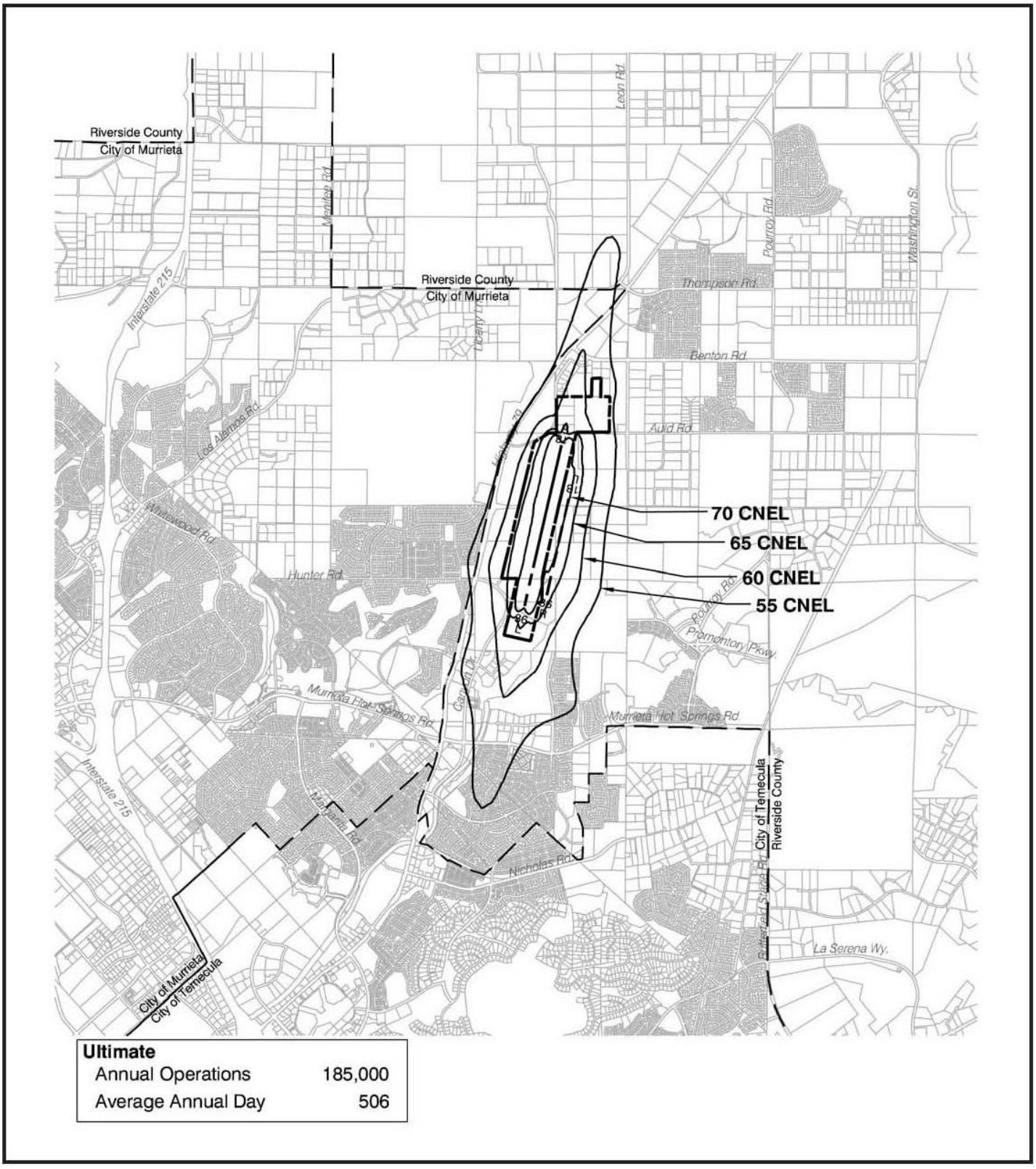

Data Source: Riverside County ALUC (2007)

December 16, 2013

Figure 4.15.32

FRENCH VALLEY AIRPORT
FUTURE NOISE CONTOURS

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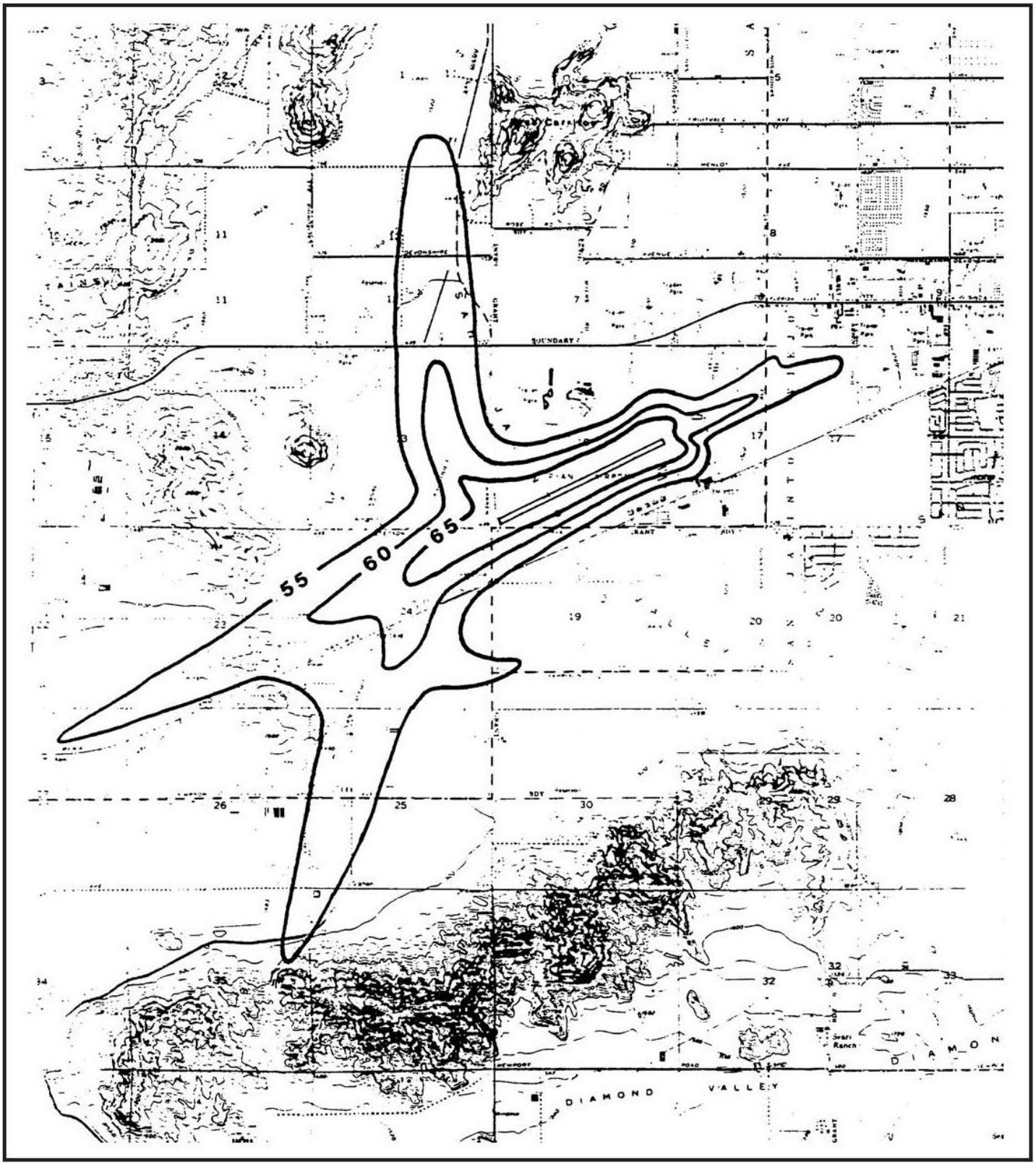

Data Source: Riverside County ALUC (1992)

December 16, 2013

Figure 4.15.33

HEMET RYAN AIRPORT
FUTURE (2005) NOISE CONTOURS

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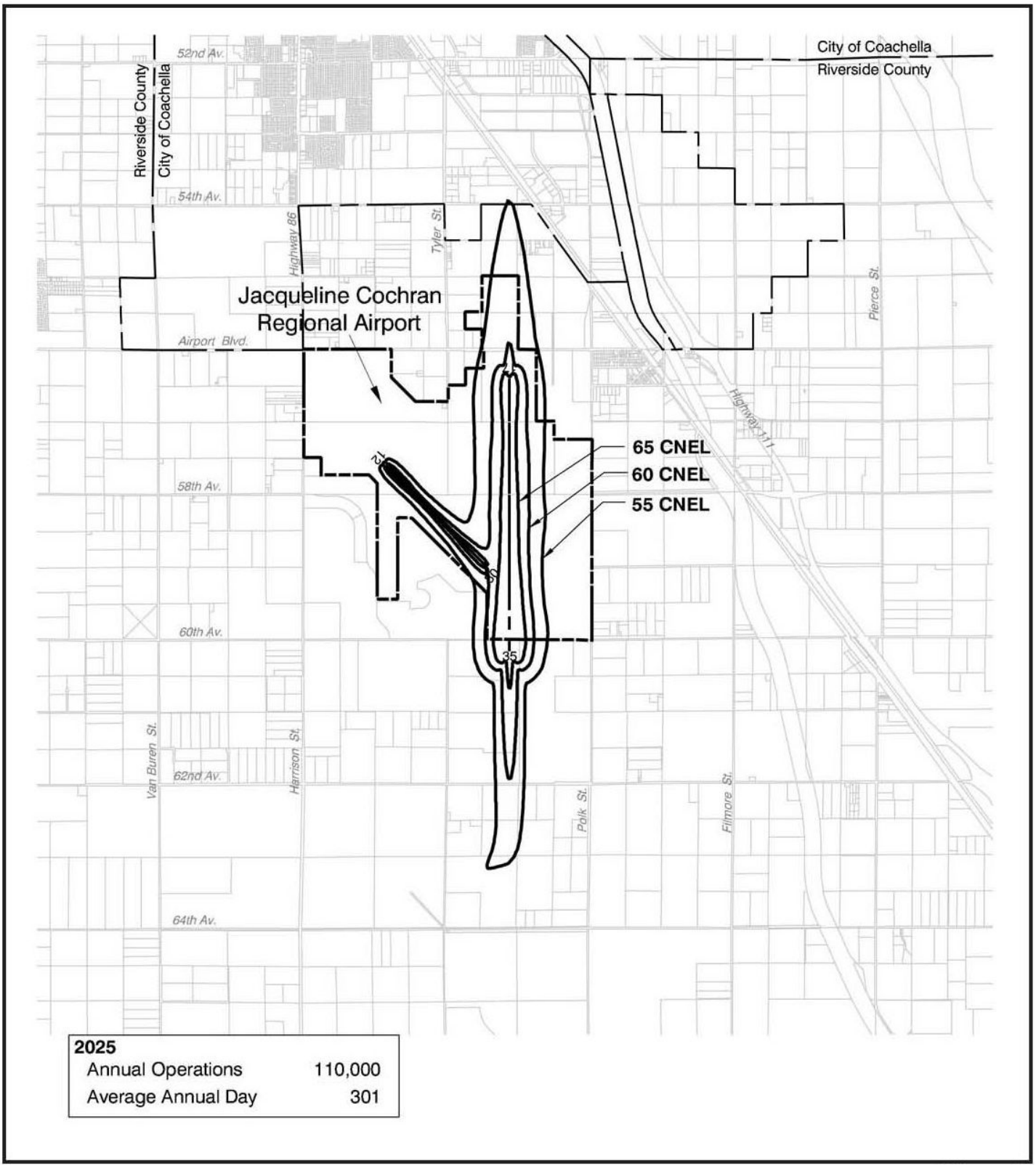

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.34

JACQUELINE COCHRAN AIRPORT
FUTURE NOISE CONTOURS

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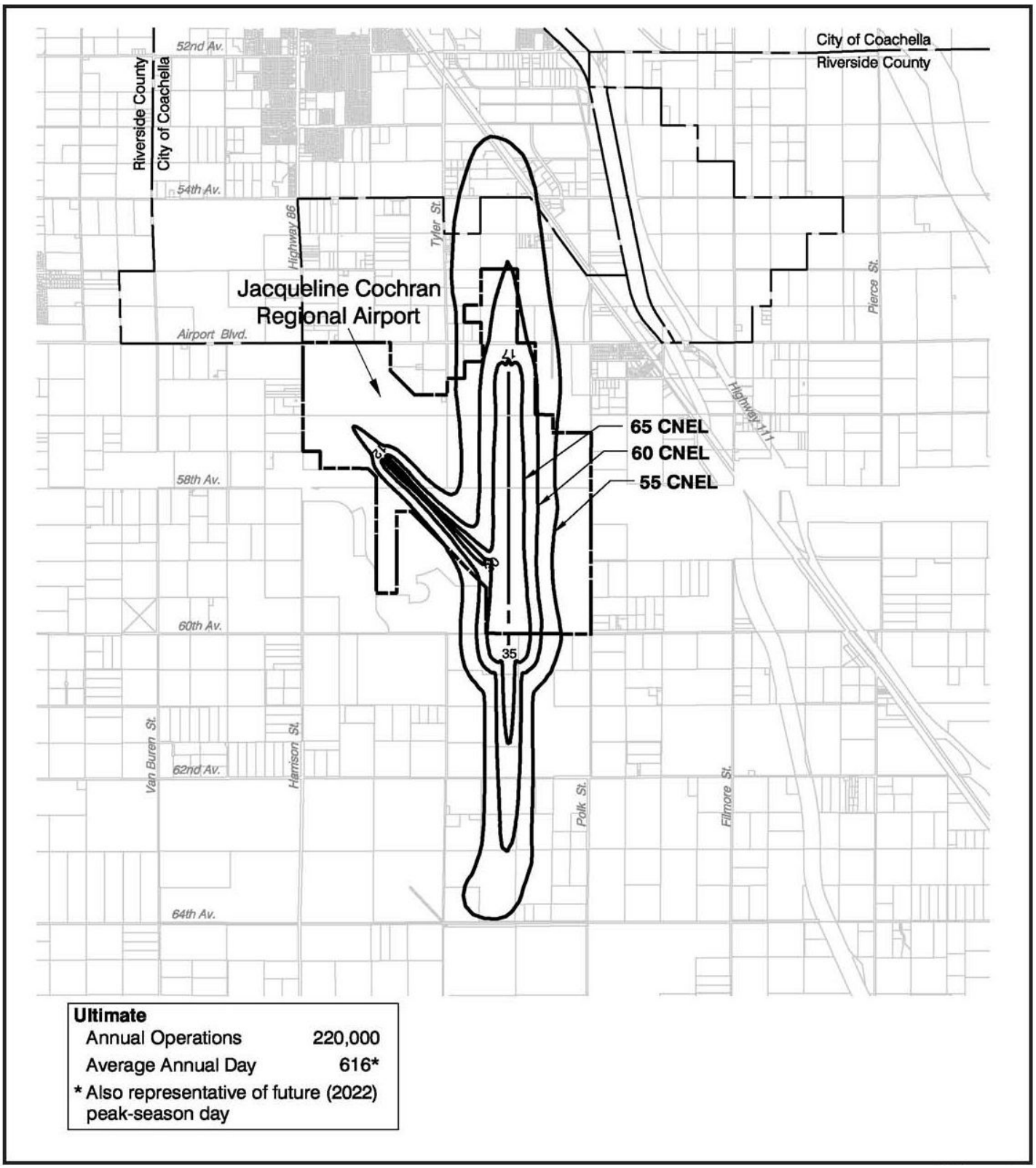

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.35

JACQUELINE COCHRAN AIRPORT
ULTIMATE NOISE CONTOURS

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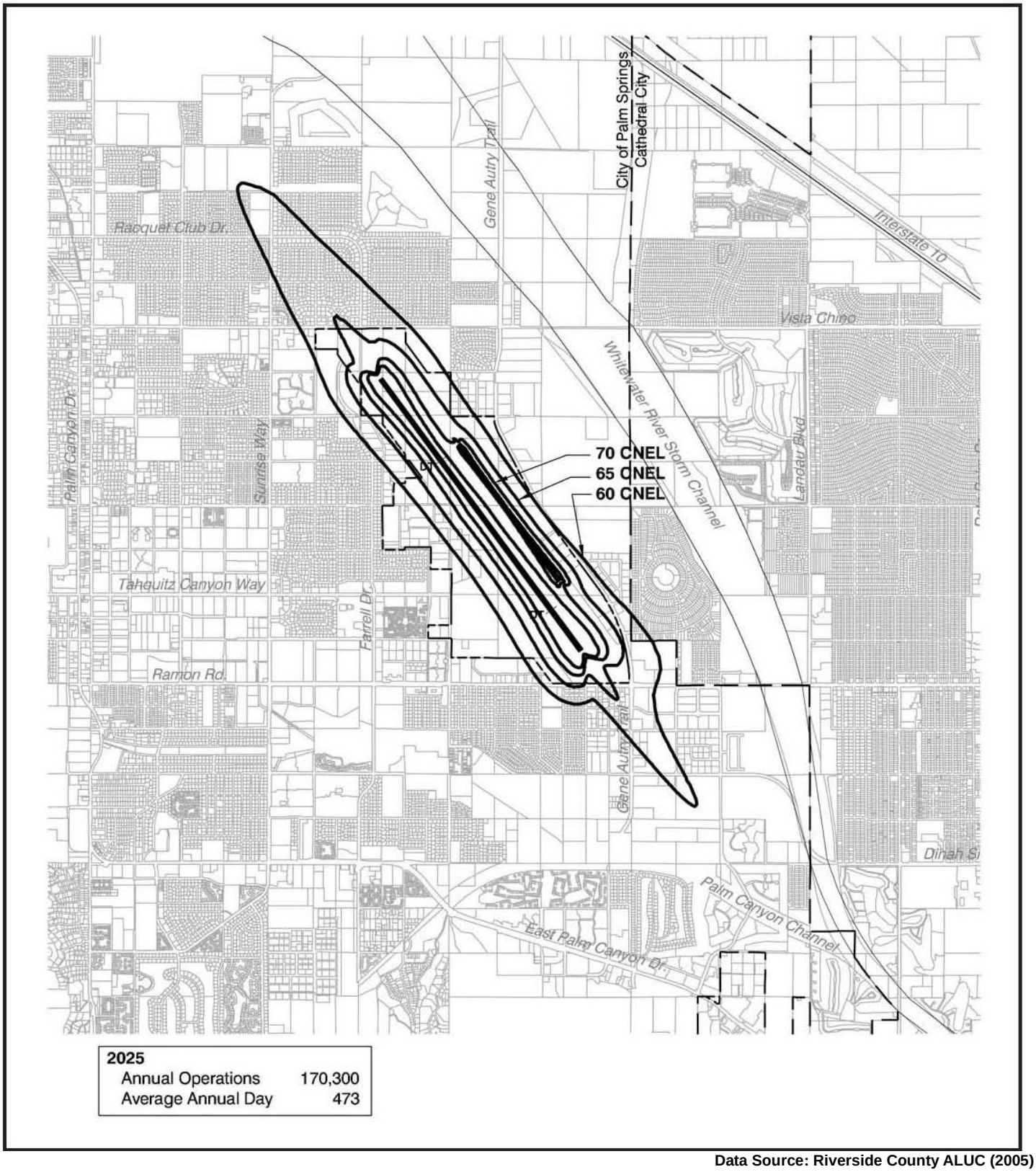

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.36

PALM SPRINGS INTERNATIONAL AIRPORT FUTURE NOISE CONTOURS

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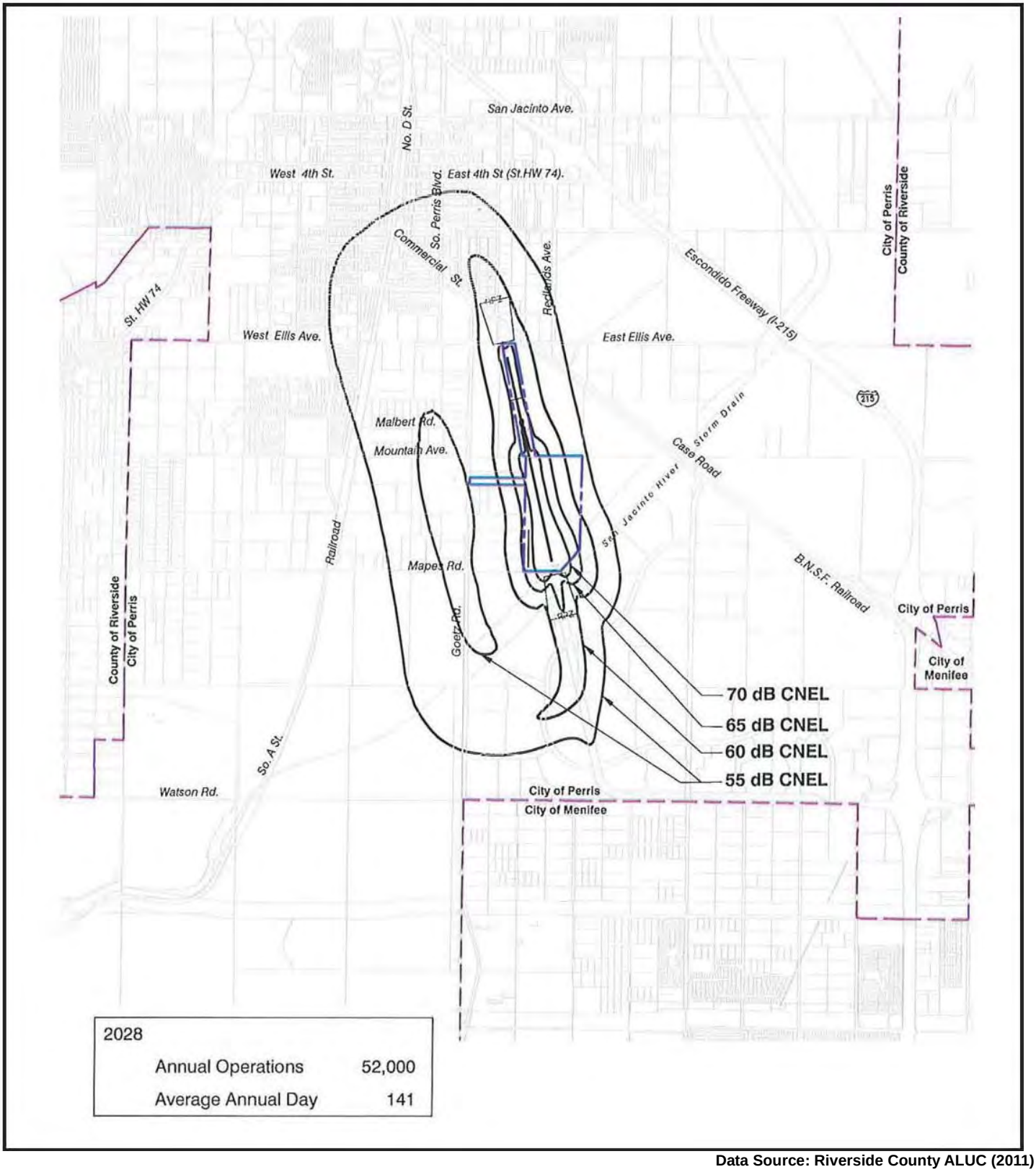

Data Source: Riverside County ALUC (2011)

December 16, 2013

Figure 4.15.37

PERRIS VALLEY AIRPORT
ULTIMATE NOISE CONTOURS

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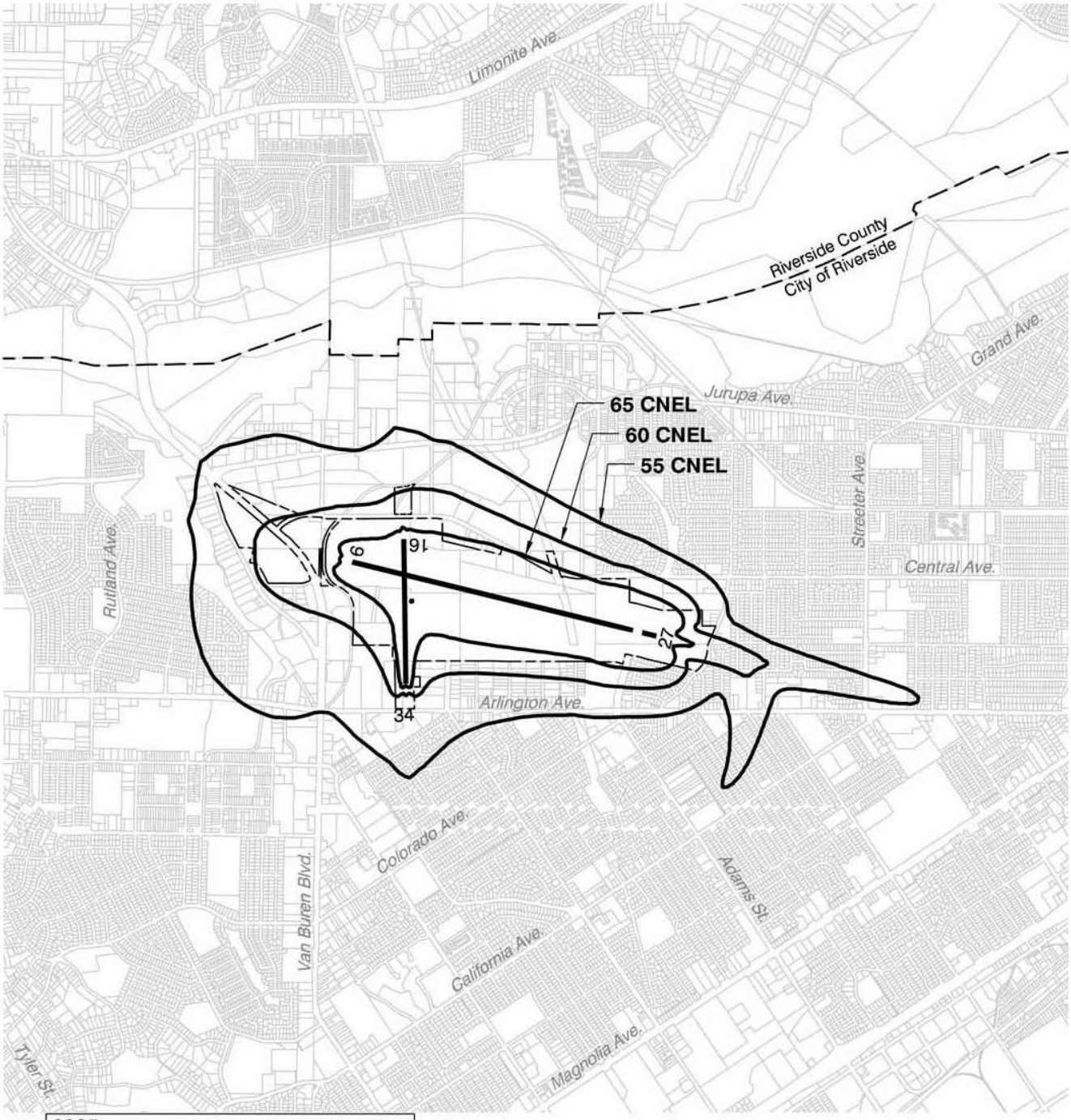

Data Source: Riverside County ALUC (2005)

December 16, 2013

Figure 4.15.38

RIVERSIDE MUNICIPAL AIRPORT
FUTURE NOISE CONTOURS

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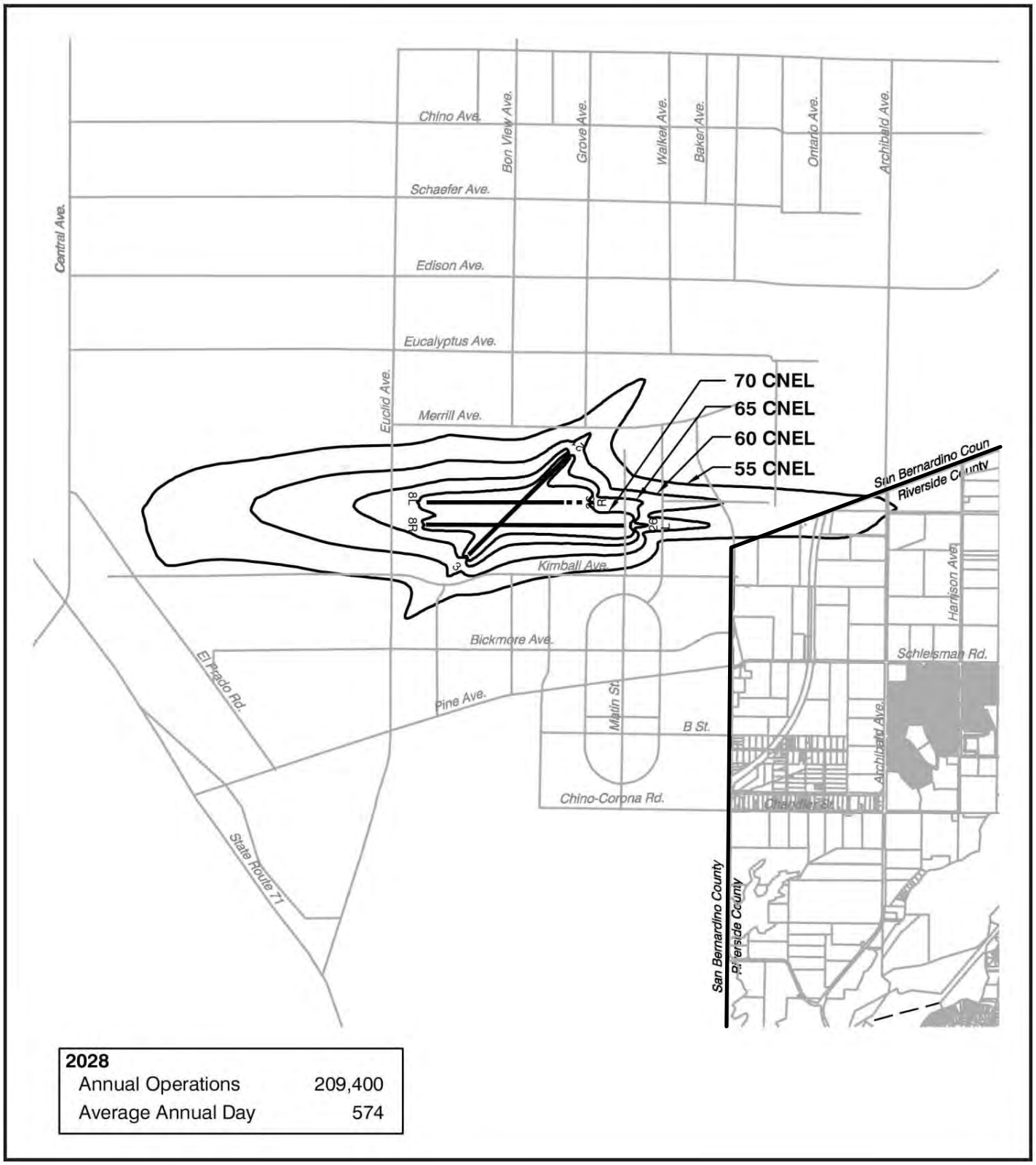

Data Source: Riverside County ALUC (2008)

December 16, 2013

Figure 4.15.39

CHINO AIRPORT
FUTURE NOISE CONTOURS

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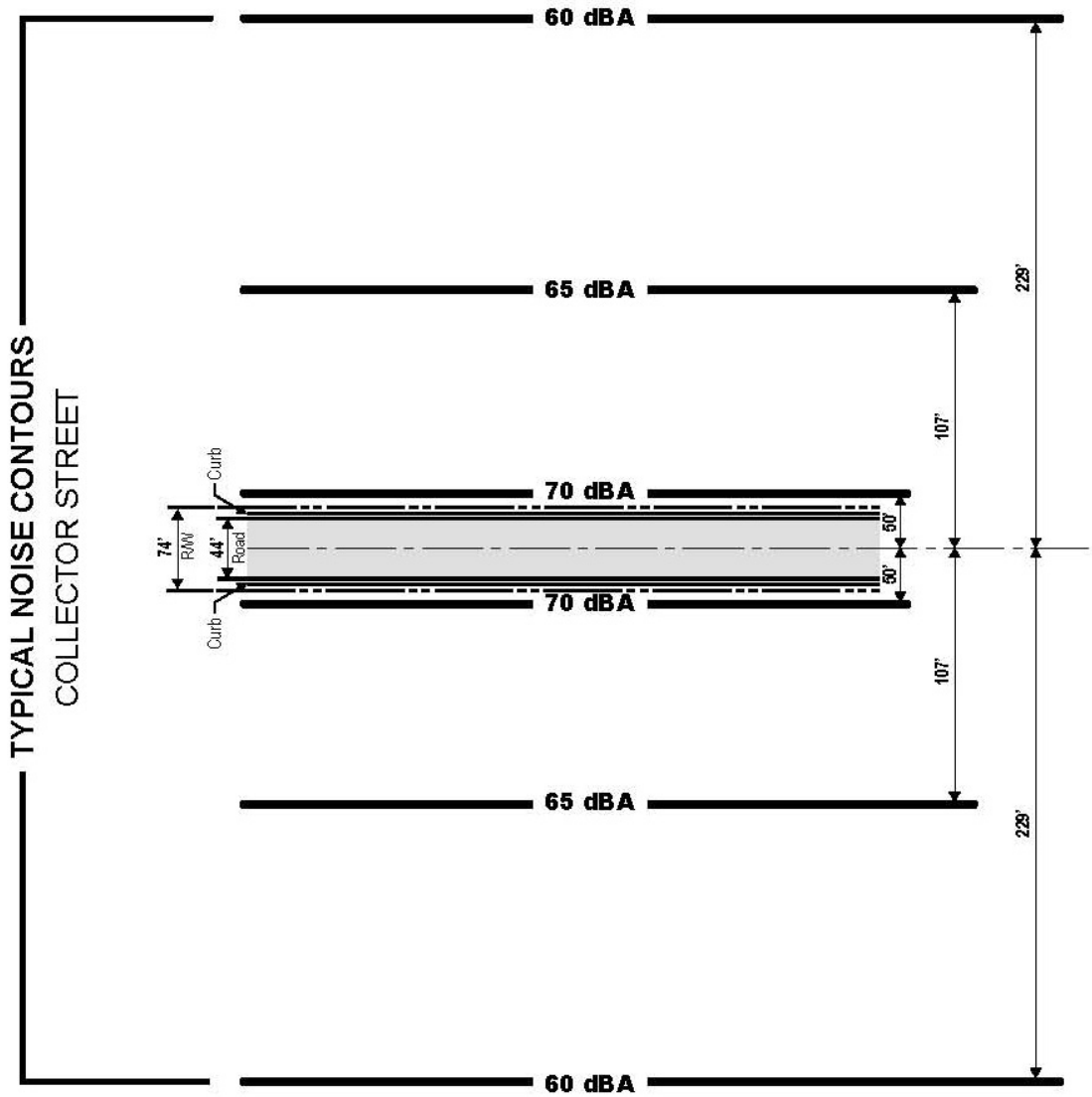

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.40

PROJECTED NOISE CONTOURS: TYPICAL COLLECTOR STREET (2 LANES)

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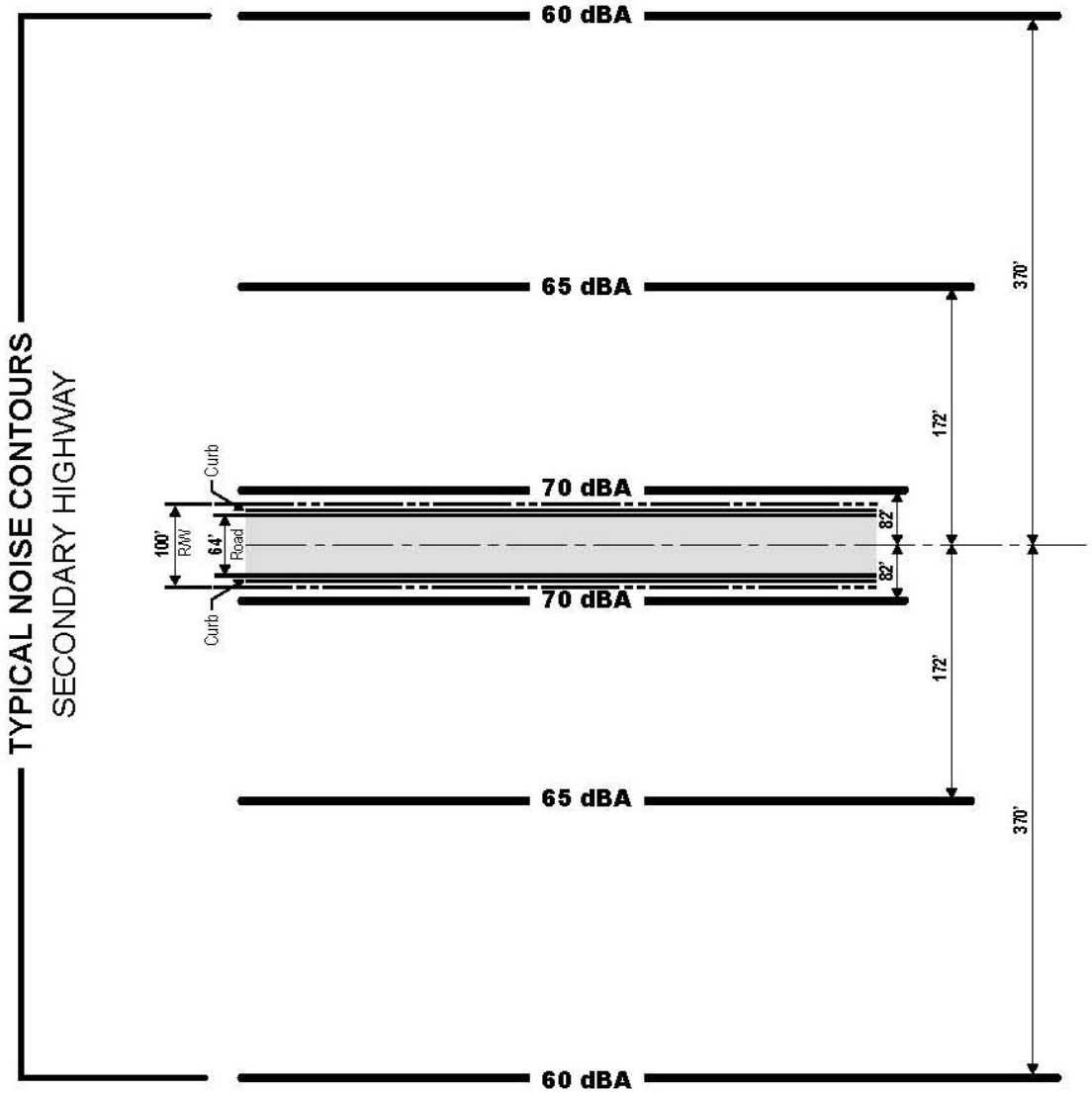

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.41

PROJECTED NOISE CONTOURS: TYPICAL SECONDARY HIGHWAY (4 LANES)

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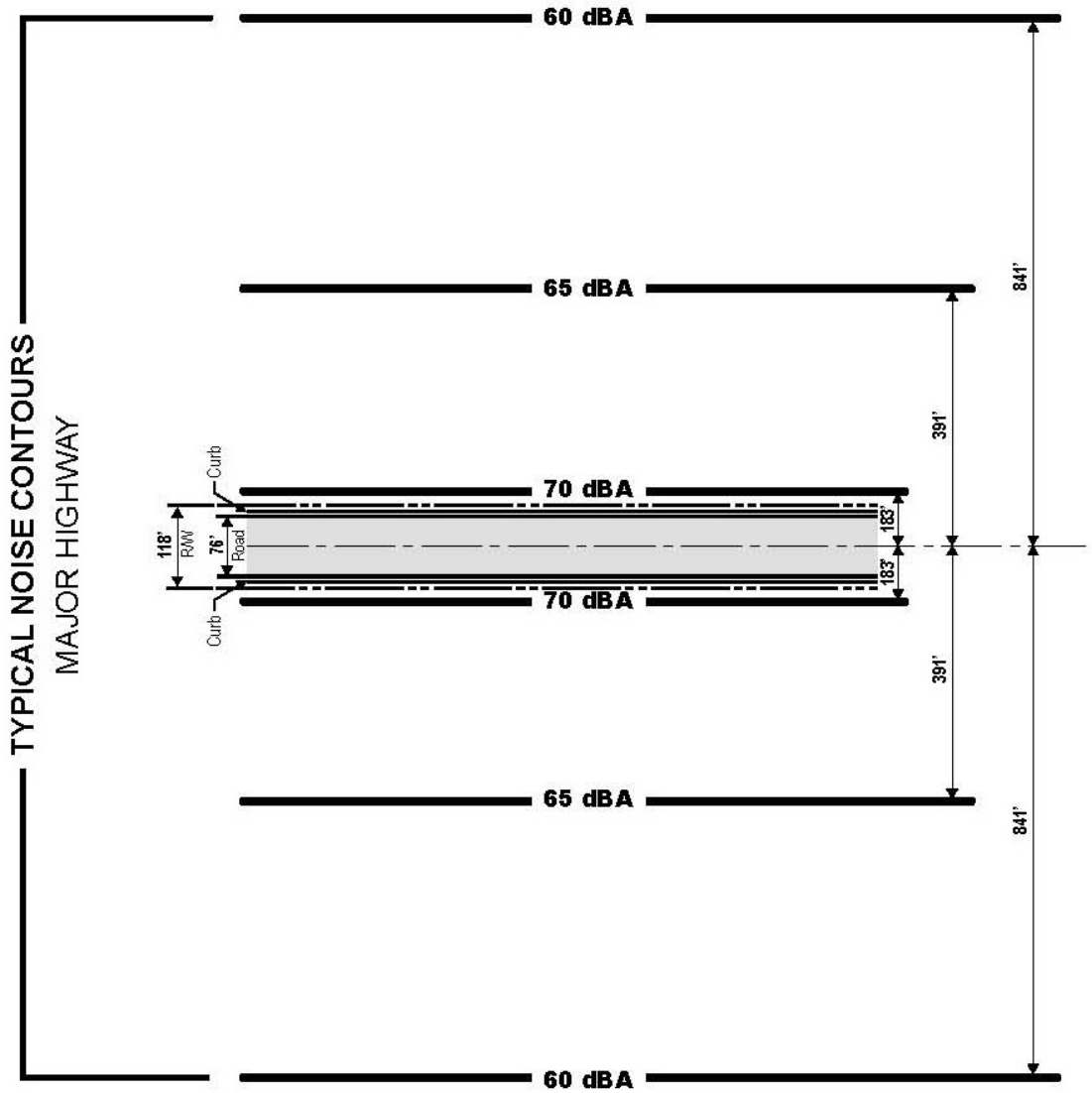

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.42

PROJECTED NOISE CONTOURS: TYPICAL MAJOR HIGHWAY (4 LANES)

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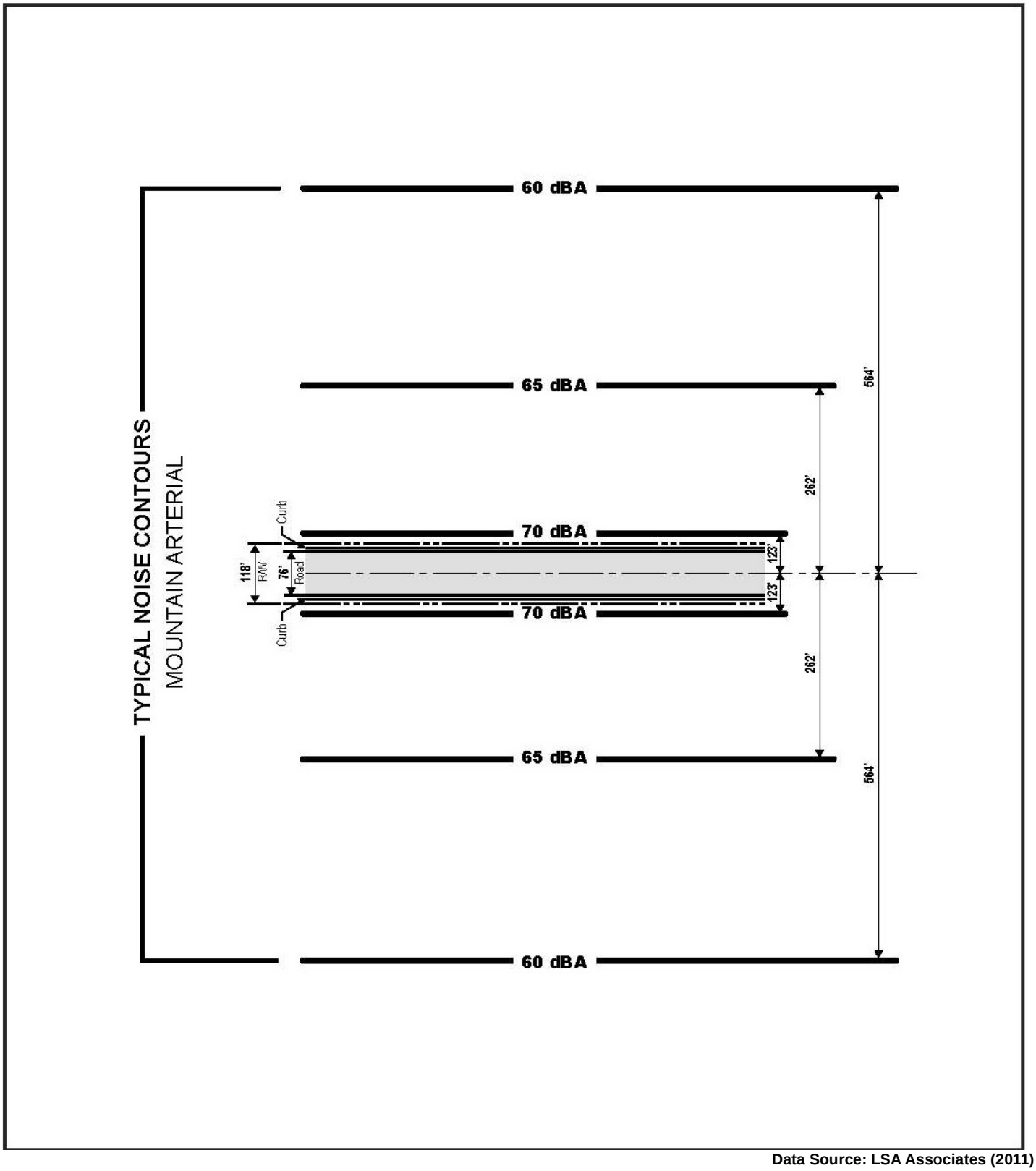

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.43

PROJECTED NOISE CONTOURS: TYPICAL MOUNTAIN ARTERIAL (4 LANES)

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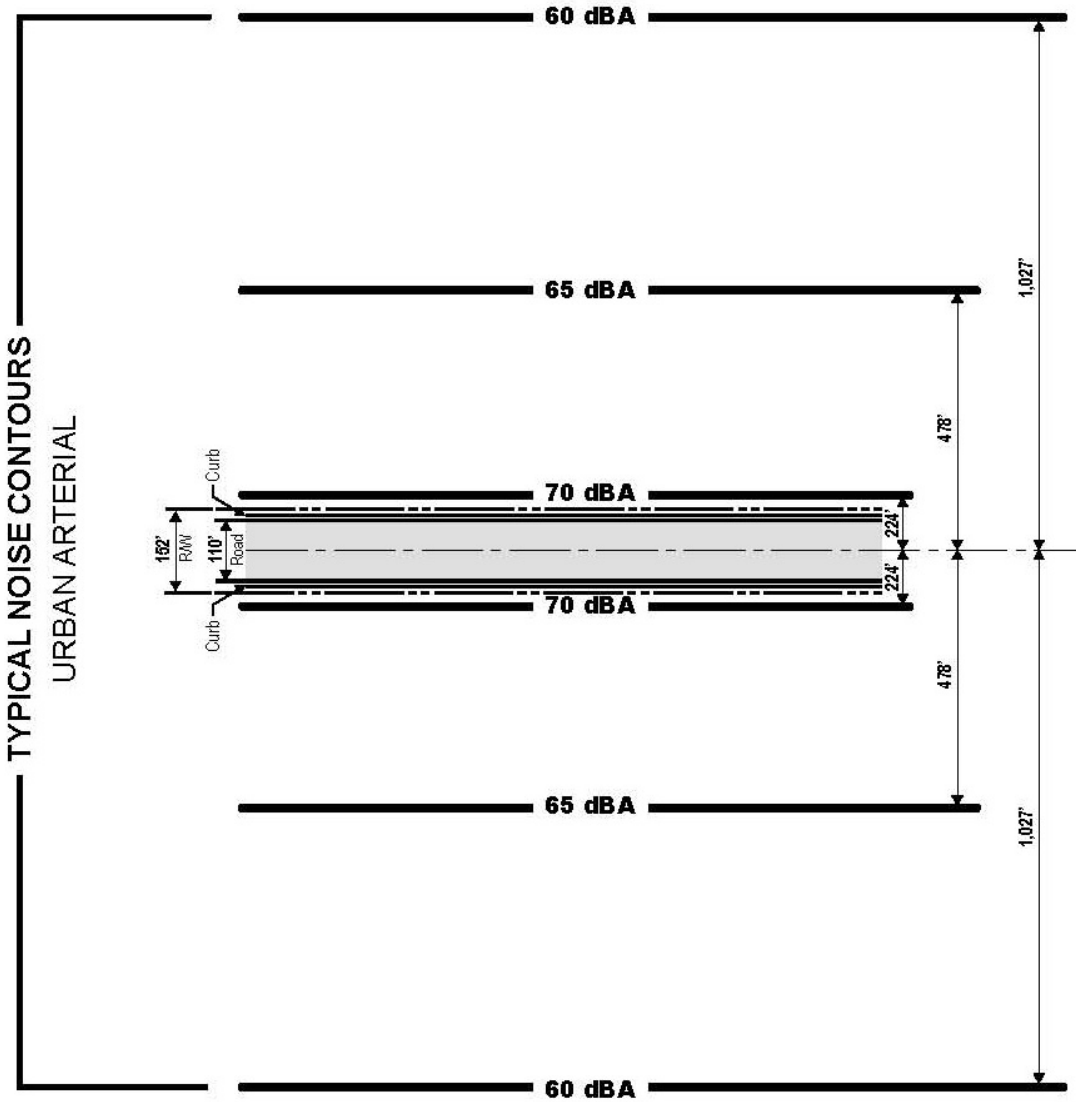

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.44

PROJECTED NOISE CONTOURS: TYPICAL URBAN ARTERIAL (6 LANES)

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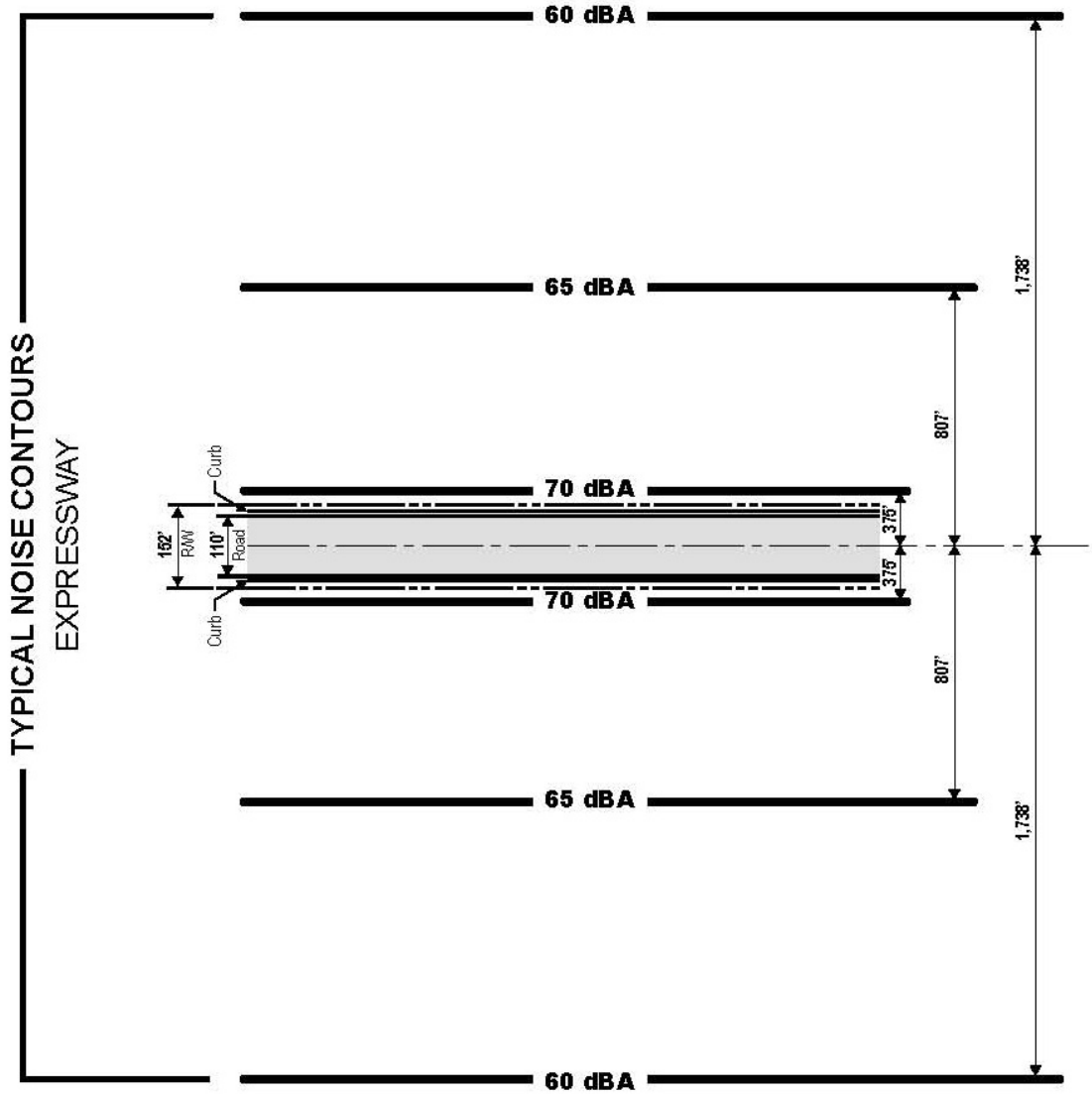

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.45

PROJECTED NOISE CONTOURS: TYPICAL EXPRESSWAY (6 LANES)

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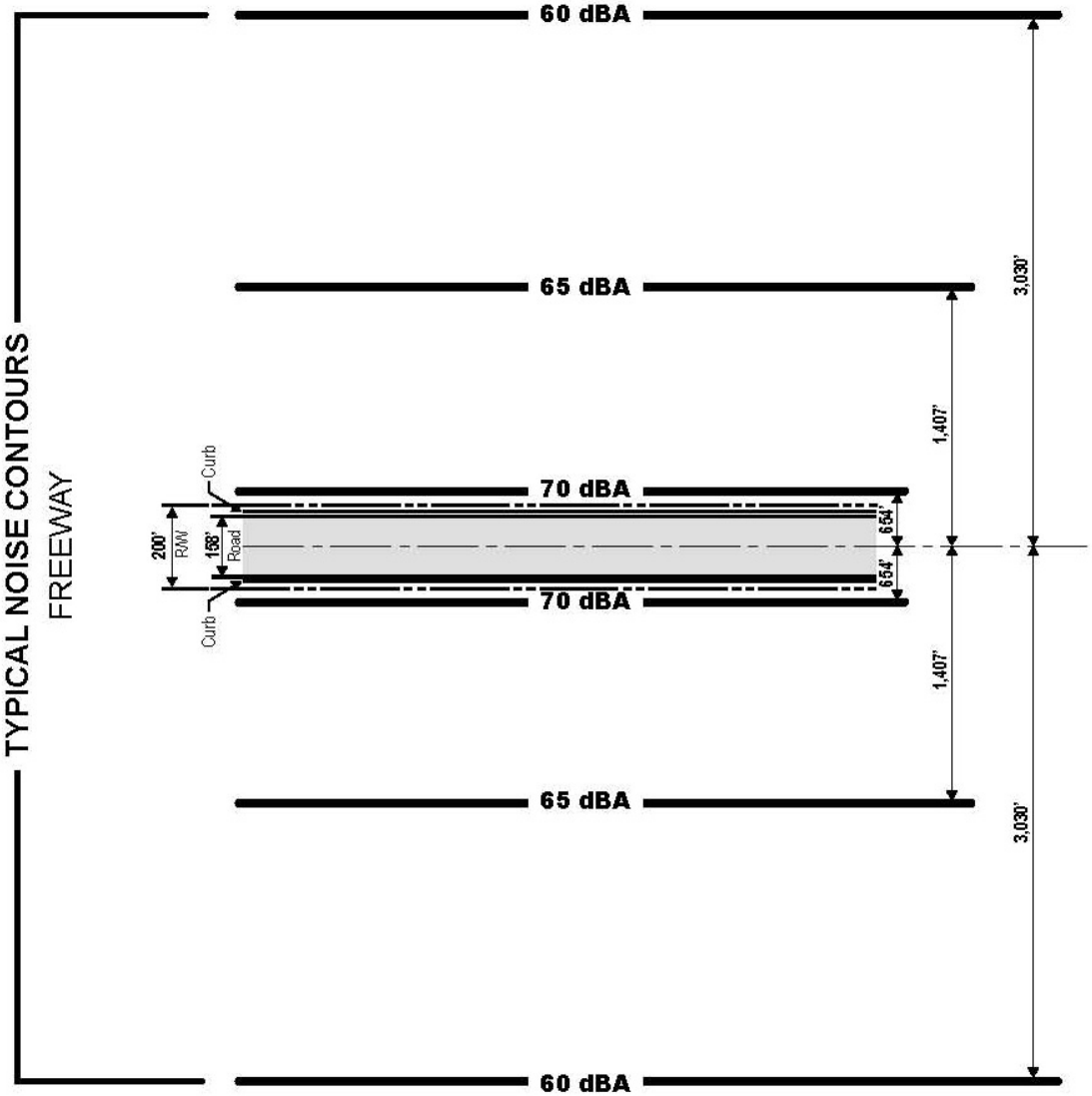

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.46

PROJECTED NOISE CONTOUR: TYPICAL FREEWAY (6 LANES)

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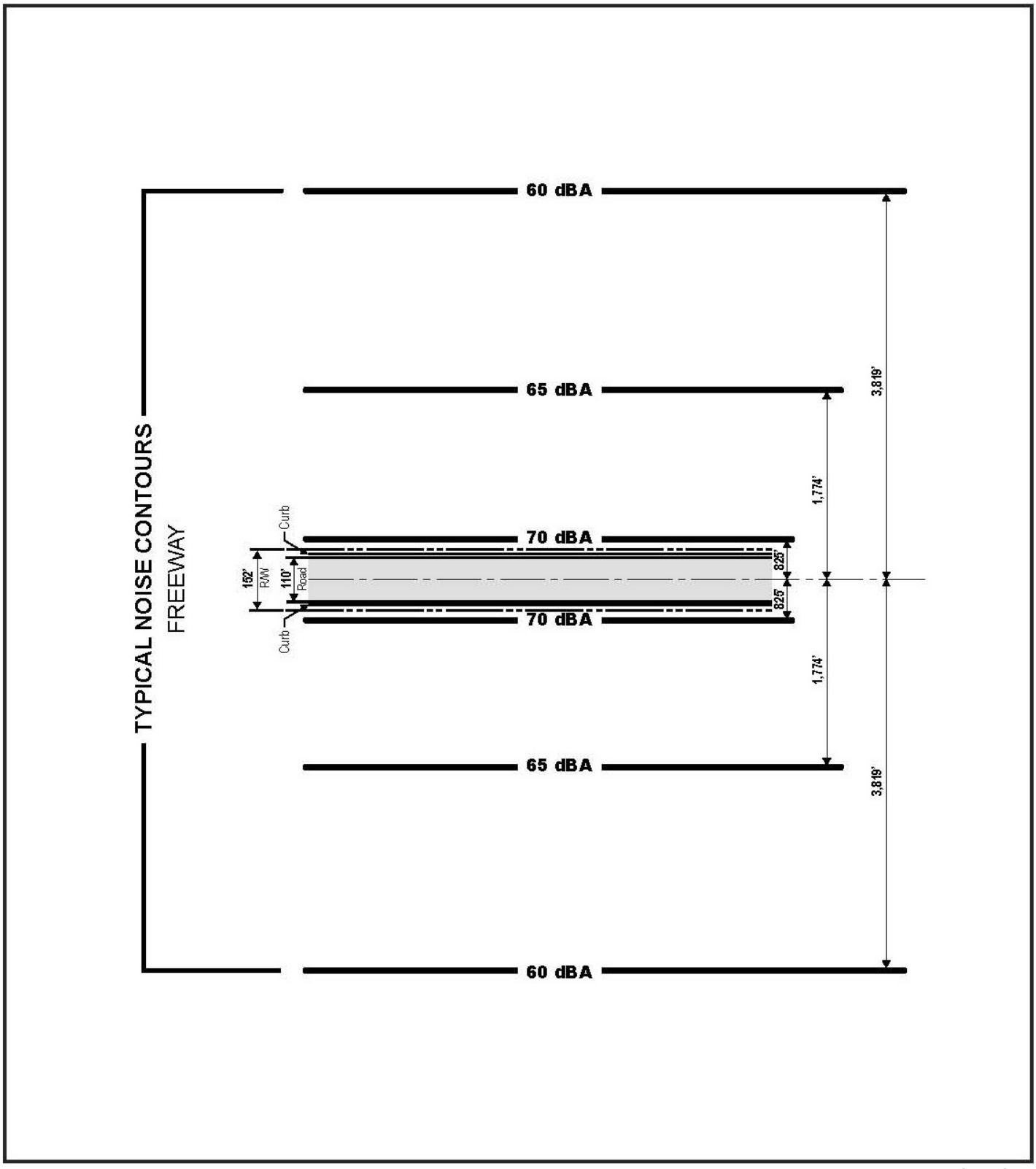

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.47

PROJECTED NOISE CONTOURS: TYPICAL FREEWAY (10 LANES)

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Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.48

PROJECTED NOISE CONTOURS: GRAND AVE BETWEEN CACTUS AVENUE AND ORTEGA HIGHWAY

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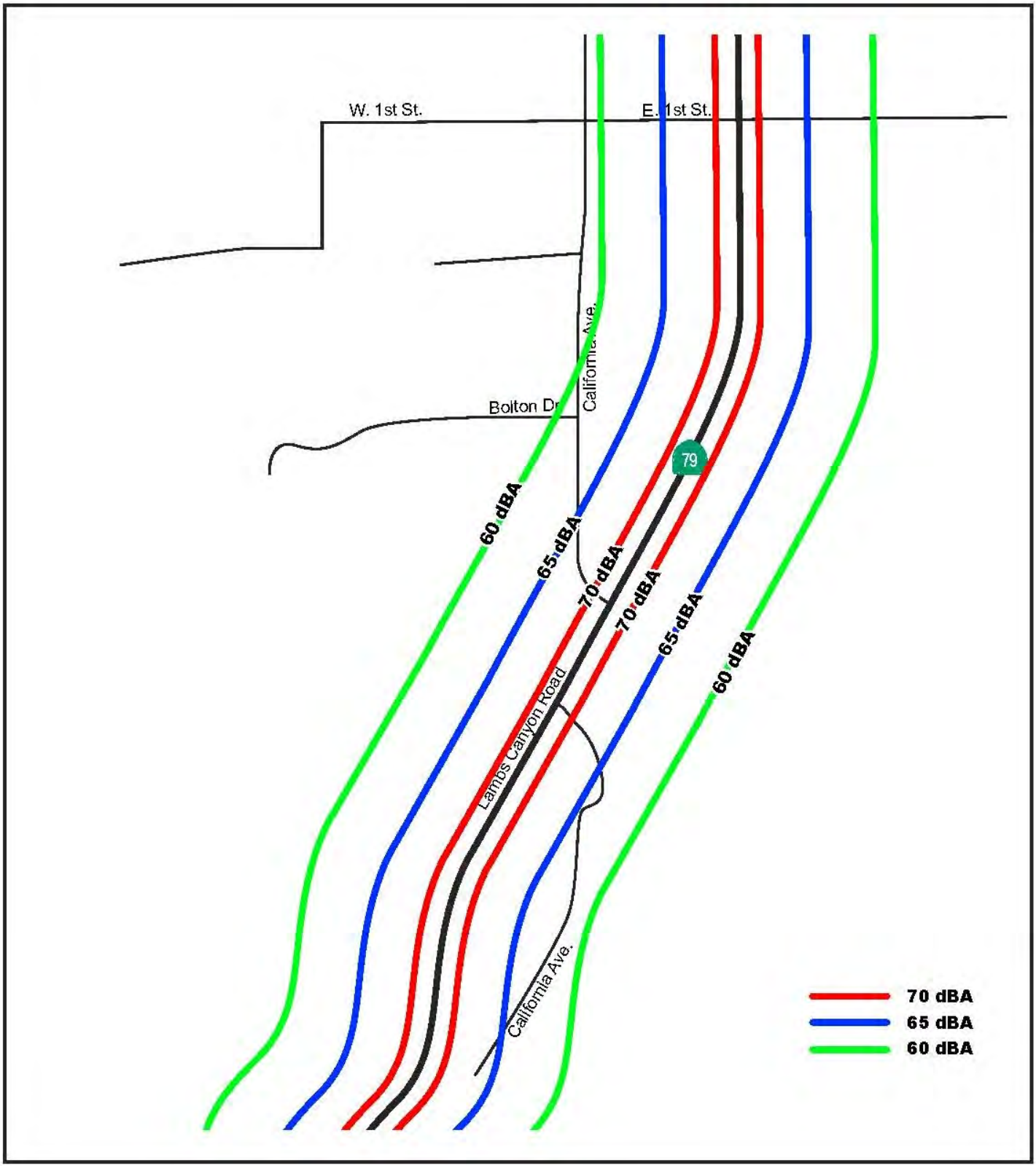

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.49

PROJECTED NOISE CONTOURS: STATE ROUTE 79 BETWEEN GILMAN SPRINGS ROAD AND MELLOW LANE

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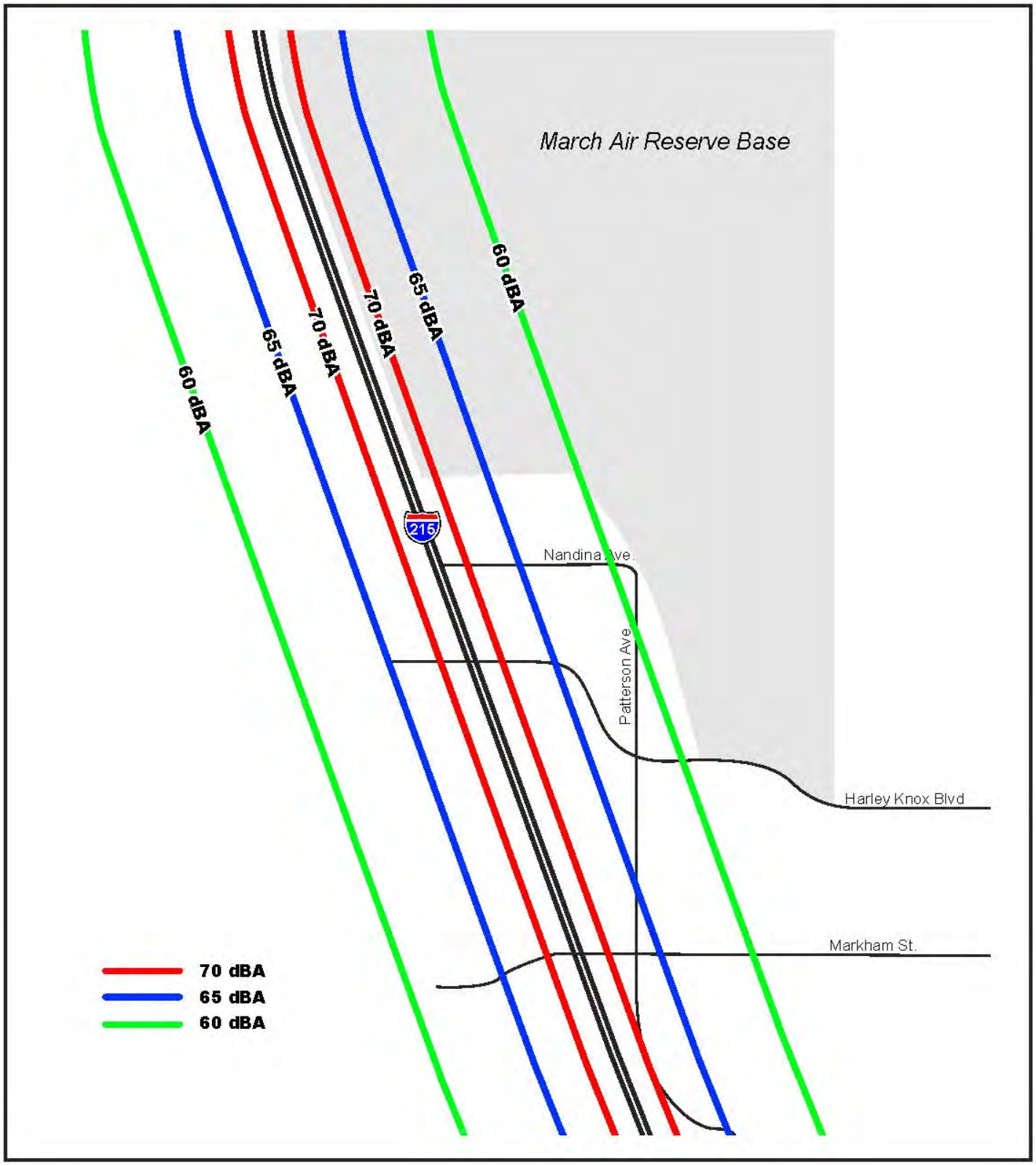

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.50

PROJECTED NOISE CONTOURS: I-215 BETWEEN VAN BUREN BLVD AND RAMONA EXPRESSWAY

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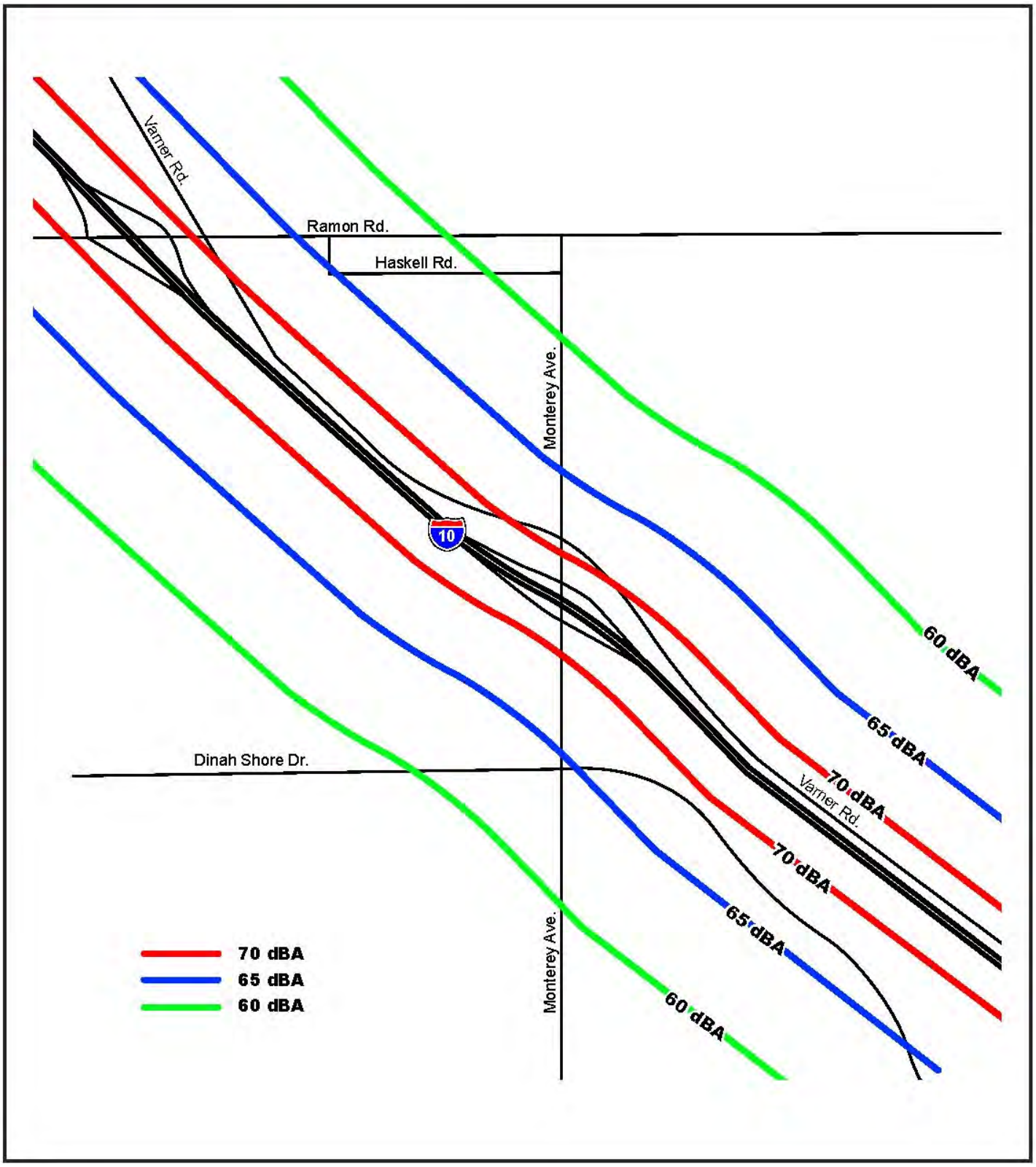

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.51

PROJECTED NOISE CONTOURS: I-10 BETWEEN MONTEREY AVENUE AND RAMON ROAD

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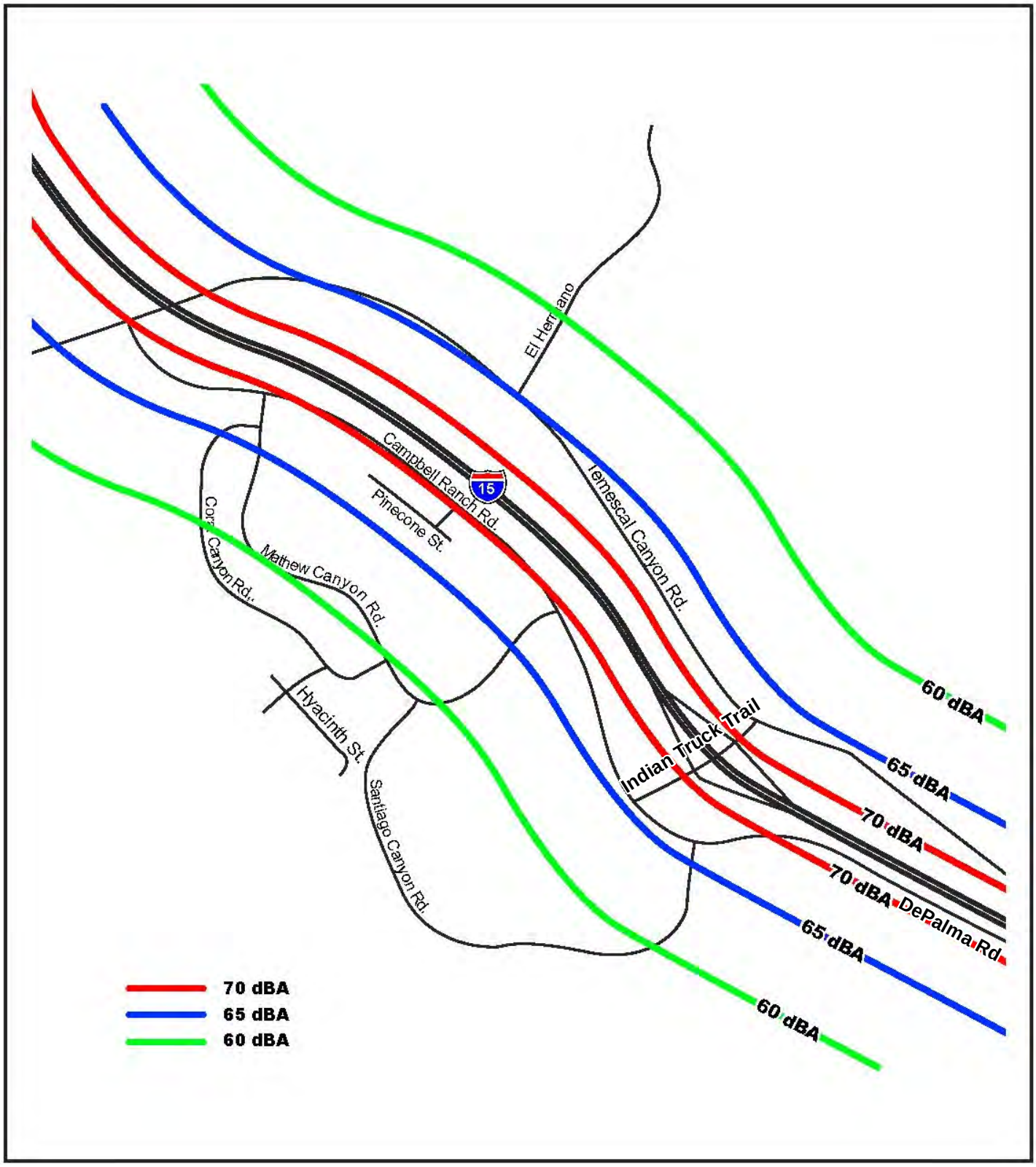

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.52

PROJECTED NOISE CONTOURS: I-15 BETWEEN TEMESCAL CANYON ROAD AND INDIAN TRUCK TRAIL

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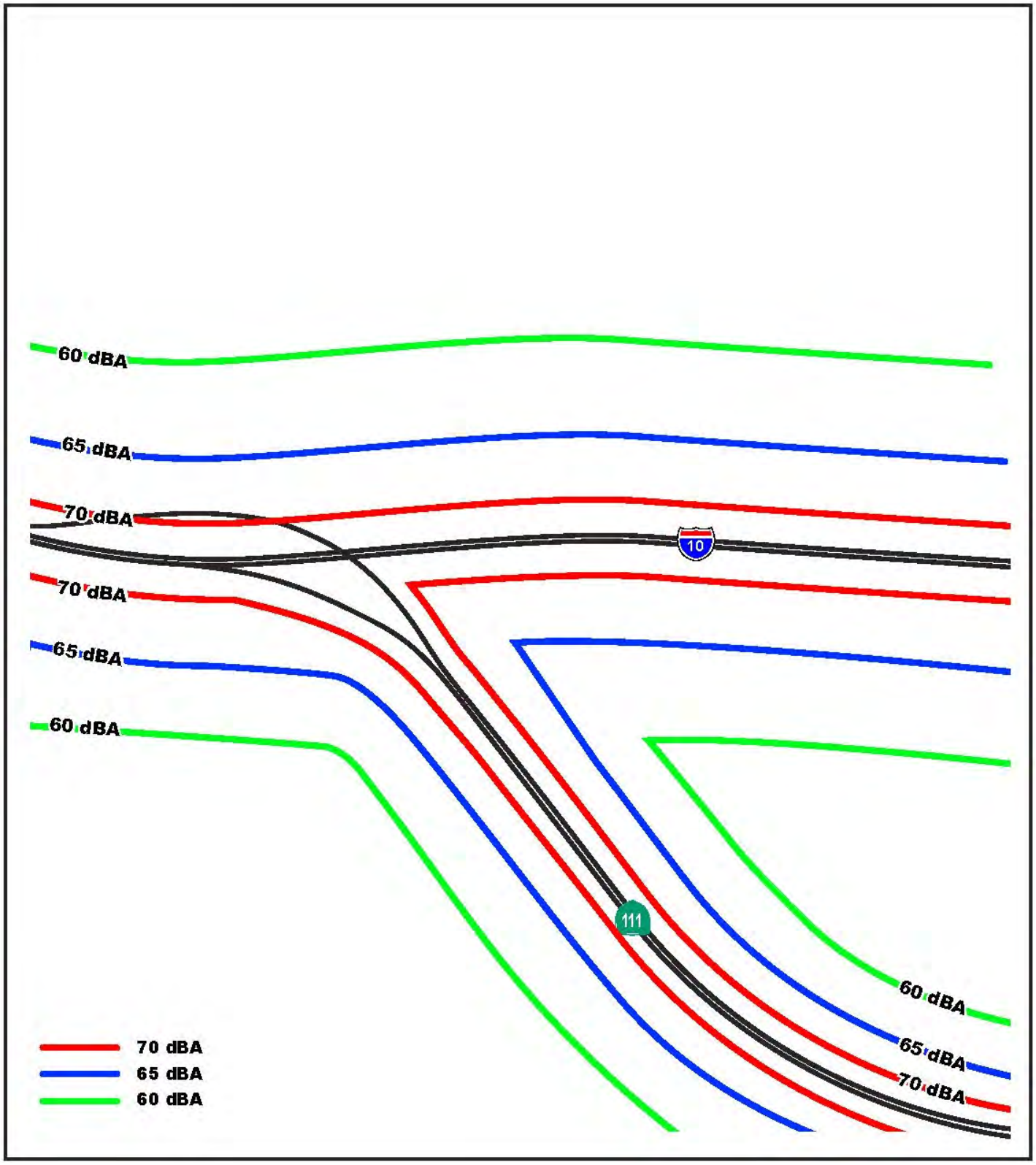

Data Source: LSA Associates (2011)

December 16, 2013

Figure 4.15.53

PROJECTED NOISE CONTOURS:
I-10 AT STATE HIGHWAY 111

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Table 4.15-M, above, provides a projection of roadway-related noise levels expected at General Plan build out (2060) both with and without the project. It also includes the same data for the baseline year (2007) to allow for comparison to existing conditions. These values provide a sampling of representative roadway segments throughout unincorporated Riverside County. They indicate where existing noise levels may already exceed acceptable standards (e.g., 55 dBA) or would do so upon General Plan build out as a result of incremental traffic increases over time. These results are based on the traffic data generated for this project, as described in Section 4.18 (Transportation and Circulation).

It should be noted that the following projections assume that *all* of the changes proposed under GPA No. 960 actually result in future development and fully build out (as part of overall implementation of the Riverside County General Plan). That is, it is a theoretical, worst-case scenario, that likely over-states the actual development potential in the real world. The *actual* future development of the individual parcels and areas affected by GPA No. 960 proposals, as with build out of the rest of the General Plan, are subject to the discretion of many hundreds to thousands of individual property owners, including both private individuals, business entities and even various public agencies and other entities.

The County of Riverside has little to no control over the decision to propose development (new or redeveloped) on a given site (though the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County). Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply (i.e., existing home inventory) and even infrastructure availability (water supply, electricity, etc.). For individual parcel-specific land use designation, policy or overlay changes, specific noise effects on the parcel or development cannot be delineated at present since they are dependent on a number of site-specific factors, including distance to roadway, topography, type of use proposed, setback distances, fence heights and composition and others.

For sake of comparison, however, Table 4.15-M lists the noise increase above existing baseline for both the existing General Plan's build out and for build out of the General Plan as it would be if GPA No. 960 is approved as proposed. For a comparison of how the two build out scenarios differ in terms of noise, the table also includes the difference in noise level between the two scenarios. In the plan-to-plan build out comparison, because GPA No. 960 includes proposals for deletion or reduction of development intensity (e.g., deletion of several Rural Village Study Areas), the data indicate that the with-project scenario would result in slightly lower noise levels upon build out in a number of areas.

In terms of actual development, however, as per Table 4.15-M, some existing developed land uses in Riverside County are already subject to excessive noise levels; other areas in which baseline levels are acceptable would increase to unacceptable levels over time. Similarly, areas of future development could be subject to the same unacceptable noise levels; however, in those cases, project design measures could be incorporated to reduce noise to acceptable levels and ensure that future noise is accommodated as well. Much of this noise increase, however, is planned for in the existing General Plan and was already analyzed under the EIR (No. 441) certified for the 2003 RCIP General Plan.

For Riverside County-initiated land use designation (LUD) changes, areas designated for development could be affected by noise related to construction, operation or both. GPA No. 960 proposes roughly 111,400 acres of LUD, policy area or overlay changes, with approximately 10,700 acres (roughly 10%) of the area changes including new development potential (increased density or intensity). These areas include lands that would be going from vacant to developed (e.g., residential, commercial, industrial, institutional, etc.) upon General Plan build out, resulting in an incremental increase in the area's population. This would introduce new people and facilities that

would be potentially subject to construction or operational noises. The operational noise levels (existing and build out) are included in the tables previously referenced above. In terms of construction noise levels, Table 4.15-O (Typical Maximum Noise Levels for Construction Equipment) shows noises typically associated with construction. Table 4.15-N (Typical Vibration Levels Associated with Construction Equipment) shows the same for groundborne vibration and sounds.

Table 4.15-N: Typical Vibration Levels Associated with Construction Equipment

Equipment	25 Feet	50 Feet	75 Feet	100 Feet
Large Bulldozer	87	81	77	75
Loaded Trucks	86	80	76	74
Jackhammer	79	73	69	67
Small Bulldozer	58	52	48	46

Source: Federal Transit Administration, 1995.

Specific construction noise levels cannot be predicted or modeled at this time as they depend greatly on site-specific conditions (parcel size, location relative to sensitive receptors, topography, vegetation, etc.) and the type of construction activities necessary (scraping, grading, rock blasting or removal, structure construction, roadway construction, etc.). Instead, these impact types are each addressed programmatically in the section following this one.

Table 4.15-O: Typical Maximum Noise Levels for Construction Equipment

Type of Equipment	Maximum Sound Level (L_{max}) at 50 Feet	
	Typical Range (dBA)	Suggested Maximum[1] (dBA)
Pile Drivers, 12,000 to 18,000 feet-pounds/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools[2]	78–88	85
Pumps	74–84	80
Scrapers[2]	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers[2]	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoes[2]	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks[2]	81–87	86

Key: dBa = A-weighted decibels. L_{max} = Maximum noise level.

Footnotes:

1. The "suggested maximum" value is actually an averaged value derived from the range noted for the particular piece of equipment during its use. Since it is not the very top of the range, the use of this value for analyses is more conservative and more accurately represents conditions than the absolute maximum sound level for the equipment.
2. These pieces of equipment are commonly associated with roadway construction per CalTrans. FTA, 1995, as cited in Table 8-1 from CalTrans Final Noise Study Report for the State Route 91 Widening Project (SR-55 to SR-2241) in Orange County, CA. Prepared by ICF Jones and Stokes, August 2008.

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek, and Newman, 1987, and per Footnote 2.

3. Airport-Related Changes

As noted previously, the General Plan update includes updated references to the ALUCPs most recently adopted by the Riverside County ALUC for the various public airports affecting Riverside County. These include airport

noise contour maps for both existing conditions and future conditions. The airport noise exposure (contour) maps are designed to identify an airport's present and future noise patterns and the land uses which are or are not compatible with those noise patterns. Further, per the FAA, these noise maps must comply with all applicable laws and regulations.

Where a sensitive receptor exists within, or may be proposed within, a noise contour above 55-60 dBA (standard varies depending on the airport), potential noise effects could occur. Table 4.15-P (Airport Compatibility Zones and Noise Levels), below, lists the various zones mapped for airport ALUCPs in conjunction with their associated noise levels and land use compatibilities.

As part of GPA No. 960, changes are proposed to land use designations (LUDs) within the airport's mapped Airport Influence Area (and/or addressed by its ALUCP) for three airports: Flabob, Riverside Municipal and Blythe airports. These changes ensure that the General Plan's LUDs are consistent with these airports' respective ALUCPs, including existing and future noise contour exposure.

Table 4.15-P: Airport Compatibility Zones and Noise Levels

Airport Zone		Noise	Associated Noise Effects
A	Runway Protection Zone (RPZ) and Within Building Restriction Line	Very High	Includes 65 CNEL contour at airports where this contour extends beyond RPZs.
B1	Inner Approach/ Departure Zone	High	Generally encompasses 60 CNEL contour (55 CNEL at outlying airports). Single-event noise sufficient to disrupt a wide range of land use activities, including indoors if windows are open.
B2	Adjacent to Runway	Moderate to High	Encompasses 55 CNEL contour lateral to runway. Exposed to loud single-event noise from take-offs and jet thrust-reverse on landings, also from pre-flight run-ups.
C	Extended Approach/ Departure Zone	Moderate	Encompasses most of 55 CNEL contour beyond runway ends. Aircraft typically below 1,000 feet altitude on arrival. Individual events occasionally loud enough to intrude upon indoor activities.
D	Primary Traffic Patterns	Moderate	Contains remaining 55 CNEL contour, if any. Aircraft at or above traffic pattern, except for instrument approaches. More concern with respect to individual loud events than with cumulative noise contours. [With respect to residential uses,] noise concerns can be minimized either by limiting the number of dwelling units in affected areas or by allowing high-density development, which tends to have comparatively high ambient noise levels.
E	Other Airport Environs	Low	Beyond 55 CNEL contour. Occasional overflights intrusive to some outdoor activities.
*	Height Review Overlay	Low	Individual noise events [may be] slightly louder because high terrain reduces altitude of overflights.

Source: Excerpted from Riverside County Airport Land Use Commission, Riverside County Airport Land Use Compatibility Plan, Policy Document, Table 3A, page 3-3, 2004.

4. Circulation Changes

GPA No. 960 also includes updates to both the countywide roadway network and the trails maps throughout Riverside County. Revisions are also proposed for trail standards, including types. It should be noted, however, that the new maps for trails and county roads (General Plan Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements would be determined based on site assessment of opportunities and constraints.

Roads are associated with both construction and operational noise. Construction noise is generated both at the time of a road's initial development, as well as when periodic maintenance is performed. In terms of operational

noise, the roads represent substantial noise sources due to the vehicles traveling along them. A road's noise levels are directly proportional to the traffic volumes traveling on them; typically, the greater the volume, the louder the noise levels. Noise levels are also dependent upon traffic type and speed, type of road surface, its grade, width, setback distances and the vegetation, berms, walls or other structures present or nearby, among other factors.

Traffic noise impacts on sensitive land uses can occur where predicted noise levels would exceed standards for existing noise levels or where predicted design-year noise levels approach or exceed the land use's applicable noise threshold. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility, and implemented pursuant to CEQA. The overall reasonableness of noise abatement is determined by considering factors such as cost, absolute predicted noise levels, predicted future increase in noise levels, expected noise abatement benefits, build date of the development that would surround or abut the noise source (particularly for roadways), environmental impacts of abatement construction, opinions of affected residents (or other sensitive receptors), input from public and local agencies, and lastly, social, legal and technological factors. Accordingly, potential noise abatement measures to be considered for mitigating a significant noise exposure (particularly for roadway noise) include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project.
- Constructing noise barriers.
- Acquiring property to serve as a buffer zone or setback.
- Using traffic management measures to regulate types of vehicles and speeds.
- Acoustically insulating public-use or nonprofit institutional structures.

GPA No. 960 also includes revisions to proposed alignments for new pedestrian or multi-use trails and trail connections throughout Riverside County. Although trails are not considered habitable structures, they have the potential to be located near noise-generating activities, particularly roadways. Due to the short duration of use in any one location, trail noise effects are typically more of an aesthetic concern than a health (hearing protection) concern.

5. Other Changes

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies and others, as described in Section 3.0 of the EIR. Actual locations subject to new development or improvements pursuant to these policies would be determined based on site assessment of opportunities and constraints. Accordingly, specific locations and timing of future development are not presently foreseeable beyond the master countywide level (as addressed previously in EIR No. 441). This future development would require site-specific analyses and mitigation when proposed as part of the overall build out of the county pursuant to the plans and policies of the General Plan. As such, future impacts and mitigation can only be assessed programmatically pursuant to the representative noise data presented in this section and the performance standards outlined in Section 4.15.6 of this EIR, as well as in EIR No. 441. Within the parameters of the programmatic impacts and mitigation addressed herein, future projects would require project-specific analysis and mitigation developed at the later individual project stage.

F. Attenuating Factors

Because noise is propagated as a wave through the air (though vibration and sound can also travel through the ground or other solid objects as well), several factors play a role in its attenuation. One of the most important traits is geometric spreading. This is a physical property of noise that causes it to diminish (decay) over distance at a rate of about 6 dB per each doubling of distance. This means that a noise that registers as 65 dB at 100 feet away would only register at 59 dB at 200 feet away. This is the reason that setbacks are an important tool for managing sound exposure to sensitive receptors.

Another source of sound attenuation for roadways and other outside noises is ground absorption. Since the noise propagation path from a highway to a receiver is usually very close to the ground, ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. According to CalTrans, as a rule of thumb (for distances under about 200 feet), the excess attenuation is also expressed in terms of attenuation per doubling distance. Ground absorption is greatest for acoustically absorptive (or "soft") sites, such as soft dirt, grass or scattered vegetation, typically providing roughly 1.5 dB of attenuation per doubling distance. When added to spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling distance. Acoustically hard sites, such as a parking lot or a body of water, provide no excess ground attenuation. Atmospheric effects can also play a role in sound attenuation, with wind having the greatest effect on noise levels. Receptors located downwind from a source can be exposed to increased noise levels as compared to calm conditions, whereas upwind locations can have lowered noise levels. Temperature, particularly temperature inversions, humidity and turbulence can also affect noise levels.

Shielding by natural or human-made features is another source of sound attenuation. A large object or barrier between a noise source and a receiver can substantially attenuate receiver noise levels. The amount of attenuation provided by the shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills, forests and dense woods) and human-made features (e.g., buildings, walls and fences) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. However, vegetation between the highway and receiver is rarely effective as shielding for reducing noise because it does not create a solid barrier.

For interior noise levels, the Riverside County ALUC states in the 2004 ALUCP (page 2-24) that, "Wood frame buildings constructed to meet 1990 [or newer] standards for energy efficiency typically have an average noise level reduction of approximately 20 dB with windows closed." For this reason, compliance with exterior noise level limits for sensitive land uses are normally deemed satisfactory for ensuring interior noise levels meet the State of California's Title 24 45 dB maximum standard. If additional interior noise attenuation is needed, other building features can be added, such as double-paned windows, sealed windows with air provided by air conditioning/ HVAC instead, increased wall insulation, additional backyard setbacks and placement (or increasing the height) of solid exterior walls.

4.15.6 Noise - Impacts and Mitigation

A. Would the project generate or expose persons to noise levels in excess of standards established in the General Plan or noise ordinance, or applicable standards of other agencies?

Impact 4.15.A – Generate Noise or Cause Noise Exposure in Excess of Standards: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. In some locations this would result in the introduction of new noise-sensitive land uses into areas of existing excess noise or areas in which county growth would eventually lead to excess noise levels. In addition, future development accommodated by GPA No. 960 would contribute incrementally to increased traffic volumes on Riverside County roads, resulting in noise increases affecting sensitive land uses along existing and future roads. As a result, new development, particularly residential uses along and adjacent to major transit corridors, could be exposed to noise levels that exceed Riverside County's noise standards. Existing sensitive uses would also be subject to these higher noise levels. Compliance with existing noise standards, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441 would reduce the effects of noise on new development to less than significant levels. However, where noise generators would expose existing receptors (residences and other sensitive uses) to excessive noise, impacts would be significant and unavoidable, as mitigation of these incremental and wide-spread noise impacts is infeasible.

1. Analysis of Impact 4.15.A

a. Noise Generation

Future development accommodated by the proposed project, GPA No. 960, would *generate* noise in two ways: through the introduction of new uses and through the generation of additional traffic. First, in providing new uses, future development would require construction for its creation and for the provision of new roads, infrastructure, public services and the ancillary uses that serve the new development. This construction would result in temporary (short-term) noise impacts; these are discussed under Impact 4.15.D, below. Once completed, some of these new uses could be associated with stationary noise sources (e.g., warehouses, water treatment plants, factories, schools and parks with playgrounds, outdoor performance spaces, mining equipment, etc.). Additional noise generated through these means would result in noise impacts if the noise levels exceed any of the various applicable noise level standards. As discussed earlier in Section 4.15.3, General Plan Table N-1 provides a range of acceptable noise levels for various land uses. A stationary source that exposes sensitive receptors to noise levels exceeding these standards may be significant if not reducible through regulatory compliance or mitigation measures. (Note, however, Riverside County standards state that new stationary noise sources must not result in "facility-related noise" exposures to any existing or proposed noise-sensitive land uses that exceed 45 dBA L_{eq} at night (i.e., between 10 pm and 7 am) and 65 dBA L_{eq} during the day, i.e., between 7 am and 10 pm.)

Second, the project would result in noise generation from the increased traffic that results from the introduction of new people and uses within Riverside County. With increased traffic volumes, associated noise levels typically increase as well. Noise levels projected at General Plan build out, both with and without the project, are shown in Table 4.15-M. This table also shows the baseline values, as well as the difference between the two build out scenarios, to highlight the project's impacts on noise levels.

b. Noise Exposure

In addition to generating noise, the project would also *expose* people (i.e., residents and other sensitive receptors, such as infants and children, ill people, etc.) to noise in several ways. First, future development accommodated by the project would introduce new uses, and hence new populations, into both existing and future areas subject to excessive noise. These include areas of substantial existing ambient or roadway noise levels (as shown in Tables 4.15-D, 4.15-F and 4.15-G), as well as areas within future roadway noise contours (i.e., Table 4.15-M and Figures 4.15.40 through 4.15.53). They also include areas of existing (i.e., Figures 4.15.5 through 4.15.17) and future (i.e., Figures 4.15.23 through 4.15.39) airport noise contours, as well as existing/future railroad noise contours (i.e., Figures 4.15.2 through 4.15.4).

Second, the additional traffic generated as a result of the project, as discussed under Noise Generation, above, would expose both existing and future populations to increased noise levels throughout Riverside County. Noise levels projected at General Plan build out, both with and without the project, are shown in Table 4.15-M. Although vehicular traffic on roadways would be the largest sources of additional noise exposure, increases in airport and railroad transportation would also cause potential noise exposure. GPA No. 960, however, would not directly affect railroad noise levels. As for airport noise effects, see Impact 4.15.E, below.

As identified in Table 4.15-M, along most roadways traffic noise levels would be higher in the future than they are now in Riverside County. Under GPA No. 960, the changes in motor vehicle trips and circulation patterns would increase noise levels within Riverside County by up to 11.1 dBA CNEL, although most increases in noise would be between 1 and 5 dBA. As described in Table 4.15-H, however, the significance of roadway noise increase is dependent upon existing noise levels. So while a roadway noise increase of 1.5 dBA CNEL may not be significant for one roadway segment, it may be significant for another based on the noise levels and sensitive receptors along the roadway segment. Also, it should be noted that the roadway traffic noise levels identified in Table 4.15-M represent conservative potential noise exposure. In reality, noise levels may vary from that represented since the calculations do not assume natural or artificial shielding or reflection from existing or proposed structures or topography. Intervening structures or other noise-attenuating obstacles between a roadway and a receptor may reduce roadway noise levels at the receptor.

c. Noise Impacts

Project-related impacts from the generation of noise or the exposure of people to noise would be significant if both of the following conditions are met: 1) The noise level in question exceeds the applicable standard (see Section 4.15.3 for discussion of the various applicable standards); and, 2) the excessive noise cannot be reduced to an acceptable level through various feasible noise reduction measures.

With implementation of GPA No. 960, future development of noise-sensitive uses (e.g., residential dwellings, schools, hospitals, nursing homes, parks, hotels, places of worship, libraries, etc.) would occur in areas that either are currently exposed to or would be exposed to future traffic, airport or railroad noise levels that exceed the current standards (65 dBA L_{dn} for exterior areas and 45 dBA L_{dn} for interior areas). Development would also occur within areas exposed to noise from non-transportation (stationary) noise sources that exceed the current standards (for example, residential standards include 45 dB L_{eq} nighttime and 65 dBA L_{eq} daytime for exteriors and 40 dBA L_{eq} nighttime and 55 dBA L_{eq} daytime for interiors, according to General Plan Table N-2). Again, it must be noted that Riverside County standards specify that proposed new noise-sensitive uses must be sited, designed and/or engineered to ensure that the interior and exterior exposure standards are not exceeded.

Future development accommodated by GPA No. 960 would accommodate a variety of land uses, including residential, commercial, office and industrial, open space and recreation, institutional and public facilities (e.g.,

electrical substations, water and wastewater treatment facilities, schools, etc.). Stationary noise sources present in residential areas include HVAC equipment and maintenance equipment such as leaf-blowers and gasoline-powered lawnmowers. Commercial uses often include larger, rooftop-mounted HVAC equipment. Industrial uses can generate noise during normal operations from sources such as shipping and loading facilities, concrete crushing facilities, recycling activities and so on. Noise levels exceeding standards established by Riverside County would represent a significant impact.

In most cases, new development can be designed to include the necessary setbacks, construction materials, sound walls, berms or other features necessary to ensure internal and external noise levels meet the applicable standards. The measures by which this can be achieved are outlined below. Where full mitigation may not be possible, however, is for noise exposure to existing uses, particularly to excessive roadway noise. Roadway noise is pervasive and increases incrementally as a result of build out of many small (and large) contributing developments throughout Riverside County. As a result, many, many existing homes and other sensitive receptors could potentially be subjected to significant noise levels as a result of future development accommodated by the project.

In some cases, mitigation of the excessive sound impacts on existing uses would be infeasible due to the sheer number of sites affected (e.g., hundreds or even thousands of homes) or the cost for retrofitting them individually for appropriate sound attenuation. In other cases, it simply may not be feasible to retrofit or redesign an existing receptor to provide greater noise attenuation, and it is not always feasible to construct barriers between existing development and roadways. And, lastly, in many cases, even if adequate sound reductions are achievable for the near-term (e.g., existing conditions and the next 5-10 years), continued growth within Riverside County as it builds out over the next 50 years could eventually result in substantial noise increases later despite current measures. Thus, while mitigation is available for protecting new noise-sensitive land uses from potentially significant noise impacts, the same is not true for existing uses.

It should also be noted that the noise levels indicated in this section for roadways assume that no natural or artificial shielding is present and that no reflection from existing or proposed structures or topography occurs. In reality, intervening structures or other noise-attenuating obstacles between a roadway and a receptor may reduce roadway noise levels at the receptor. Due to the number of factors involved, however, these would have to be evaluated on a case-by-case basis.

Thus, while available implementation (as outlined below) would be sufficient to ensure the effects of noise generation or noise exposure due to stationary or traffic sources on *new* development are less than significant, due to the full scope and scale of impacts involved, it may not be possible to fully mitigate significant noise impacts on existing development. Even with all feasible mitigation, in some cases impacts due to the generation of or exposure to noise levels in excess of standards would remain significant and unavoidable.

2. Regulatory Compliance for Impact 4.15.A

As explained below, compliance with the following existing laws, regulatory programs and General Plan policies would aid in reducing potentially significant impacts related to the generation of or exposure to excessive noise levels.

a. Compliance with Federal, State and County Regulations

All future development within unincorporated Riverside County must conform to the requirements and standards of the General Plan, as well as state and federal requirements for noise. These regulations and standards ensure that measures necessary to minimize potential noise-related impacts are implemented for all phases of the project.

Federal Noise Control Act of 1972: A primary set of noise standards were set by the EPA pursuant to this act. It also led to the establishment of guidelines and standards for indoor and outdoor noise levels to address the effects of noise on public health, welfare and the environment. Accordingly, compliance with this act's standards would prevent considerable interference and annoyance in noise-sensitive areas. Although the regulation of noise control policies have since been transferred to the state and local levels of government, the standards and regulations set forth by the Noise Control Act remain in place and provide guidance in relation to acceptable noise practices for state and local agencies. Future development accommodated by GPA No. 960 would be required to comply with all necessary standards prior to approval, thereby reducing potential adverse impacts related to project noise generation or exposure.

California Building Standards Code: The State of California has also adopted standards that regulate noise levels from a number of different noise emitters as detailed in CCR Title 24. The regulations include standards for both interior and exterior sound levels. By restricting noise levels based on the type of development, compliance with these codes would aid in preventing those developments consistent with GPA No. 960 from generating noise or causing noise exposure.

California Noise Insulation Standards: This regulation sets noise insulation standards for the interior room noise of multi-family residential buildings as established in CCR Title 24. This code also requires that an acoustical study be prepared whenever residential structures are being proposed near various transportation routes and where noise levels may exceed 60 dB or greater, thereby ensuring that development the residence has been designed in such a manner that will minimize interior noise levels. These standards would further ensure that GPA No. 960 would keep noise generation and noise exposure from future new development, particularly new stationary sources, to less than significant levels.

Ordinance No. 847 - Regulating Noise: This ordinance establishes countywide standards regulating noise in order to preserve the quality of life for Riverside County residents. The maximum decibel levels set forth in Ordinance No. 847 have been established based on General Plan land use designation consistency. Restricting and enforcing noise levels throughout Riverside County would ensure that noise generation and noise exposure impacts (from both stationary and traffic sources) on new development are kept at less than significant levels.

b. Compliance with Existing General Plan Policies

Within the Riverside County General Plan, five policies directly address a noise threshold or standard. These include Policies N 1.3, 14.1 and 14.9, which address acceptable noise levels for new development, particularly residential uses. Policy N 4.1 addresses stationary source noise levels and Policy LU 16.10 addresses noise coming from wind turbines. Of the General Plan policies listed in Section 4.15.3.C, above, these policies, in particular, provide mitigation for impacts associated with noise generation and noise exposure. See Section 4.15.3.C for the full text of each policy. Implementation of these and other General Plan policies, as discussed below, would reduce noise impacts on future growth and development and help lessen noise generation effects. Specifically:

Policies N 1.1, 1.2 and 14.2: These policies specifically address land use compatibility in relation to noise levels. The policies focus on restricting those land uses that have higher levels of noise production from being located near those land uses that are more sensitive to noise levels. The policies also promote focusing those land uses with higher noise levels in areas that tend to produce more noise such as transit corridors.

Policies N 1.7, 2.2, 3.2, 3.5 and 4.4: These policies requires acoustical studies and reports to be prepared for those proposed developments that may be affected by high noise levels as well as those proposed developments that are considered noise-sensitive. Policy N 3.5 also requires that the acoustical analysis include recommend-ations for design mitigation as well.

Policies N 6.4, 9.3, 9.7 and 11.5: These policies establish requirements for development projects sited near transit-oriented land uses. The requirements include providing the appropriate mitigation for those developments that will increase traffic, conducting noise monitoring for developments that propose sensitive land uses near arterial roadways and restricting the development of sensitive land uses along railways. Policy 6.4 specifically restricts the usage of off-road vehicles in any area of the county with the exception of those areas specifically designated for off-road vehicles.

Policy LU 32.10: This policy requires that developments of various types mitigate potential impacts such as noise during the development review process.

Policies LU 15.1, 15.2, 16.9, 16.10, 29.6, 30.6 and 31.3: These policies establish requirements and standards regarding land use compatibility as it relates to potential impacts, including noise effects to sensitive receptors. By ensuring compatibility among land uses, potential adverse impacts related to noise are reduced.

c. Compliance with Proposed New or Revised General Plan Policies

The following revised policies of the Riverside County General Plan would also help prevent significant impacts related to noise generation and/or noise exposure. See Section 4.15.3.C for full policy text.

Policies N 7.3: This policy places limitations on the construction of residential uses that fall within the noise contours of an airport.

Policy LU 4.1: This policy requires that developments of various types mitigate potential impacts such as noise during the development review process.

Policy OS 14.5: This policy addresses land use compatibility issues for mining operations. It requires non-mining uses located adjacent to existing mining operations be designed with a buffer to protect the uses from mining-related noises, thereby reducing potential noise exposure impacts.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, certified for the 2003 RCIP General Plan, Mitigation Measures 4.13.2A, B, C and D were imposed to reduce impacts associated with long-term noise sources that would exceed Riverside County noise standards. These measures remain applicable to this project. Mitigation Measure 4.13.2A would lessen noise impacts by restricting development of noise-sensitive uses if exterior and interior noise standards cannot be met. Mitigation Measure 4.13.2B would lessen noise impacts by requiring preparation of a site-specific noise analysis ("describing how the exterior and interior noise standards will be met") for residential projects with a noise exposure greater than 65 dBA L_{dn} to ensure that homes are situated in appropriately quiet areas or are constructed with the necessary sound attenuation measures to reduce noise levels to appropriate levels. Mitigation Measure 4.13.2C would lessen impacts by also requiring new commercial and industrial development proposals include a noise study that analyzes site-specific noise impacts and provides mitigation appropriate for achieving the allowable noise levels. Mitigation Measure 4.13.2D would lessen noise impacts on schools by restricting their development within 2 miles of an airport. In addition, EIR No. 441 also included Mitigation Measures 4.13.3A, 4.13.3B and 4.13.3C to address impacts from stationary noise sources. These measures would also apply to future development accommodated by GPA No. 960.

Existing Mitigation Measure 4.13.2A: All new residential developments within the County [of Riverside] shall conform to a noise exposure standard of 65 dBA L_{dn} for outdoor noise in noise-sensitive outdoor activity areas

and 45 dBA L_{dn} for indoor noise in bedrooms and living/family rooms. New development, which does not and cannot be made to conform to this standard, shall not be permitted.

Existing Mitigation Measure 4.13.2B: Acoustical studies, describing how the exterior and interior noise standards will be met, shall be required for all new residential developments with a noise exposure greater than 65 dBA L_{dn}. The studies shall also satisfy the requirements set forth in Title 24, Part 2 of the California [Building] Code (Noise Insulation Standards), for multiple-family attached homes, hotels, motels, etc. No development permits or approval of land use applications shall be issued until an acoustic analysis is received and approved by the [Riverside] County Planning Department.

Existing Mitigation Measure 4.13.2C: The County [of Riverside] shall require that proposed new commercial and industrial developments prepare acoustical studies, analyzing potential noise impacts on adjacent properties, when these developments abut noise-sensitive land uses. The County [of Riverside] will require that all direct impacts to noise-sensitive land uses be mitigated to the maximum extent practicable.

Existing Mitigation Measure 4.13.2D: Ensure that all new schools, particularly in subdivisions and specific plans, are sited more than 2 miles away from any airport.

Existing Mitigation Measure 4.13.3A: Acoustical studies shall be required for all new noise-sensitive projects that may be affected by existing noise from stationary sources.

Existing Mitigation Measure 4.13.3B: To permit new development of residential and noise-sensitive land uses where existing stationary noise sources exceed [Riverside] County's noise standards, effective mitigation measures shall be implemented to reduce noise exposure to or below the allowable levels of the zoning code/noise control ordinance.

Existing Mitigation Measure 4.13.3C: No industrial facilities shall be constructed within 500 feet of any commercial land uses or within 2,800 feet of any residential uses without the preparation of a noise impact analysis. This analysis shall document the nature of the industrial facility as well as "noise producing" operations associated with that facility. Furthermore, the analysis shall document the placement of any existing or proposed commercial or residential land uses situated within the noted distances. The analysis shall determine the potential noise levels that could be received at these commercial and/or residential land uses and specify measures to be employed by the industrial facility to ensure that these levels do not exceed [Riverside] County noise requirements. Such measures could include, but are not limited to, the use of enclosures for noisy pieces of equipment, the use of noise walls and/or berms for exterior equipment and/or on-site truck operations, and/or restrictions on hours of operations. No development permits or approval of land use applications shall be issued until an acoustic analysis is received and approved by the County [of Riverside] staff.

3. Finding on Significance for Impact 4.15.A

Compliance with the above regulations, standards, policies and existing mitigation measures would ensure potentially adverse impacts related to noise generation and noise exposure associated with future new development accommodated by GPA No. 960 would be less than significant. In particular, compliance with Mitigation Measures 4.13.2A and 4.13.2B would ensure that new residential uses are only allowed if they would achieve interior noise levels of 45 dBA, consistent with Riverside County standards. Existing sensitive uses, particularly residences, however, would also be subject to project-related traffic noise increases. Much of the mitigation listed above would not be feasible for reducing wide-spread noise exposures to existing uses, particularly from roadway noise or other noises generated outside of a new development site. For this reason, noise impacts would be significant and unavoidable.

B. Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Impact 4.15.B – Generate or Cause Exposure to Excessive Groundborne Vibration: Future development accommodated by GPA No. 960, and its associated infrastructure and support uses, would require construction activities that could cause temporary, short-term vibrations. These vibrations would be disruptive if located near sensitive receptors. Also, future development of new vibration-sensitive land uses could occur within areas subject to existing sources of vibration (e.g., railroads). However, compliance with General Plan policies and existing mitigation measures would ensure that new uses are not subject to excessive vibration impacts. For construction-related vibration, compliance with existing Riverside County ordinances and General Plan policies, as well as a new project-specific Mitigation Measure 4.15.B-N1, would help reduce the effects of groundborne vibration impacts on sensitive receptors. In some cases, for example when construction occurs within 150 feet of an existing sensitive receptor, effects may still be felt. However, due to the short-term, temporary nature of construction impacts, these remaining effects would not be significant.

1. Analysis of Impact 4.15.B

Aside from seismic events, the greatest regular sources of groundborne vibration in typical communities are roadway truck and bus traffic. Trucks and buses traveling city streets typically generate groundborne vibration velocity levels of around 63 VdB, with levels reaching up to 72 VdB where trucks and buses pass over bumps in a roadway.

Construction and demolition activities associated with future development accommodated by GPA No. 960 would result in various levels of temporary groundborne vibration depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors and the types of operations or activities involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The type and density of soil can also affect the transmission of energy. Table 4.15-N provides vibration levels for typical construction equipment.

Construction activities would occur at discrete locations throughout Riverside County and vibration from such activities may affect existing buildings (i.e., through structural damage) and their occupants (i.e., through activity disruption, annoyance, etc.) if they are located close enough to the construction sites. In general, vibration-induced structural damage only occurs when certain types of construction (e.g., blasting, pile-driving, heavy earthmoving) take place very close to existing structures. Vibration-induced structural damage can be avoided by prohibiting construction projects with the potential for causing structural damage to nearby buildings. Vibration-induced disruptions or annoyance can occur during more common types of construction activity (e.g., truck movements and earthmoving) for greater distances from the activity site.

The specific types of equipment to be used for construction of the future development accommodated by GPA No. 960 are not known or foreseeable at this time. However, based on common construction practices, it can reasonably be assumed construction vibration would be generated from pile drivers, trucks, bulldozers and similar equipment. Based on the information presented in Table 4.15-I, vibration levels could be problematic if sensitive uses are located within approximately 100-150 feet of potential project construction sites. Under such conditions, sensitive receptors (e.g., residents, school children, etc.) would experience vibration levels that exceed the FTA's vibration impact threshold of 72 VdB.

In addition, if construction activities were to occur during more noise-sensitive hours (e.g., before 7 am or after 10 pm), vibration from construction sources could annoy or disrupt the sleep of nearby residents of existing or new (future) residences, and expose people to excessive groundborne vibration or groundborne noise levels. The

Riverside County noise ordinance addresses noise and vibration levels occurring outside of normal work hours. However, it does not prohibit all construction-induced vibrations nor address disruption/annoyance effects of such vibrations. Where certain types of construction would occur within approximately 100 feet of a vibration sensitive use (residences, schools, hospitals, scientific facilities, certain types of manufacturing, etc.), the residual potential for disruption/annoyance impacts to sensitive receptors remains. In these cases, however, the temporary nature of the construction activities means that the disturbance would be of limited duration and, for this reason, not significant overall.

Future development near major rail lines or truck routes could also introduce new sensitive receptors into areas affected by groundborne vibration. In general, the potential for vibration-induced structural damage from such sources would be low, but disruption/annoyance to the occupants could occur if the uses were close enough to such sources. However, such vibration-induced disruption/annoyance could be avoided by not approving vibration-sensitive uses in areas where FTA vibration criteria (Table 4.15-I, for example) are exceeded and requiring setbacks of sufficient distance to ensure vibration levels are within acceptable limits. Implementation of General Plan Policies N.15.1, N.15.2 and N.15.3, as well as adherence to existing EIR No. 441 Mitigation Measure 4.15.2A would ensure that operational vibration effects on new development would be less than significant.

2. Regulatory Compliance for Impact 4.15.B

As explained below, compliance with the following General Plan policies and new Mitigation Measure 4.15.B-N1 would help reduce or limit substantial effects related to groundborne vibration and ensure they are not significant.

a. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.15.3.C, above, Policies N 16.1, 16.2 and 16.3, in particular, provide mitigation for impacts associated with groundborne vibration. Specifically:

Policy N 16.1: This policy restricts sensitive land uses from proximity to existing vibration-producing land uses. Future development projects, including those accommodated by GPA No. 960, would be required to comply with this policy.

Policy N 16.2: This policy specifically identifies those uses that are considered by the Riverside County General Plan as being sensitive to vibration. By identifying these specific uses, the County of Riverside can more effectively mitigate potential impacts from vibration on these uses.

Policy N 16.3: This policy prohibits proposed residential developments from being exposed to perceptible ground vibration from passing trains and identifies the levels at which vibrations become perceptible (motion velocity of 0.01 inches/second over a range of 1 to 100 Hz).

b. Compliance with Proposed New or Revised General Plan Policies

Policy N 15.2: This policy specifically requires minimization of vibration transfer from commercial to residential land uses in mixed-use developments. Future development projects, including those accommodated by GPA No. 960, would be required to comply with this policy.

3. Additional Mitigation Measure for Impact 4.15.B

As detailed below, a new mitigation measure is proposed in order to help minimize the effect of operational vibrations on existing uses. Compliance with this measure would ensure that potential adverse impacts of operational groundborne vibrations on new development are reduced to less than significant levels.

NEW **Mitigation Measure 4.15.B-N1:** Prior to the issuance of any grading permit for new development involving vibration-sensitive land uses (which shall include, but not be limited to: hospitals, residential areas, concert halls, libraries, sensitive research operations, schools and offices), the project proponent shall provide evidence to the County of Riverside that placement of such uses within the area would not exceed groundborne vibration or groundborne noise impact criteria identified by the FTA (for example, the standards shown in Table 4.15-I of this EIR) or as otherwise deemed appropriate for the situation by the County of Riverside.

4. Finding on Significance for Impact 4.15.B

Compliance with the above-listed regulations, standards, policies and proposed new Mitigation Measure 4.15.2B-N1 would ensure that potentially adverse impacts related to groundborne noise and vibration generation and exposure associated with future new development accommodated by GPA No. 960 would be less than significant. Existing sensitive uses would also be subject to potential project-related construction vibrations. In some cases, vibration levels would exist even with reduction measures incorporated, particularly for sensitive uses within 100-150 feet of the vibration source. In these cases, however, the temporary nature of the construction activity ensures that the vibration impacts, while possibly annoying, would not be significant.

C. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.15.C – Result in a Substantial Permanent Increase in Ambient Noise Levels: Future development associated with implementation of GPA No. 960 would contribute to an increase in traffic, resulting in a corresponding increase in traffic noise. In some cases, this would cause ambient noise levels to either exceed the threshold of acceptability (65 dBA CNEL, for example) or to become further unacceptable in areas already exceeding noise thresholds. Compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, would reduce potential impacts due to increased noise levels. For new development, full mitigation would typically be feasible. For existing noise-sensitive land uses, however, due to the widespread and pervasive nature of the noise impacts, it is generally not be feasible to mitigate the impact fully for all affected receptors. Thus, this impact would be significant and unavoidable, even with the implementation of all feasible mitigation.

1. Analysis of Impact 4.15.C

Future development associated with implementation of GPA No. 960 would contribute to an increase in traffic, developed uses, equipment and maintenance noise, and other noises generated by human activity. As Riverside County builds out, traffic volumes would increase triggering a corresponding increase in vehicular noise, which the single largest noise source throughout Riverside County. In some areas, this would cause ambient noise to increase from acceptable to unacceptable levels (exceed 65 dBA, for example). Where existing ambient noise levels already exceed acceptable thresholds, the additional traffic-related increase could result in greater noise impacts, including more people being annoyed or disturbed. Also, because of the exponential nature of sound levels, the louder the ambient noise level, the less increase in sound necessary to trigger a significant impact.

GPA No. 960 would contribute incrementally, but significantly, to traffic levels in Riverside County. Since the noise ambient level for many county roadways already exceed 65 dBA, the project's traffic noise contributions would result in a substantial permanent increase in ambient noise levels in certain areas. Compliance with existing laws, regulations, General Plan policies and existing EIR No. 441 mitigation measures, would reduce potential impacts due to increased noise levels. For new development, full mitigation would typically be feasible. For existing noise-sensitive land uses, however, due to the widespread and pervasive nature of the impact, it would generally not be feasible to mitigate the impact fully for all affected receptors. Thus, this impact would be significant and unavoidable.

2. Regulatory Compliance for Impact 4.15.C

Compliance with the following laws, regulatory programs and General Plan policies would aid in reducing potentially significant impacts due to increased noise levels as a result of future development accommodated by GPA No. 960.

a. Compliance with Federal, State and County Regulations

All future development within unincorporated Riverside County must conform to the requirements and standards of the General Plan, as well as state and federal requirements for noise. These regulations and standards ensure that measures necessary to minimize potential noise-related impacts are implemented for all phases of the project. However, the proposed policies would not guarantee the remediation or reduction of noise impacts on all existing noise-sensitive land uses in areas with current and continuing future high noise exposures.

Federal Noise Control Act of 1972: The noise standards set by the EPA pursuant to this act provide guidelines and standards for indoor and outdoor noise levels to address the effects of noise on public health, welfare and the environment. Accordingly, compliance with this act's standards would prevent considerable noise interference and annoyance in noise-sensitive areas. Future development accommodated by GPA No. 960 would be required to comply with all necessary standards prior to approval, thereby reducing potential adverse impacts due to increased noise levels.

California Building Standards Code: The State of California has also adopted standards that regulate noise levels from a number of different noise emitters as detailed in CCR Title 24, which address both interior and exterior sound levels. By restricting noise levels based on the type of development, compliance with these codes would aid in preventing those developments consistent with GPA No. 960 from excessive increased noise exposure.

California Noise Insulation Standards: Under CCR Title 24, this regulation sets interior noise insulation standards for multi-family residential buildings. Title 24 also requires that an acoustical study be prepared whenever residential structures are being proposed near various transportation routes and where noise levels may exceed 60 dB. This would ensure that residential developments are designed to minimize interior noise to acceptable levels. These standards would further ensure that future new development, particularly new stationary sources, would not cause a significant increase in noise exposure to their surroundings.

Riverside County Airport Land Use Compatibility Plans: These documents promote compatibility between airports and the land uses that surround them by restricting residential densities, limiting the intensities of non-residential developments and in some cases prohibiting certain uses based on the particular zone of the airport plan. Compliance with Airport Land Use Compatibility Plans would ensure that sensitive receptors in the vicinity of public airports are not exposed to significant noise increases.

Ordinance No. 847 - Regulating Noise: This ordinance establishes countywide standards regulating noise with maximum decibel levels based on General Plan land use designation consistency. Restricting and enforcing noise levels throughout Riverside County would ensure that new developments are not exposed to significant increased noise levels.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.15.3.C, above, a number of policies provide mitigation for impacts associated with increased noise levels. These policies are described below. Compliance with these existing General Plan policies would ensure future development achieves appropriate exterior noise levels. However, the proposed policies would not guarantee the remediation or reduction of impacts due to increasing sound levels for all existing noise-sensitive land uses.

Policies N 1.1, 1.2 and 15.2: These policies specifically address land use compatibility in relation to noise levels. The policies focus on restricting those land uses that have higher levels of noise production from being located near those land uses that are more sensitive to noise levels. The policies also promote focusing those land uses with higher noise levels in areas that tend to produce more noise such as transit corridors.

Policies N 1.7, 2.2, 3.2, 3.5 and 4.4: These policies require acoustical studies and reports to be prepared for those proposed developments that may be affected by high noise levels as well as those proposed developments that are considered noise-sensitive. Policy N 3.5 also requires that the acoustical analysis include recommendations for design mitigation as well.

Policies N 6.4, 9.3, 9.7, 10.4, 11.1, 11.3, 11.5 and 13.1-13.4: These policies establish requirements for development projects that may be sited near transit oriented land uses. The requirements include providing the appropriate mitigation for those developments that will increase traffic, conducting noise monitoring for developments that propose sensitive land uses near arterial roadways and restricting the development of sensitive land uses along railways. Policy N 6.4 specifically restricts the usage of off-road vehicles in any area of Riverside County with the exception of those areas specifically designated for off-road vehicles.

Policies N 10.1, 10.3, 11.2, 11.4, 12.1 and 12.2: These policies establish standards and requirements related to various methods of transportation in an effort to reduce potential adverse operational noise impacts.

Policies LU 16.9 and 16.10: These policies establish standards and requirements for the operation of wind turbines in an effort to reduce potential adverse impacts related to operational noise.

Policies C 3.27-3.29, 6.7, 9.4, 9.5, 13.7, 14.3, 20.8 and 23.8: These policies also establish standards and requirements related to various methods of transportation in an effort to reduce potential adverse operational noise impacts.

c. Compliance with Proposed New or Revised General Plan Policies

Policy N 7.3: This policy places limitations on the construction of residential uses that fall within the noise contours of an airport.

d. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, certified for the 2003 RCIP General Plan, Mitigation Measures 4.13.3A, B and C were imposed to reduce stationary noise impacts from future development to less than significant. These measures remain applicable to this project. Mitigation Measure 4.13.3A would lessen noise impacts by requiring the preparation and approval of a site-specific noise study. Mitigation Measure 4.13.3B requires implementation of mitigation measures where development noise levels would expose people to noise levels higher than the identified standard. Mitigation Measure 4.13.3C would lessen impacts associated with this issue by restricting certain types of land uses within a certain distance of noise-sensitive uses. In addition, existing EIR No. 441 Mitigation Measures 4.13.2A, 4.13.2B, 14.13.2C and 4.13.2D, as presented in the mitigation discussion for Impact 4.15.A, shall also apply as mitigation for this impact.

Existing Mitigation Measure 4.13.3A: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.3B: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.3C: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2A: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2B: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2C: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2D: See Impact 4.15.A, above, for full text of this measure.

3. Finding on Significance for Impact 4.15.C

Excessive (i.e., exceeding regulatory standards) exterior and interior noise in existing and proposed noise-sensitive areas can be remediated by such mitigation strategies as relocating roadways, applying roadway coatings or reducing road speeds, building sound walls, providing buffer zones, retrofitting older homes with insulation or appropriate window treatments (i.e., double-paned windows, interior storm windows, etc.) or choosing development sites in quiet areas. For new development, it is anticipated that Riverside County standards could be met and substantial noise impacts could be avoided by incorporating such appropriate mitigation strategies which would reduce potential impacts to less than significant levels. However, for existing noise-sensitive uses located in areas adjacent to roadways or rail lines, or close to airports or other stationary sources, it may not be possible or feasible to include noise reduction strategies to address interior noise impacts. The County of Riverside cannot demonstrate at this time that the revised policies and actions in the GPA No. 960 would reduce impacts of each project and upon each project that could be developed under GPA No. 960 to a less than significant level. Even with the incorporation of feasible mitigation measures, this impact would remain significant and unavoidable.

D. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.15.D – Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels: Future development accommodated by GPA No. 960 would necessitate construction activities which could temporarily exceed applicable Riverside County standards at nearby noise-sensitive receptors. In many cases, the peak

sound levels would be extremely brief and overall ambient noise levels would remain within acceptable limits. In addition, compliance with existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441, would also help reduce potential short-term noise impacts. On occasion, however, construction requirements and/or the proximity of the sensitive land use (e.g., within 150 feet or less) would make significant noise impacts unavoidable, even though temporary. Because of the close distances involved for such significant impacts, mitigation of sound levels to less than significant are technologically impossible. Thus, no additional project-specific mitigation is feasible. Future development accommodated by GPA No. 960 may result in significant short-term noise impacts that would be significant and unavoidable.

1. Analysis of Impact 4.15.D

Short-term construction noise impacts would arise from vehicle trips to and from the site, as well as from demolition, excavation, grading, building and other construction activities associated with the development of individual future projects pursuant to the General Plan, as amended by the proposed project, GPA No. 960. Construction-related short-term noise levels could temporarily elevate or exceed existing ambient noise levels in the project vicinity. In some cases, even with mitigating measures, such noise levels would exceed the applicable threshold. In such cases, the temporary noise impacts would be significant, even though the levels would decrease once the construction was completed. These issues are discussed further in the subsections that follow.

a. Temporary Vehicular Noise

Two types of short-term noise impacts would arise during construction of individual development (or infra-structure) projects. First, commuter trips by construction crews and the transport of construction equipment and materials to (and from) the construction site would incrementally increase noise levels on access roads leading to the site. These can have a relatively high single-event noise exposure potential, i.e., up to 87 L_{max} dBA at 50 feet from passing trucks, resulting in potential short-term intermittent annoyances. The effects on long-term ambient noise levels, however, are typically small when averaged over the longer period of time (i.e., 24 hours).

Truck traffic on public roads, however, is regulated by federal and state governments and not subject to local (county) government jurisdiction. This limits the range of regulatory and litigator options available at the county level. Also, the federal Department of Transportation is involved in setting noise standards and safety regulations for civil aviation, railroads, transit facility and vehicles, as well as for the Interstate freeways. While construction noise is regulated by the County of Riverside for development projects and infrastructure improvements on unincorporated lands, the State of California is responsible for establishing regulations for noise control where not preempted by federal rules. The State of California regulates noise from motor vehicles, freeways and arterial roadways and establishes the base noise planning standards for land use compatibility. In addition, the California Department of Transportation (CalTrans) has jurisdiction over California State road projects, such as freeways, including responsibility for the noise impacts associated with them (both in their construction and their operation, including maintenance work). However, since the County of Riverside is ultimately responsible for maintaining the health and welfare of its residents, this largely means implementing appropriate land use planning and control measures to ensure that existing and future residents and visitors are not exposed to unsafe sound levels.

b. Temporary Construction Noise

The second type of short-term noise impact is from noise generated during demolition, excavation, grading and building erection on individual project sites. During construction of a project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

Each step of construction has its own mix of equipment and, consequently, its own noise-generating characteristics. The various sequential phases of construction each contribute to the noise generated on an individual site and, therefore, the noise levels surrounding the site. Despite the variety in the type and size of construction equipment, there are certain similarities in the dominant noise sources and patterns of operation that allow construction-related noise ranges to be categorized by work phase. Table 4.15-O lists typical construction equipment noise levels for noise impact assessments, based on a distance of 50 feet between the equipment and the noise receptor.

Construction equipment would typically generate noise levels ranging from 70 to 90 dB at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling distance. The site preparation phase, which includes site excavation and grading, tends to generate the highest noise levels because the noisiest construction equipment tends to be earthmoving equipment. Earthmoving equipment includes a variety of excavating machinery, such as back fillers, bulldozers, draglines and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Construction activities would be an ongoing occurrence within Riverside County and, in some cases, could occur in close proximity to existing noise-sensitive uses. All construction activities are required to be conducted pursuant to the community noise exposure conditions placed on the project (e.g., limiting days and hours of construction, requiring mufflers and other sound-attenuating features on equipment, etc.). A number of other federal, state and/or local regulations would also apply (see below).

Under development and/or grading permit conditions of approval, as well as Ordinance No. 847 and other regulations, the County of Riverside enacts a number of noise controls on construction activities. These include limiting activities to specific hours of the day (or severely restricting allowable noise levels after certain hours, typically 10 pm), limiting idling, staging and loading locations (away from adjacent homes, for example), requiring setbacks, sound baffles or other equipment modifications, as appropriate for the situation.

Riverside County's noise ordinance, however, specifically exempts from the limitations of the ordinance sound generated by "private construction projects located one-quarter of a mile or more from an inhabited dwelling." Private construction within less than a quarter-mile is also exempt provided that construction does not occur between the hours of 6:00 pm and 6:00 am during June through September and between the hours of 6:00 pm and 7:00 am during the months of October through May. Capital improvement projects of a governmental agency, facilities owned or operated by or for a governmental agency, and activities for the maintenance or repair of public properties are also all exempted from the ordinance's noise limitations. Thus, in some circumstances, construction equipment noise may not be reducible to the levels specified in Riverside County's noise ordinance or may be exempt from such provisions.

c. Significant Impacts

Although a number of noise standards exist for community noise levels, they often cannot be readily applied to construction activities. With construction work, the noise sources on a site may produce very loud noise for only very short durations. Such brief "impulse" sound sources may technically exceed a set sound limit, but be deemed less than significant due to its extremely short duration. For this reason, it becomes more appropriate to use the following indicators for determining when construction activity would result in significant temporary or periodic noise impacts:

- Construction activities lasting more than one day would exceed ambient exterior noise levels by 10 dBA or more when measured at the nearest noise-sensitive land use.

- Construction activities lasting more than ten days within a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more when measured at the nearest noise-sensitive land use.

- Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive land use between the hours of 9:00 pm and 7:00 am, Monday through Friday; and before 8:00 am or after 6:00 pm on Saturday; or, anytime on Sunday.

Many times, the infrequent nature of the peak very loud construction noises, even on active construction sites, means that the construction activities would not exceed the above thresholds. In those cases in which a threshold is exceeded, however, the temporary noise impact would be significant. Because of the rate at which sound levels decrease over distance, this type of significant impact would be most likely for construction sites involving demolition, pile-driving or blasting within 150 feet of a noise-sensitive land use (residences, in particular). Because of the widespread and varied nature of the future development needed to achieve build out of Riverside County pursuant to the General Plan, it is reasonably foreseeable that in some cases, such significant construction impacts would occur.

2. Regulatory Compliance for Impact 4.15.D

As explained below, compliance with the following existing laws, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441 would aid in reducing potential adverse impacts related to construction noise. They cannot, however, ensure that noise levels are reduced to below the level of significance in all cases, and significant impacts may still result.

a. Compliance with Federal and County Regulations

All future development within unincorporated Riverside County must conform to federal and local regulations regarding noise. These regulations ensure that measures necessary to avoid or minimize significant noises are implemented for all project phases, including both construction and operation. They also help protect adjacent sensitive uses from adverse construction noise effects, as follows:

Federal Noise Control Act of 1972: The noise standards set by the EPA pursuant to this act provide guidelines and standards for indoor and outdoor noise levels to address the effects of noise on public health, welfare and the environment. Accordingly, compliance with this act's standards would prevent considerable noise interference and annoyance in noise-sensitive areas. Future development accommodated by GPA No. 960 would be required to comply with all necessary standards prior to approval, thereby reducing potential adverse impacts related to construction noise.

Ordinance No. 847 (Regulating Noise): This ordinance establishes countywide standards regulating noise with maximum decibel levels based on General Plan land use designation consistency. While the County of Riverside does not set construction noise limits, Ordinance No. 847 does restrict construction activities within one-quarter of a mile of an occupied residence to the hours of 6:00 am to 6:00 pm during the months of June through September, and from 7:00 am to 6:00 pm during the months of October through May. Restricting private construction hours of operation throughout Riverside County would reduce potential impacts related to construction noise.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.15.3.C, above, Policies N 13.1 through 13.4, in particular, provide mitigation for impacts associated with construction noise. Implementation of these General Plan policies related to construction noise would reduce potential adverse impacts of future growth and development as a result of development consistent with GPA No. 960 to less than significant levels.

Policy N 13.1: This policy requires that future development minimize potential impacts of construction noise on adjacent uses within acceptable practices.

Policy N 13.2: This policy ensures that construction activities are limited to certain hours of operation in order to minimize adverse noise impacts. Regulations regarding hours of operation for construction are also detailed in various Riverside County ordinances, including Ordinance No. 847, as per above.

Policy N 13.3: This policy requires developments adjacent to occupied, noise-sensitive uses have a construction noise mitigation plan prepared prior to issuance of a grading permit. This requirement is included as part of a project's conditions of approval that are issued by the County of Riverside. The plan must identify specific details on construction noise impacts and how it would be mitigated.

Policy N 13.4: This policy requires that all construction equipment utilize noise reduction features (mufflers, engine shrouds, etc.) at least as effective as those originally installed by the manufacturer.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.13.1A and 4.13.1B were imposed to reduce impacts associated with construction noise generated from development projects to a less than significant level. These measures remain applicable to this project. Mitigation Measure 4.13.1A would lessen impacts by requiring the preparation and approval of a construction-related noise mitigation plan. Mitigation Measure 4.13.1B would lessen impacts by limiting the time and frequency of construction haul trucks in the area. These mitigation measures would apply to any new developments and would address any construction noise impacts on adjacent existing sensitive uses.

Existing Mitigation Measure 4.13.1A: Prior to the issuance of any grading plans, the County [of Riverside] shall condition approval of subdivisions adjacent to any developed/occupied noise-sensitive land uses by requiring applicants to submit a construction-related noise mitigation plan to the County [of Riverside] for review and approval. The plan should depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project through use of such methods as:

- The construction contractor shall use temporary noise attenuation fences where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses.
- During all project site excavation and grading on site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.

- The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 am and 7:00 pm Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

Existing Mitigation Measure 4.13.1B: The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours specified for construction equipment. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by [Riverside] County staff.

3. Finding on Significance for Impact 4.15.D

Per the above analysis, future development accommodated by GPA No. 960 must include measures to adequately mitigate construction noise impacts. It is feasible that this could be achieved for new development (through site design, buffers, layout, construction materials, increased insulation, etc.). In addition, compliance with the above-listed regulatory programs and General Plan policies, as well as Mitigation Measures 4.13.1A and 4.13.1B from EIR No. 441, would further reduce any construction-related impacts to future new development. However, in some cases, particularly where existing noise-sensitive land uses occur within 100-150 feet of certain construction activities (pile driving, demolition, etc.), it may not be possible to reduce construction noise levels to less-than-significant levels. In these locations, impacts may be significant if the construction-associated noise levels exceed regulatory limits and/or exceed "temporary" duration. In these cases, significant construction impacts would result that cannot be reduced to less-than-significant levels. Such impacts would be significant and unavoidable.

E. Would the project result in the exposure of people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, public use airport or private airport/private airstrip?

Impact 4.15.E – Expose People to Excessive Airport-Related Noise Levels: Future development accommodated by the project, GPA No. 960, may result in the exposure of new noise-sensitive land uses to noise from operations at public and private airports, airstrips and helipads. Around larger public airports, noise levels can exceed acceptable standards (e.g., 60 dBA) in certain areas, as shown by noise-contour maps of existing, future and ultimate build out operational conditions for public airports. The Airport Land Use Compatibility Plan (ALUCP) adopted by the Riverside County Airport Land Use Commission (ALUC) addresses noise-related land use constraints for the various zones surrounding Riverside County's airports. All future development proposed would be required to comply with applicable ALUC policies, as well as state and county regulations and policies, regarding site design and building construction to achieve acceptable interior and exterior noise exposure levels for habitable structures. Compliance with these and other applicable standards, as well as existing mitigation measures from EIR No. 441, would ensure that airport-related noise impacts on future development pursuant to the project would be less than significant.

1. Analysis of Impact 4.15.E

Implementation of the project would ultimately result in an additional number of people living within areas where airport-related noise levels exceed acceptable exterior noise exposure standards. Residential infill on small parcels

located within the immediate vicinity of the airport could also result in an incremental increase in exposure of people to elevated noise levels.

Airports that are either public or serve a scheduled airline are required to have an ALUCP adopted by the airport land use commission (ALUC) overseeing Riverside County's airports. Among other things, the purpose of the ALUCP is to ensure that public safety is protected, including safety from excess noise effects. In addition, GPA No. 960 includes changes in General Plan land use designations (LUDs) for parcels surrounding three airports (Flabob, Riverside Municipal and Blythe) to better improve land use compatibility between potential development and the surrounding airports' safety, noise and other constraints (e.g., those shown in Table 4.15-P). No other airport-related changes are proposed under GPA No. 960, nor does it include the provision of (or changes to) any new airports, private airstrips or helipads. Thus, the project would not result in any increase in noise levels at any of these air facilities and would not cause additional airport-related noise exposure to any existing or future noise-sensitive land uses surrounding these air facilities.

As described previously, each public airport in or affecting Riverside County has an associated ALUCP that shows airport noise contours and identifies allowable land uses within each noise contour. These ALUCPs also contain noise level criteria specifically for a variety of land uses, including: residential, manufacturing, transportation, communications and utilities, wholesale and trade, business and personal services, shopping districts, public and quasi-public services, and recreation uses. Areas addressed by ALUCPs are indicated in the Riverside County General Plan by Airport Influence [Policy] Areas (AIAs). Development proposed within an AIA is required to be evaluated for aircraft noise impacts and to incorporate or implement appropriated noise-reduction measures, such as aviation noise easements, increased building insulation, double-paned windows, etc. Such policies would be applied on a project-by-project basis, as necessary to mitigate site- and project-specific noise impacts.

Use of project-specific noise mitigation measures (building siting and design, construction materials, buffers, sound walls and other noise abatement measures) and adherence to the safety setback and land use compatibility guidelines in the ALUCP would ensure that airport-related noise impacts would be mitigated to less than significant levels. Implementation of the General Plan's policies and plans would also help reduce the potential for excess noise effects. In total, therefore, the project would not cause, result or be subject to any significant airport-related noise impacts, and the effects of air-related noise on future development accommodated by GPA No. 960 would be less than significant.

2. Regulatory Compliance for Impact 4.15.E

As explained below, compliance with the following existing laws, regulatory programs, General Plan policies and existing Mitigation Measure 4.13.2D from EIR No. 441 would aid in ensuring airport noise impacts on new development accommodated by GPA No. 960 are less than significant.

a. Compliance with Federal and County Regulations

Compliance with the following regulations would reduce potential adverse airport noise impacts:

Federal Aviation Administration (FAA) Standards: Title 14, Part 150 of the FAA standards details requirements regarding the development, submission and review of airport noise exposure maps and airport noise compatibility programs. They also establish requirements for approving or disapproving compatibility plans, as well as identifying those uses that are generally compatible with various noise levels. The FAA set a noise level standard of 65 dBA L_{dn} CNEL for land uses to be considered compatible when associated with aircraft noise. Those areas

that exceed noise levels of 65 dBA L_{dn} CNEL due to aircraft noise are more limited on the types of development that would be allowed. Future development accommodated by GPA No. 960 would be required to adhere to the FAA standards, thereby ensuring development is appropriate for the noise levels present or projected.

California Noise Insulation Standards: This regulation sets noise insulation standards for the interior room noise of multi-family residential buildings as established in CCR Title 24. This code also requires that an acoustical study be prepared whenever residential structures are being proposed near various transportation routes (including airports) where noise levels may exceed 60 dB or greater. It also requires implementation of all necessary mitigation to ensure acceptable noise levels are achieved, thereby ensuring that development of the residence has been designed in such a manner that will minimize interior noise levels. These standards would further ensure that future development resulting from GPA No. 960 would not be exposed to significant air travel-related noise impacts.

Riverside County Airport Land Use Compatibility Plans: The ALUCP (both the master document and earlier ones, where not superseded) promotes compatibility between airports and the land uses that surround them by restricting residential densities, limiting the intensities of non-residential developments and in some cases prohibiting certain uses based on the particular zone of the airport plan. Compliance with the ALUCP would ensure that noise-sensitive land uses developed in the vicinity of public airports and other air facilities would not be exposed to significant noise impacts.

b. Compliance with Existing General Plan Policies

Of the General Plan policies listed in Section 4.15.3.C, above, Policies N 7.1 through 7.4 and LU 1.8, 15.1 and 15.2, in particular, provide mitigation for impacts associated with airport noise for the reasons discussed below. Implementation of these General Plan policies would ensure air-related noise impacts on future new development accommodated by GPA No. 960 are reduced to less than significant levels.

Policy N 7.1: This policy requires that future development within General Plan Airport Influence [Policy] Areas comply with the applicable ALUCP compatibility criteria. These requirements ensure that new development is compatible with the existing and future (and ultimate) airport noise environment by using airport noise contours as guides to future planning and development decisions.

Policy N 7.2: This policy requires the County of Riverside to adhere to noise compatibility criteria as detailed by the applicable Airport Influence Area when making land use decisions. This would ensure land use compatibility and reduce potential adverse impacts related to airport noise.

Policy N 7.3: This policy prohibits any new residential land use with the exception of single-family dwellings on legal lots to be developed within noise contour areas of 60 dB CNEL for any operating public-use or military airports. Along with Policies N 7.1 and 7.2, this policy further ensures land use compatibility, reducing the potential for significant adverse impacts related to airport noise.

Policy N 7.4: This policy requires future development sites be consistent with applicable Airport Influence Area policies to protect new development from significant air-travel related noise impacts.

Policy LU 1.8: This policy requires that various development applications, such as specific plans, as well as General Plan and specific plan amendments, among others, which fall within an Airport Influence Area be submitted to the ALUC for review and consistency finding. The ALUC determines whether or not the development proposal is consistent with the applicable ALUCP, including noise contours. Ensuring consistency with applicable ALUCPs help reduce adverse impacts related to airport noise.

Policy LU 15.1: This policy encourages the continued operation of airport facilities in order to meet current and future needs. It also, however, requires the operation of said facilities in a manner that minimizes potential noise impacts.

Policy LU 15.2: This policy also requires all future development projects be consistent with applicable ALUCPs, reducing potential adverse impacts related to airport noise through land use compatibility.

c. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, certified for the 2003 RCIP General Plan, Mitigation Measure 4.13.2D, as well as several others (see below) were imposed to reduce impacts associated with long-term noise sources, including air-travel related noise, that would exceed Riverside County noise standards. These measures remain applicable to this project. In particular, compliance with Mitigation Measure 4.13.2D would ensure land use compatibility for schools and ensure they are not subject to significant air-travel related noise impacts. In addition, existing EIR No. 441 Mitigation Measures 4.13.2A, 4.13.2B and 14.13.2C, as presented in the mitigation discussion for Impact 4.15.A, shall also apply as mitigation for this impact.

Existing Mitigation Measure 4.13.2A: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2B: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2C: See Impact 4.15.A, above, for full text of this measure.

Existing Mitigation Measure 4.13.2D: Ensure that all new schools, particularly in subdivisions and specific plans, are sited more than 2 miles away from any airport.

3. Finding on Significance for Impact 4.15.E

Implementation of, and compliance with, the above-listed existing regulatory programs, General Plan policies and existing Mitigation Measures from EIR No. 441 would ensure that adverse airport noise impacts on new development accommodated by GPA No. 960 would be less than significant. No project-specific mitigation is needed.

4.15.7 Significance After Mitigation for Noise

As outlined above, future development accommodated by the General Plan changes proposed under GPA No. 960 would result in a significant increase in ambient noise levels and increase the number of people and noise-sensitive land uses exposed to substantial noise levels. It would also generate or expose people to excessive groundborne noise and vibration, as well as substantially increase ambient noise levels throughout the county. Where new development is proposed in areas subject to excessive existing noise or projected to exceed acceptable noise levels in the future, compliance with a variety of federal, state and county policies, regulations, standards and programs, as well as Riverside County General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure new development is sited, designed and constructed in a manner that minimizes ambient noise impacts. Potential impacts to noise-sensitive land uses as a result of air-travel related noise levels would similarly be reduced to less than significant levels.

For impacts to existing noise-sensitive uses, however, the wide-spread, diffuse nature of the noise impacts, particularly those from increased traffic volumes resulting from the project, would result in significant impacts that cannot be feasibly reduced to acceptable noise levels. Thus, the project would result in generation or exposure of existing uses to excessive noise in some areas, or would result in a substantial permanent or temporary increase in ambient noise levels. These impacts would be significant and unavoidable for the reasons outlined herein.

Section 4.16

Parks and Recreation

Section 4.16 Parks and Recreation

4.16.1 Introduction

This section assesses how the proposed project, General Plan Amendment No. 960 (GPA No. 960), would affect both existing and future parks and recreational facilities, as well as the physical environment on which these resources are or may be located. Because of its recreational functions, Riverside County's trail system, which provides non-motorized transport and recreation for pedestrians, bicycle riders and equestrians, is also discussed in this section.

4.16.2 Existing Environmental Setting - Parks and Recreation

Riverside County has a variety of natural and recreational resources, ranging from the mile-high alpine wilderness of San Jacinto State Park to the blistering expanse of the Colorado Desert floor; from historic parks, such as California Citrus State Historic Park, to the rolling hills of the Santa Rosa Plateau Ecological Reserve. Riverside County parks and recreational areas offer residents and visitors a myriad of recreational opportunities while providing valuable buffers within built-up urban spaces. The locations of existing parks and recreation areas in unincorporated Riverside County are shown in Figure 4.16.1 (Map of Existing Parks and Recreational Resources in Riverside County). A summary of all the existing parks within unincorporated Riverside County is also provided in Table 4.16-A (Park and Recreational Jurisdictional Totals within Riverside County), below. Additional details on these facilities were provided in the 1999 Existing Setting Report, which was prepared for the 2003 General Plan EIR No. 441.

With an increasingly urban population developing in Riverside County, greater demands are being placed upon available parks and recreational facilities. In addition, parks provide valuable buffers between built-up urban spaces and encourage healthy active lifestyles. The County of Riverside currently maintains 35 regional parks, encompassing roughly 22,300 acres. More than half of these parks are located in the western portion of the county, with other facilities scattered in throughout the desert, mountains and Colorado River regions.

Within Riverside County are four park and recreation districts: Beaumont-Cherry Valley, Desert, Jurupa and Valleywide. Together, these four districts provide approximately 27 neighborhood and community parks accounting on approximately 275 acres of parkland. Additionally, some County Service Areas (for example, CSA 134) also provide local park maintenance services, often for parks constructed as part of development projects. The cities within Riverside County also offer numerous park and recreational facilities as well; currently 215 parks over 1,500 acres. However, these city facilities are outside the scope of the County's jurisdiction. (Note: the City of Jurupa Valley is treated as unincorporated land for the purposes of this chapter since its July 1, 2011, incorporation post-dates this EIR's NOP date of April 2009.)

Large swaths of open and recreational lands fall under state or federal jurisdictions within Riverside County. The boundaries of many of these facilities, particularly the National Parks and Forests, typically stretch beyond Riverside County. Table 4.16-A, below, summarizes parks and recreational areas under state or federal jurisdiction. Details on their size and boundaries are also provided in more detail in Table 4.16-B (Existing and Proposed Parks and Recreation in Riverside County).

Table 4.16-A: Park and Recreational Jurisdictional Totals Within Riverside County

Type of Parks	Number of Parks	Total Acres	General Description
National (Federal)	4	1,126,350	National Forest, National Park and National Monument lands
State of California	8	39,423	State-maintained parks, open space and recreation areas
Riverside County[1]	35	22,317	Regional park locations offering a wide range of recreational activities
Riverside County Park Districts[2]	27	275	Neighborhood and community parks offering a wide range of recreational activities

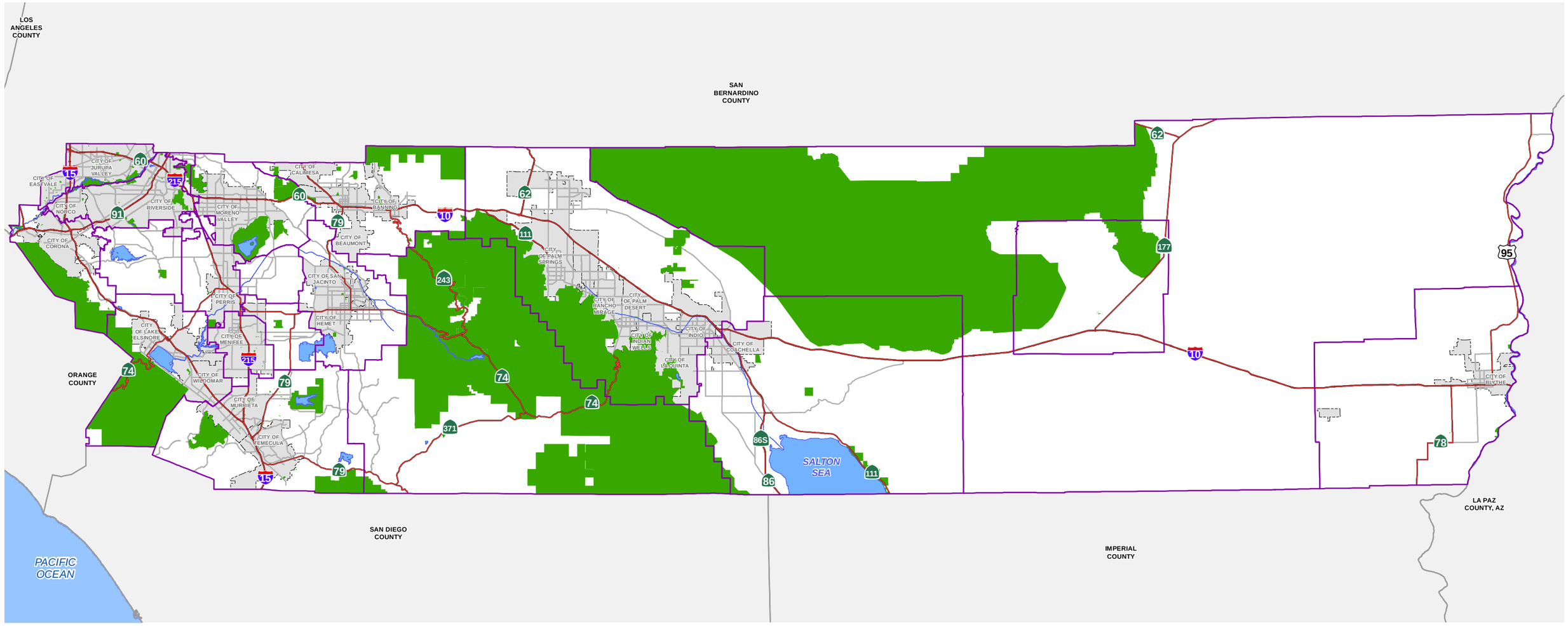
Footnotes:
1. Parks maintained by the Riverside County Regional Park and Open Space District.
2. Accounts for park and recreational facilities in County of Riverside park districts.
Source: Riverside County GIS Dept., 2010.

A. Federal Recreational Resources

There are four National Park and Recreation areas that fall within Riverside County, including the Santa Rosa/San Jacinto Mountains National Monument, the San Bernardino National Forest, the Cleveland National Forest and Joshua Tree National Park. Together, these landmarks provide extensive recreational opportunities for the residents of Riverside County. These resources are as follows:

Santa Rosa / San Jacinto Mountains National Monument: Established by U.S. Congress in 2000 and encompassing two federal Wilderness Areas, the National Monument covers approximately 150,800 acres of federal lands (86,400 acres Bureau of Land Management (BLM) and 64,400 acres United States Forest Service (USFS)). The total area also includes approximately 23,000 acres controlled by the Agua Caliente Band of Cahuilla Indians, 8,500 acres controlled by California Department of Parks and Recreation, 34,500 acres controlled by other State of California agencies and approximately 55,200 acres of private land.

San Bernardino National Forest: This large National Forest spans both Riverside and San Bernardino Counties. Of the National Forest's 823,816 total acres, approximately 241,600 acres occur within Riverside County, in three discontinuous locations (223,980 acres, 17,453 acres and 167 acres, respectively). The U.S. Forest Service manages this resource.



Data Source: Riverside County Parks (2012)

Parks & Forests

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.16.1

December 16, 2013

Miles

0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

PARKS, FORESTS, AND RECREATION AREAS IN RIVERSIDE COUNTY

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Table 4.16-B: Existing and Proposed Parks and Recreation in Riverside County

Park	Region	Size (acres)	Features[1]
National Park Service / Federal Lands [4]			
Cleveland National Forest (USFS)	SW	90,749	E, F, HS, HT, OC, ORV, P
Joshua Tree National Park (BLM)	CV / FE	668,877	E, HT, OC, P
San Bernardino National Forest (USFS)	NP/ CV / FE	241,600	F, HF, HS, HT, OC, ORV, P
Santa Rosa/San Jacinto Mtns Nat'l Monmnt. (BLM)	CM	271,492	E, HS, HT, OC, ORV, P
State Parks (California Dept. of Parks & Recreation)			
Anza-Borrego Desert State Park	CV	38,489	HF, E, HT, OC, P, VC~~, A~~
California Citrus State Historic Park	NW	387	HF, P, VC, M, citrus groves
Chino Hills State Park	NW	310[3]	E, HF, HT, OC, P
Indio Hills Palms State Park	CV	5,661	UNDEV, "No marked access rds"
Lake Perris State Recreational Area	WV	9,615	B, E,F,HS, HT, OC, P,SW, HF
Mount San Jacinto State Park	CM	14,020	E, HT, OC,PC, P, VC, NP
Salton Sea State Recreational Area	CV	9,611	B, F, OC, P, SW, PC, VC
San Timoteo Canyon State Park	NP	~2,000	UNDEV (not open to public yet)
County Parks (~~County Regional Park & Open Space Agency~~ Riverside County Regional Park and Open-Space District) (All are "regional parks" unless specified otherwise.)			
Norton Younglove Reserve	NP	~3,000	NP
Bogart Park	WV	~~387~~ 400	E, F, HT, OC, PC, P
Box Springs Mountain Reserve	NW	3,320	E, HT
Double Butte County Park	WV	580	UNDEV
Gilman Historical Ranch & Wagon Museum	NP	170	HF, M , HT, P
Goose Flats Wildlife Area	FE (Col R)	230	B, F
Harford Springs Reserve	NW	529	UNDEV, "Limited public access"
Hidden Valley Wildlife Area	WV	1,510	E, HT, NC, P
Humber Park	CM	17	HT
Hurkey Creek Park	CM	120	HT, OC, P, PC, PG
Idyllwild Park	CM	~~184~~ 202	E, HT, NC, OC, P
Idyllwild Nature Center	CM	~200	HT, NC, OC, P, E, M
Jensen Alvarado Historical Ranch & Museum	NW	30	HF, M, P
Roy W. Kabian Memorial Park	WV	640	1 acre - P, PG; rest - E, HT
Lake Cahuilla Recreational Area	CV	~~1,888~~ 710	E, F, HT, OC, SW
Lake Skinner Recreation Area	WV	6,817	OC, B, HT, F, SW, PG
Lawler Lodge Park	CM	75	OC, E, HT
Louis Rubidoux Park & Nature Center	NW	64	HT, NC, P
Martha McLean-Anza Narrows Park	WV	297	E, HT, P, PG
Mayflower Park	FE (Col R)	24	B, F, OC, P, SW
Maze Stone Park	SW	6	HF
McCall Memorial Park	CM	88	E, HT, P, OC
McIntyre Park	FE (Col R)	87	B, F, OC, P, PC, O-2
Horace Miller Park	FE (Col R)	5	Planned (B, F, PC)
Pine Cove Park	CM	19	P
Rancho Jurupa Park	WV	~~350~~ 200	F, OC, P, PC, PG
Santa Ana River Wildlife Area	WV	644	E, HT
Santa Rosa Plateau Ecological Reserve	WV	6,930	E, HF, HT, NC, P, NP
Trujillo Adobe Historical Area	WV	1	HF
Crestmore Manor	NW	1	P, HF, special event facilities
Community Parks (Riverside County Regional Park and Open Space District)			
Cabazon Park	NP	9	P, PG, SF, O-4
Central Park	SW	5	P, PG, SF, T
Coral Canyon Park	NW	9	P, PG, SF, HT
Deleo Sports Park	NW	25	D, PG, SF, T, P, splash pad
Discovery Park	SW	-	P, PG, SF

Park	Region	Size (acres)	Features[1]
Galleron Park	SW	7	D, P, SF
Goodhope Park	WV	1	P, PG, SF
Highgrove Park	NW	9	P, PG, SF, T
Joseph Park	SW	-	P, SF
Madigan Park	SW	6	P, PG, SF, T
Montecito Ranch Park	NW	6	P, PG, SF
Morgan Hill Park	SW	6	D, P, PG, SF
Overlook Park	SW	-	P
Perrett Park	SW	4	B, F, P, PG, SF
Willow Park	SW	8	D, HT, P, PG, SF
Beaumont-Cherry Valley Recreation & Park District (Only facilities in unincorporated areas are listed)			
Edgar Canyon Nature Park	NP	8	CC, NC
Grange Community Center	NP	1	CC
Desert Recreational District (Only facilities in unincorporated areas are listed)			
Canal Regional Park	CV	369	P, O-3
Coral Mountain Regional Park	CV	600	Planned Archeological Park with 123 acres to be public; rest - OS
Mecca Community Park & Community Center	CV	5	CC, P, SW, SF
Mecca Hills Mini Park	CV	N/A	P, PG
Thousand Palms Park & Community Center	CV	9	CC, P, PG, SF
Desert Regional Park	CV	280	*Planned*
Jurupa Area Recreation & Park District (All Community Parks unless specified otherwise)			
Harvey Field at Agate Park	NW	9	P, PG, SF
Avalon Park	NW	10	GYM, P, PG, SF
Centennial Park	~~Planned~~ NW	23	*UNDEV*
Clay Park	NW	6	P, PG, SF
Glen Avon Heritage Park	NW	13	P, PG, SF, Splash Grounds
Horseshoe Lake Park	NW	13	*UNDEV*
Knowles Athletic Park	NW	6	SF
Laramore Park & Arena	NW	5	E, P, PG
Limonite Meadows Park	NW	4	P, PG
Rancho Mira Loma Park	NW	6	P, PG, SF
Veterans Memorial Park / Community Center	NW	10	CC, P, PG, SF, SW
Wineville Park	NW	5	P, PG
Jurupa Community Service District (JCSD)			
Cedar Creek Park	NW	10	B, P, PG
Deer Creek Park	NW	9	P, PG, SF
Harada Heritage Park	NW	31	D, P, PG, SF, O-1, O-4
James C. Huber Park	NW	13	P, PG, SF, T, O-4
McCune Family Park	NW	12	P, PG, SF, T
Orchard Park	NW	10	P, PG, SF, O-4
Providence Ranch Park	NW	13	P, PG, SF,
American Heroes Park	NW	19	P, PG, SF, D
Eastvale Regional Park	NW	N/A	*Planned*
Mountain View Park	NW	8	P, PG, SF, T
Riverwalk Park	NW	13	P, PG, T
Dairyland Park	NW	9	P, D, Splash Grounds
Eastvale Trail	NW	4.77	E, HT
Halfmoon Park	NW	5	P, PG, SF
Valleywide Park & Recreation District			
Abelia Sports Park	WV	17	P, PG, SF, T, HT
Adeline's Farm	WV	1	P, PG
Avignon Park	WV	0.5	SF

Park	Region	Size (acres)	Features[1]
Brookfield Park (12 ac) & Open Space (62 ac)	WV	74	P, PG, SF, HT, OS (UNDEV)
Butterfield Park	WV	5	PG, SF
Cottonwood Park	WV	10	GYM, P, PG, SF, HT
Crown Valley Park	WV	7	P, PG, SF, T
Emerald Park	WV	7	PG, SF
Fieldview Park	WV	7	P, PG, SF, HT
Kona Park	WV	1	PG
Leon Park	WV	5	P, PG, SF, HT
Louis Jackson Park	WV	10	P, PG, SF
Primrose Park	WV	3	P, PG, SF
Rancho Bella Vista Park & Community Center	WV	7	GYM, P, PG, SF
Sheffield Park	WV	14	SF, HT
Spencer's Crossing	WV	11.5	P, PG, SF, HT
Off Road Vehicle Parks			
Cahuilla Creek Motocross Park	Private	67	ORV
Lake Elsinore Motocross Park	Private	90	ORV
Milestone Ranch Motocross Park	Private	55	ORV
Perris Raceway	Private	23	ORV
Starwest Motocross Park	Private	120	ORV
Others (Operating entity)			
PVID Fishing Access	FE (Col R)	2	F
Diamond Valley Aquatic Center & Sports Park (Priv)	WV	128	PG, P, SF, SW, T
Highgrove Community Park (EDA CSA 126)	NW	9	P, PG, T, HT, CC
Jurupa Mountains Cultural Center	NW	82	M, P
The Living Desert Zoo & Gardens	CV / FE	1800	G, P, VC, NC, HT, NP, PG, ZOO
Blythe Marina Recreational Area (Private)	FE (Col R)	14	B, F, OC, P, SW, PC
Indio Hills Park	CV	~2,200	P, PG, SF

Footnotes:

1. Facilities Key:

~~A~~	~~Archeological features~~	NC	Nature / interpret. center	**Other**	
B	Boating & water rec	NP	Nature preserve	O-1	Roller hockey rink
CC	Community center	OC	Overnight camping	O-2	Canoe rental
D	Dog park / dog rec. area	ORV	Offroad vehicle rec area	O-3	Radio-control plane field
E	Equestrian facilities / trails	P	Picnic facilities	O-4	Skate Park
F	Fishing	PC	Primitive Camping		
GYM	Gymnasium	PG	Playground / tot lot		
HF	Historical features	SF	Sports fields / facilities	PLANNED	*Site identified only*
HS	Hunting / shooting	SW	Swimming	UNDEV	*Undeveloped site*
HT	Hiking trails	T	Tennis court(s)		
M	Museum	VC	Visitor center		

2. Regions Key:
   - NW Riverside metro region (Riverside, Corona, Eastvale, etc.)
   - SW SWAP and Temescal Valley region (including Wine Country, Menifee, etc.)
   - WV Western valley region (Perris, San Jacinto, etc.)
   - CM Central mountains region (San Jacinto Mountains, Idyllwild, etc.)
   - NP Northern Pass region (Cherry Valley, Banning, Beaumont, etc.)
   - CV Coachella Valley region (Indio, Coachella, Salton Sea areas, etc.)
   - CR Far east region (along Colorado River, Blythe, Stateline, etc.)
3. Acreage listed is that within Riverside County only; in total, the park covers 14,100 acres , most in San Bernardino County.
4. Acreage listed for portions within Riverside County only. See Section 4.14.2 for full details.

Source: Riverside County GIS Dept., RCLIS, 2011.

Cleveland National Forest: The Cleveland National Forest covers a total of 566,866 acres and is the southernmost National Forest in California. It spans across three counties, including San Diego, Orange and Riverside. The portion within Riverside County totals approximately 90,750 acres and is under U.S. Forest Service management.

Joshua Tree National Park: This BLM-managed National Park encompasses a total of approximately 1,017,750 acres spanning Riverside and San Bernardino counties. Approximately 794,000 acres are within Riverside County.

B. State Recreational Resources

The California Department of Parks and Recreation manages and operates eight state parks within Riverside County, including the California Citrus State Historical Park. They also have State Recreation Areas at Lake Perris and the Salton Sea. These resources are as follows:

Anza-Borrego Desert State Park: This 600,000-acre park is the largest state park in California. The park is home to various plant and animal species, as well as a number of camp sites and trails. The park also encompasses a rich Native American History. Approximately 38,489 acres of the Anza-Borrego Desert falls within Riverside County.

California Citrus State Historic Park: The 387-acre California Citrus State Historic Park opened as a museum in 1993. The park is a tribute to the citrus industry and its importance to the State of California. The park features a number of recreational activities including, but not limited to, wildlife viewing, picnic areas as well as 186 acres of citrus groves.

Chino Hills State Park: Chino Hills State Park is a 14,102-acre park containing over 65 miles of trails. The park offers camping, walking, horseback riding and wildlife viewing to its visitors. Approximately 310 acres of Chino Hills State Park falls within Riverside County.

Indio Hills Palms Park: Indio Hills Palms Park is a part of the Coachella Valley Reserve and is directly adjacent to the preserve. The 5,661-acre park is known for its abundance of fan palms, which are native to California.

Lake Perris State Recreation Area: Our Nation's bird, the bald eagle, can be seen from the *Lake* Perris State Recreation Area ~~Park~~. This 9,615-acre park provides recreational activities such as hiking, horseback riding, camping and bird watching as well as numerous recreational water activities on Lake Perris.

Mount San Jacinto State Park: Mount San Jacinto is the second highest mountain range in Southern California. And, at 10,834 feet above sea level, Mount San Jacinto is the highest point in Riverside County. This park covers approximately 14,000 acres and is easily accessible from both eastern and western Riverside County. Visitors enjoy a number of recreational resources, including hiking and camping. The better portion of Mount San Jacinto State Park is located within the Santa Rosa and San Jacinto Mountains National Monument.

Salton Sea State Recreation Area: Man-made Salton Sea lies at 227 feet below sea level and was created roughly 100 years ago from water diversions and is maintained mainly by agricultural runoff today. Its perimeter features approximately 130 miles of shoreline, and water covers approximately 9,611 acres. The sea is reached from Highway 111. A variety of recreational activities are available including hiking, kayaking and camping.

San Timoteo Canyon Park: San Timoteo Canyon Park is currently an undeveloped State park and is not open to the public at this time. Once completed, San Timoteo Canyon Park is planned to cover approximately 2,000 acres.

C. Riverside County Regional Park and Open Space District

The Riverside County Regional Park and Open Space District (Park District) acquires, manages, develops and maintains 27 neighborhood and regional parks throughout Riverside County. The Park District maintains approximately 71,700 acres of land including 150 miles of multi-purpose recreational trails, seven archaeological sites, 16 wildlife reserves and natural areas. It also operates one boxing facility, manages four nature centers, patrols six historic sites and provides annual interpretive programs to more than 82,000 students. The District's park and open space resources provide enjoyment to residents of Riverside County and visitors alike.

The Park District also supports an Advisory Commission founded by the Board of Directors in 1994 for the purpose of advising and making recommendations to the Board concerning the planning, acquisition, development and use of parks and open space in unincorporated portions of Riverside County. The Commission also advises the Board on matters relating to the acquisition, development, maintenance and promotion of regional recreation trails in the county, and matters relating to the conservation and propagation of fish and game in Riverside County. Additionally, the Park District houses the Riverside County Historical Commission and Off-Highway Vehicle Recreation (OHVR) Commission. The Historical Commission is charged with discovering and identifying persons, events and places of historical significance in Riverside County and advises the Board of Supervisors in historical matters. The OHVR Commission advises the Board of Directors concerning the planning, acquisition, development and use of OHVR parks within the Regional Park District. There are also a number of off-road vehicle (ORV) parks within Riverside County operated by the USFS and BLM on federal lands, as well as numerous private recreational facilities throughout the county.

D. Park and Recreation Districts Within Riverside County

Beaumont-Cherry Valley Recreation and Park District (BCVRPD): The BCVRPD was formed in 1971 to provide, manage and maintain recreation and park facilities and activities for the Beaumont/Cherry Valley region of Riverside County. The District includes the incorporated cities of Beaumont and Calimesa, as well as unincorporated Cherry Valley and other areas west of the cities. Boundaries of the BCVRPD service area are shown in Figure 4.16.1; the three BCVRPD facilities within unincorporated Riverside County are indicated in Table 4.16-B. BCVRPD has an adopted service standard of 5 acres of parkland per 1,000 residents.

Desert Recreation District: The Desert Recreation District (DRD), formerly known as the Coachella Valley Recreation and Park District, encompasses the cities of Indio, La Quinta, Rancho Mirage, Coachella and Palm Desert, as well as unincorporated Riverside County regions of Thermal, Thousand Palms, Mecca and the surrounding areas. The DRD manages five community centers in the Coachella Valley region and a skate park in Palm Desert, as well as a number of parks, ball fields, pools and community centers. The District also has an archeological resource area that encompasses approximately 600 acres, 123 acres of which are planned to be developed for public access as part of Coral Mountain Park. Boundaries of the DRD are shown in Figure 4.16.1.

Valleywide Recreation and Park District: The Valleywide Recreation and Park District (VWRPD) provides recreational and park services to residents within an approximately 800-square mile area that includes the cities of Hemet, San Jacinto and Menifee, in addition to unincorporated territory in the region. Boundaries of the VWRPD are shown in Figure 4.16.1. Among the facilities managed by VWRPD are over 40 community parks, sports parks, tot lots and pockets parks, as well as four community centers and an aquatic park. There are also approximately 16 parks either planned or under development within the VWRPD.

Jurupa Area Recreation and Park District: The Jurupa Area Recreation and Park District (JARPD) formed in 1984 to provide parks and recreational facilities for "current and future families in the 91752 and 92509 zip code

areas." The District's boundaries are shown in Figure 4.16.1. The JARPD manages approximately 20 parks and recreational facilities, including a skate park, several pools and equestrian arenas.

E. County Service Areas

County Service Areas (CSAs) are managed by the Riverside County Economic Development Agency (EDA) and provide focused government services, such as fire protection, street lighting, parks and recreational facilities, or maintenance activities for localized portions of the county. CSA facilities operated by the County of Riverside include 22 County-owned and maintained parks and five community centers. In addition, CSAs will be responsible for 45 new parks that are currently in the planning/development stage and four planned regional sports parks. These new facilities are not a part of GPA No. 960 however. These CSAs provide the following local park maintenance: CSA 145 – La Ladera Park; CSA 152B – Temescal Valley Adopted Master Park Plan; CSA 143 – Willows Park, Morgan Hill Park, Silverhawk Park and Trail System; CSA 134 – Sycamore Creek Community Park. Boundaries of the relevant CSAs are shown in Figure 4.16.1.

F. Other Recreation Facilities

Off-Road Vehicle Parks: As noted in Table 4.16-B, there are a number of off-road vehicle (ORV) parks that operate within unincorporated Riverside County. These parks provide areas for the safe off-road operation of motorized vehicles, such as motorcycles (dirt bikes) and 3- and 4-wheeled all-terrain vehicles. Off-road vehicle parks within unincorporated Riverside County are located in the Cleveland National Forest, the San Bernardino National Forest and the Santa Rosa and San Jacinto National Monuments. These off-road parks are operated by the USFS and the BLM.

Private Facilities: This category only includes recreational facilities that are run by private entities on lands leased from or controlled by Riverside County. Countless other private recreational opportunities exist throughout the county, including golf courses, polo and equestrian centers, water parks, amusement parks, sports arenas and stadiums, among others, that are not included here.

An additional type of private recreational facilities is found primarily in planned communities and apartment complexes. Such facilities typically include playgrounds, tennis or basketball courts, pools and hot tubs, and often small turf areas for play or picnicking. However, these existing facilities are generally small and are so few in number that they have a minor effect on the overall provision of recreational facilities within Riverside County. Rather, they are designed to serve the residents of the multi-family units with which they are associated. There are also a number of existing and commercial recreational facilities within Riverside County that are privately owned and operated, and thus not listed here.

G. Trails, Bikeways and Paths

Trails are located throughout Riverside County and come in a variety of designs for pedestrians, bicyclists and equestrians to enjoy. The General Plan features a map of the "Trails and Bikeway System" envisioned for Riverside County at build out. Figure C-7 in the General Plan provides an overview of the county system with corresponding figures in each of the Area Plans for more detailed, local maps. See Figure 4.16.2 (Countywide Trails and Bikeways Map), below. The mapped system reflects a combination of both existing and proposed trails and alignments. Due to the complexity and sheer size of the trail system, no separate map exists of just the existing trails and paths.

1. Existing Trails System

At present, the system includes a wide variety of formal and informal trails. In some areas, formal trails have been built and are maintained by the County of Riverside or other responsible entity, such as a homeowners association, community service area or local park and recreation district. Formal trails are normally built according to County of Riverside (or park district or other agency) standards on identified easements with, where applicable, appropriate signage and maintenance provided by the responsible agency. In terms of formal trails, Riverside County currently has one developed trail that it maintains, the Santa Ana River Trail. The Santa Ana River Trail is part of a planned regional trail extending across multiple jurisdictions from the Pacific Ocean in Orange County to the San Bernardino Mountains in San Bernardino County.

Historical trails, created prior to the inception of county or park district standards, also exist but may not conform to current standards. Lastly, there are also many informal trails within Riverside County used by pedestrians, bicyclists and others for recreational and transportation purposes as well. Such trails are generally not formally mapped, especially if they do not coincide with planned county trail system alignments. These types of trails may cross public or even private lands, run along utility easements, abandoned railroad tracks, unmaintained dirt roads, etc. Often such trails lack connectivity to the Riverside County trail system, resulting in fragmentation and increasing difficulties for planning and implementation of the formal system.

2. Existing County Trail and Bikeway Standards

The General Plan includes a county trail system to provide connectivity among various existing recreational areas and regional trails, as well as policies to ensure coordination of trails with future development. The General Plan Circulation Element contains standards for two basic types of county trails: regional trails and community trails. Typical trail cross-sections are presented in General Plan Figure C-8 (see also Figure 4.16.3 (Existing Countywide Trails and Bikeways Map), below). Functions for these two existing General Plan trail types are outlined below. For a description of the revisions to these trail standards proposed as part of GPA No. 960, see Section 4.16.5.A, later in this chapter.

Regional Trails: Regional trails represent the "primary long-distance trails within the county" and are intended to provide linkages between communities, regional parks and open space areas. County regional trails also provide connectivity with federal and state parks, forests and recreational areas. They are generally maintained and operated by the Riverside County Regional Park~~s~~ and Open Space District.

Community Trails: Community trails are designed to connect to the regional trail system as well as provide connectivity throughout communities. They are designed for trail users preferring a soft trail surface, for example, equestrians, pedestrians, joggers and mountain bikers. Community trails are typically maintained by a local parks and recreation district or other governmental entity.

The Riverside County trail system also addresses bicycle use by providing three types of bike paths, plus a combination trail (bikes and pedestrians). The General Plan Circulation Element contains specifications and cross-sections on each of these trails, as well as standards for their construction and maintenance. In general, each bikeway type provides the following:

Class I Bikeways: Class I bikeways provide a separate right-of-way for the sole use of bicyclists and pedestrians. Class I bikeways may include landscape buffers and may also be designed to permit golf carts.

Class II Bikeways: Class II bikeways are provided within paved areas of roadways intended for preferential usage by bicycles. These one-way lanes follow the flow of motor vehicle movement.

Class III Bikeways: Class III bikeways are intended to provide continuity to the bikeway system by connecting Class I and Class II bikeways that are not contiguous.

Combination Trails: Combination trails provide both a Class I bikeway and a regional trail in one alignment. These trails serve as connectors that link together urban and rural communities along with other recreational resources such as various bodies of water and parks. Combination trails are ideal for users looking for long-distance trails.

4.16.3 Policies and Regulations Addressing Parks and Recreation

A. State and Federal Regulations

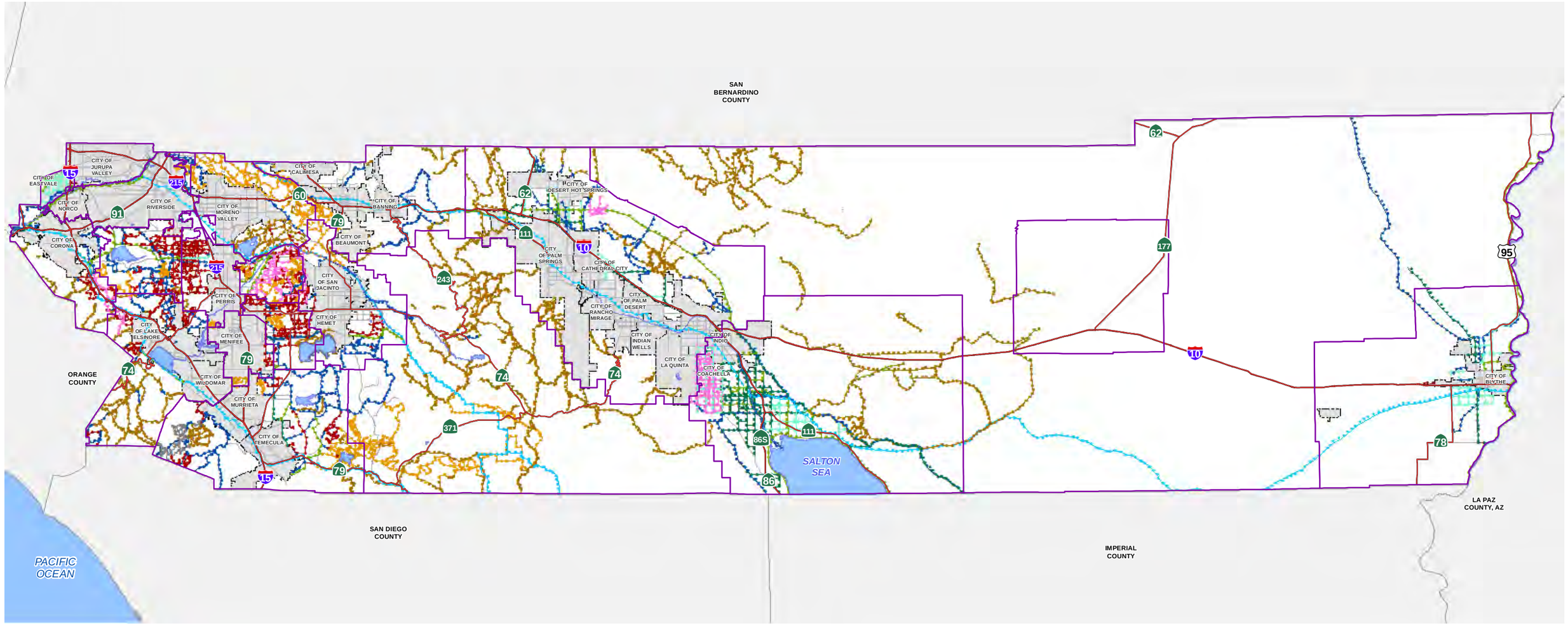
The following existing regulations are intended to protect existing parks and recreational resources. These regulations are not a part of the proposed GPA No. 960. Rather, they are regulations that have been enacted by the federal and state governments under separate actions.

1. General Management Plans

The strategic long-term vision, management and visitor use for National Park and Recreational areas is often guided through General Management Plans. These plans establish the foundation for protecting the respective park while also providing for memorable experiences for its visitors.

2. Quimby Act

Passed in 1975, this State of California law (CGC, Section 66477) enables the County of Riverside to require that developers set aside land, donate conservation easements or pay fees for park improvements as condition of approval for a tract or parcel map. The goal of the Quimby Act is to require developers to help mitigate the impacts of development that introduces new users for park and recreational facilities. The revenues generated through the Quimby Act, however, cannot be used for the operation or maintenance of park facilities. The Quimby fees must be paid and/or land directly conveyed to the local public agency that will provide the community's park and recreation services. For Riverside County, Ordinance No. 460 (Regulating the Division of Land) includes Section 10.35 addressing park and recreation fees and dedications related to Quimby Act and other issues; see below.



Data Source: Riverside County Parks (2013)

Regional Trail: Urban/Suburban

Community Trail

Combination Trail (Regional Trail / Class I Bike Path)

Class I Bike Path

Class II Bike Path

Regional Trail: Open Space

Design Guidelines Trail

Historic Trail (Southern Immigrant Trail, Juan Bautista De Anza National Historic Trail)

Non-County Trail (Public and Quasi-Public Lands)

RCHA Trail

Private Trail

Highways

Area Plan Boundary

City Boundary

Waterbodies

Note: Trails shown in non-county jurisdictions for informational/coordinate purposes only.

Figure 4.16.2

December 16, 2013

0 10 20 Miles

RIVERSIDE COUNTY
TRAILS AND BIKEWAY SYSTEM

Path: \\agency\tmags\Projects\Planning\Cindys\PurpleMapGallery\Fig4.16.2-BikewaysandTrails.mxd

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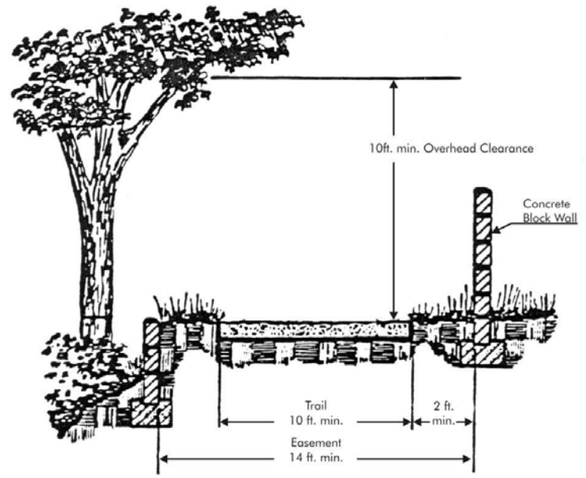
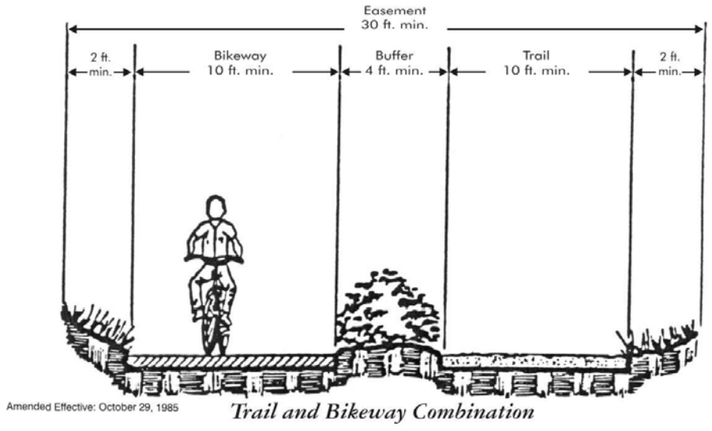
Trail Adjacent Fence/ Retaining Wall



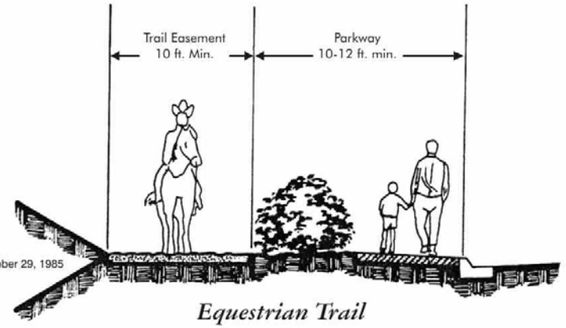
Trail Details



Amended Effective: October 29, 1985

Trail and Bikeway Combination

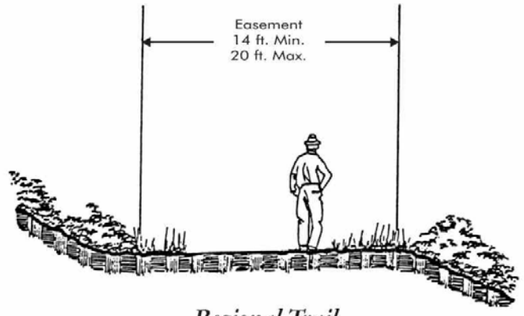
Equestrian Trail Easement Adjacent to Public Street



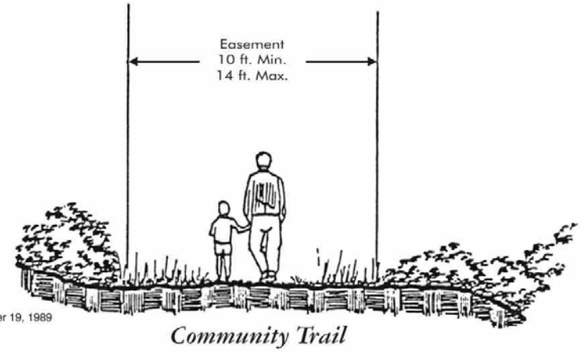
Amended Effective: October 29, 1985

Equestrian Trail

Regional and Community Riding and Hiking Trails



Regional Trail



Amended Effective: December 19, 1989

Community Trail

Data Source: Riverside County Transportation (2003); RCIP General Plan, Figure C-8, (2003)

Figure 4.16.3

December 16, 2013

Miles

0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

EXISTING TRAIL DETAILS

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B. Riverside County Regulations

The following existing regulations and policies are intended to protect existing parks and recreational resources within Riverside County. These policies are not part of the proposed GPA No. 960. Rather, they are policies that have been approved by the County of Riverside as separate discretionary actions.

Ordinance No. 460 - Regulating the Division of Land: This ordinance establishes the key provisions addressing the division of land in Riverside County. Among other things, in Section 10.35, it specifies that: "Whenever land that is proposed to be divided for residential use lies within the boundaries of a public agency designated to receive dedications and fees pursuant to this section, a fee and/or the dedication of land shall be required as a condition of approval of the division of land." It further specifies that dedication of 3 acres of parkland per 1,000 population, or payment of a fee in-lieu of such dedication, is necessary for the "public interest, convenience, health, welfare and safety." The fee and/or land dedications or improvements can only be used to provide neighborhood and community parks that would serve the proposed development.

Ordinance No. 328 - Rules and Regulations for the Government of County or District Owned or Operated Parks and Open Space Areas: This ordinance prescribes rules and regulations for parks and open space areas within Riverside County for the purpose of maintaining the integrity and effective use of such areas for recreational purposes. The ordinance also regulates the following: those uses allowed in parks/open space areas, the circulation of vehicles throughout the recreational areas and the maintenance and protection of landscaped areas.

C. Existing Riverside County General Plan Policies

The following policies are already part of the General Plan and are not part of the proposed project, GPA No. 960. Rather, these policies are those considered to play a role in ensuring any potential environmental impacts are further reduced through their application on a case-by-case basis when a given development proposal warrants their use.

1. Multi-Purpose Open Space (OS) Element Policies

Policy OS 20.3: Discourage the absorption of dedicated park lands by non-recreational uses, public or private. Where absorption is unavoidable, replace park lands that are absorbed by other uses with similar or improved facilities and programs.

Policy OS 20.5: Require that development of recreation facilities occur concurrent with other development in an area.

Policy OS 20.6: Require new development to provide implementation strategies for the funding of both active and passive parks and recreational sites.

2. Circulation (C) Element Policies

Policy C 16.1: Implement the Riverside County trail system as depicted in the Bikeways and Trails Plan, [General Plan] Figure C-7.

Policy C 17.2: Require bicycle access between proposed developments and other parts of the county trail system through dedication of easements and construction of bicycle access ways.

3. Land Use (LU) Element Policies

Policy LU *9.2* (Previously LU 8.2): Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and federal and state regulations, such as CEQA, NEPA, the Clean Air Act and the Clean Water Act.

Policy LU *25.1* (Previously LU 19.1): The County of Riverside shall develop and maintain a regional park system that provides recreational opportunities for residents and visitors of Riverside County.

Policy LU *25.3* (Previously LU 19.3): Require that park facilities be accessible to the community, regardless of age, physical limitations or income level.

4. Noise (N) Element Policies

Policy N 1.4: Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.

Policy N *13.1* (Previously N 12.1): Minimize the impacts of construction noise on adjacent uses within acceptable practices.

D. Proposed New or Revised Riverside County General Plan Policies

The following revisions to existing General Plan policies are included as part of GPA No. 960. The revisions are intended to enhance the policies' implementation and comprehensive use.

1. Land Use (LU) Element Policies

Policy LU *25.2* (Previously LU 19.2): Provide for a balanced distribution of recreational amenities. ~~in Open Space, Rural and Community Development land uses.~~

Policy LU *25.4* (Previously LU 19.5): Require that new development meet *or exceed* the parkland requirements as established in the Quimby Act and County enabling ordinances.

2. Circulation (C) Element Policies

Policy C *4.9* (Previously C 4.10): Review all existing roadways without pedestrian facilities when they are considered for improvements ~~(whether maintenance or upgrade)~~ to determine if new pedestrian facilities are warranted. New roadways should also be assessed for pedestrian facilities.

Policy C 15.1: Implement *a two-tiered system of trails,* and later expand *it into* an effective non-motorized transportation system.

Policy C 15.2: Seek financing to implement an effective non-motorized transportation system. This funding can include such *potential sources* ~~things~~ as state and federal grants*, Riverside County transportation funds, "in-lieu" fees, special assessments, parking meter revenues, other public and non-profit organization funds, developer contributions and other sources*.

Policy C 15.3: Develop a trail system which connects County parks and recreation areas while providing links to open space areas, equestrian communities, local municipalities and regional recreational facilities (including other regional trail systems), *and ensure that the system contains a variety of trail loops of varying classifications and degrees of difficulty and length.*

Policy C 15.4: *Periodically* ~~R~~*r*eview and update the *Trails and Bikeways Plan (*[General Plan] Figure C-7) ~~Regional Trail Map~~ in accordance with the review procedures and schedule of the General Plan, in order to *ensure its* ~~assure~~ compatibility with the other ~~elements~~ *components* of the *Riverside* County General Plan and with the similar plans of *agencies, such as* Western Riverside County Council of Governments *(WRCOG)*, Coachella Valley Association of Governments *(CVAG)*, Riverside County Transportation Commission *(RCTC)*, *Regional Conservation Authority, Riverside County Habitat Conservation Agency* and all jurisdictions within and abutting Riverside County. *This shall include consistency with the WRCOG and CVAG non-motorized planning documents.*

Policy C 16.2: Develop a multi-purpose ~~recreational~~ trail network with support facilities which provide a linkage with regional facilities, *and require trailheads and staging areas that are equipped with adequate parking, bicycle parking, restrooms, informative signage, interpretive displays, maps, and rules of appropriate usage and conduct on trails accessed from such facilities.*

Policy C *16.7* (Previously C 16.6) Adhere to the following trail-development guidelines when siting a trail:

a. ~~Permit urban trails to be located in or along transportation rights-of-way in fee, utility corridors, and irrigation and flood control waterways so as to mix uses, separate traffic and noise, and provide more services at less cost in one corridor.~~ *Require, where feasible, trails in urban areas to be located either outside of road rights-of-way or within road rights-of-way with the additional dedication right-of-way or easements in fee title to the County requiring dual use of utility corridors, irrigation and flood control channels so as to mix uses, separate traffic and noise, and provide more trail services at less cost.*

b. Secure separate rights-of-way for non-motorized trails when physically, financially and legally feasible. Where a separate right-of-way is not feasible, maintain recreation trails within the County *of Riverside or Flood Control* right-of-way*, where feasible*.

c. *Develop and implement* ~~Use~~ trail design standards which will minimize maintenance due to erosion or vandalism.

d. *Maximize visibility and physical access to trails from streets and other public lands.*

e. Provide a trail surface material that is firm and unyielding to minimize erosion and injuries.

f. ~~d.~~ When a trail is to be ~~reserved~~ *obtained* through the development approval process, base the precise trail alignments on the physical characteristics of the property, assuring connectivity through adjoining properties.

g. ~~e.~~ Consider the use of abandoned rail lines as multipurpose "rail-trails" *corridors through the "Rails-to-Trails" program.* ~~for multi-purpose trails~~

b. ~~f.~~ Place all recreation trails ~~a~~ safe distance*s* from the edge*s* of active aggregate mining operations and separate them by physical barriers*, such as fences, berms or other effective separation measures*. ~~i)~~ Avoid placing a trail where it will cross an active *mined materials* haul route.

i. ~~g.~~ Install warning signs indicating the presence of a trail at locations where regional or community trails cross public roads with high amounts of traffic. *Design and build trail crossings at intersections with proper signs, signals, pavement markings, crossing islands, and curb extensions to ensure safe crossings by users. Install trail crossing signs at the intersections of trail crossings with public roads to ensure safe crossings by users.*

j. ~~h.~~ *Design and construct trails that properly account for* ~~Take into consideration~~ such issues as sensitive habitat areas, *cultural resources,* flood*ing* potential~~s~~, access to neighborhoods and open space, safety, alternate land uses and usefulness for both transportation and recreation. ~~when designing and constructing trails.~~

k. ~~i.~~ Coordinate with other agencies and/or organizations (such as the U.S. Fish and Wildlife Service*, National Park Service, Bureau of Land Management, U. S. Army Corp of Engineers, U. S. Bureau of Reclamation,* and the *California* Department of Transportation) to encourage the development of multi-purpose trails. Potential joint uses may include historic*, cultural resources* and environmental interpretation, access to fishing areas and other recreational uses, opportunities for education and access for the disabled.

l. ~~j.~~ Work with landowners to address concerns about privacy, liability, security and trail maintenance.

m. Regional Urban, Regional Rural and Regional Open Space trails should be designed to be compatible with the community contexts in which they are being sited.

n. Driveway crossings by trails should be designed and surfaced in a manner compatible with multipurpose trails usage. Except for local, neighborhood-serving trails that are not intended as primary community linkages, select routes for trails that minimize driveway crossing.

o. Benches, fencing, water fountains, trees and shading, landscape buffers, rest stops, restrooms and other trail-related amenities shall be provided where appropriate.

p. All trails along roadways shall be appropriately signed to identify safety hazards, and shall incorporate equestrian crossing signals, mileage markers and other safety features, as appropriate.

q. Information about the County's trail system shall be provided at the Riverside County Park and Open Space District and online in order to make the public aware of the County's trail system.

r. Trails designed to accommodate equestrians shall not be sited along sound walls, project boundary walls and other walls that effectively obstruct visibility beyond the edge of a trail.

s. All trail surfacing shall be appropriate to an array of users of the trail. Soft-surfaced trails shall have smooth, firm, slip-resistant surfacing so as to minimize foot and ankle injuries.

t. Use already available or disturbed land for trails wherever possible for new or extended trails.

u. Use pervious pavement or bio-swales along paved trails to assist in maintaining water quality.

Policy C 17.3: Ensure that the bikeway system incorporates the following:

a. Interconnection *throughout and between* ~~of~~ cities and unincorporated communities.

b. ~~Provision of~~ *Appropriate* lanes to specific destinations such as State or County parks.

c. ~~Provision for~~ *Appropriate opportunities for recreational bicycle riding and* bicycle touring. ~~; and~~

d. ~~Support of Encouragement of~~ *Opportunities for* bicycle commuting *and golf cart commuting within communities, as appropriate for the terrain, traffic levels and proximity to surrounding destinations.*

e. Bikeways connecting to all urban transit centers and systems (bus stops, Metrolink stations, etc.) in the vicinity.

f. Bicycle parking at transit stops and park-and-ride lots.

Policy C 18.1: *Trail* Acquisition:

a. Promote public/private partnerships for trail acquisition.

b. Seek ways to build a trail system affordably and seek partners in doing so within a reasonable time frame, possibly in stages, to serve all trail communities and upgrade system of linkages/destinations.

c. ~~b.~~ Determine which public and/or private agencies have *existing* easements or ~~existing~~, unused rights-of-way, which potentially could be incorporated as trail linkages throughout Riverside County. Such agencies may include the Riverside County Flood Control and Water Conservation District, *regional and local park districts and transportation entities,* various utility companies/districts and railroad companies. ~~Leverage u~~*U*se roads, dirt roads, *and other easements* as trail routes.~~, to f~~*F*oster partnerships, get *which serve to facilitate* the *siting, building and managing of* trails built and managed, etc.

d. ~~c.~~ Evaluate the potential use of private-landowner tax credits for acquiring necessary trail easements and/or rights-of-way. A system such as this would allow a landowner to dedicate an easement for trail purposes in exchange for having that portion of the property assessed as open-space instead of a higher land-use category.

e. Seek to connect existing cul-de-sacs to each other, and to trail networks. In rare occasions, this may entail purchasing homes at the end of streets, constructing the connections and reselling the homes.

f. Wherever possible and to the extent consistent with overall trail system objectives, use trail designs and locations that minimize construction and maintenance costs.

Policy C 18.2: *Trail management and* maintenance*:*

a. Implement maintenance options such as the use of volunteers, associations, or private landowner maintenance agreements, and/or adopt-a-trail programs sponsored by various groups.

b. Implement methods to discourage unauthorized use of trails by motorized vehicles, which may cause trail deterioration, create an unsafe environment, and/or disrupt the enjoyment of the trails by legitimate trail users. These methods may include the installation of gates and motorcycle barriers, posting signs prohibiting unauthorized activities, or implementing educational programs to encourage the proper use of trails.

c. Research the potential for, and consider establishing, a countywide trail management entity that will facilitate the acquisition of adequate funds for trial maintenance.

d. Research the potential for, and consider establishing, a separate agency within the County to manage and maintain the county's trails system.

e. Use trail designs that remove or limit injury/safety liability concerns.

f. Use trail designs that minimize trail maintenance costs.

Policy C 18.3: *Trail* Funding*:*

a. Solicit all possible sources of funding to plan, acquire, and construct recreational trails. Sources can include, but not be limited to, development mitigation fees, private foundation grants, ~~and/or~~ funds *or assessments* from local, regional, state ~~and~~ *or* federal government entities.

b. Persuade local communities to finance their own community trail systems through the use of special tax *assessment* districts. If applicable, these districts should also provide adequate regulation for the keeping of horses.

3. Air Quality (AQ) Element Policies

Policy AQ 4.7: To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, ~~SOCAB~~ *SCAB*, the Environmental Protection Agency and the California Air Resources Board.

4.16.4 Thresholds of Significance for Parks and Recreation

The proposed project would result in a significant impact on parks or recreation if it would:

A. Cause growth that increases the use of existing neighborhood parks, regional parks or other recreational facilities resulting in or accelerating substantial physical deterioration of the facility.

B. Trigger growth that results in the need for new or physically altered park or recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

C. Trigger the need for construction or expansion of recreational facilities or uses that would have a significant adverse physical effect on the environment due to their provision.

4.16.5 Effect of GPA No. 960 on the General Plan and on Parks and Recreation

This section discusses the changes proposed in the General Plan related to parks and recreation. After this, the effects of the proposed project on parks and recreation are analyzed. Specific impacts and mitigation, as well as their level of significance, are evaluated in the subsequent section.

A. Proposed Changes to the General Plan

The existing General Plan addresses park and recreation resources in the Land Use (LU) Element and, in particular, in the Circulation (C) Element. As part of the project review process, park and recreation policies in the General Plan were reviewed and updated where necessary. In particular, this included an extensive revamping of the standards and specifications for both trails and bikeways, as described below. The changes were made to permit trail types to better suit the level of connectivity needed. For text of relevant General Plan policies, including those revised as part of GPA No. 960, see Section 4.16.3.C.

1. Revisions to County Trail Standards

As described above, the existing General Plan includes two basic types of trails: regional and community. As part of the General Plan update, these categories were revamped and expanded to provide a greater range of options for trail planning. The proposed trail sub-types would distinguish between suburban and open space areas, allowing for fewer amenities where trails serve merely to connect open or undeveloped areas. In more developed areas, trail standards may call for more elaborate trail construction, surfaces, amenities or other features appropriate to a park-like setting or community connectivity function. The proposed revisions also note that, "the Riverside County Regional Park and Open Space District has prepared and adopted a Trails Development Standards Policy Manual, which is anticipated to be used in all trails planning, construction and maintenance activities." Accordingly, GPA No. 960 proposes to revise the existing "regional trail" standard to include two trail sub-types, as follows and as shown in Figure 4.16.4 (New Trail and Bikeway Cross-Sections).

Regional Urban and Rural Trails: This trail type is intended primarily to connect communities, parks and open space areas. They are to feature unpaved, soft surfaces and generally be 10-12 feet wide within 20-foot easements (though width may vary). These trails would typically be maintained by the Riverside County Regional Park and Open Space District, the Transportation Department through a Lighting and Landscape Maintenance District or by other entities subject to approval by the County of Riverside.

Regional Open Space Trails: This trail type is intended for both open space areas associated with private developments and for public and quasi-public open space areas. The key emphasis of this trail type is on minimizing the effect of human usage on the landscape and the need for trail maintenance (and the associated disturbances). These trails generally already exist, although some new trails may be built. Typically, the Riverside County Regional Park and Open Space District or the public or quasi-public entity owning the open space containing the trails would be responsible for their maintenance. Alternatively, one of these agencies would maintain them under agreement with the landowner.

Other, more minor changes made to trail standards in this section include right-of-way widths for community trails and expansion of the definition of "non-county public land trails" to include trails on other public and quasi-public lands besides National Forests and BLM lands. Wording was also added to acknowledge the role individual area design guidelines play in local trail planning.

2. Revisions to County Bikeway Standards

Text was added and policies updated to reflect Riverside County's plans for bikeways and other routes suitable for bicycle use. The standards more clearly specify when grade separation is needed between bikes and cars, as well as ensuring adequate separation between pedestrians and bikes, horses, golf carts, etc., to accommodate the various non-vehicular transportation modes used within these routes. In addition to revisions to Class I and II bikeways, a third type, Class II bikeways, is proposed to "provide continuity within the bikeways systems, usually by connecting discontinuous segments of Class I and Class II bikeways." As "bike routes" this class of bikeway would be marked by signage, but not marked on pavement or by grade separation.

3. Revisions to Trails Mapping

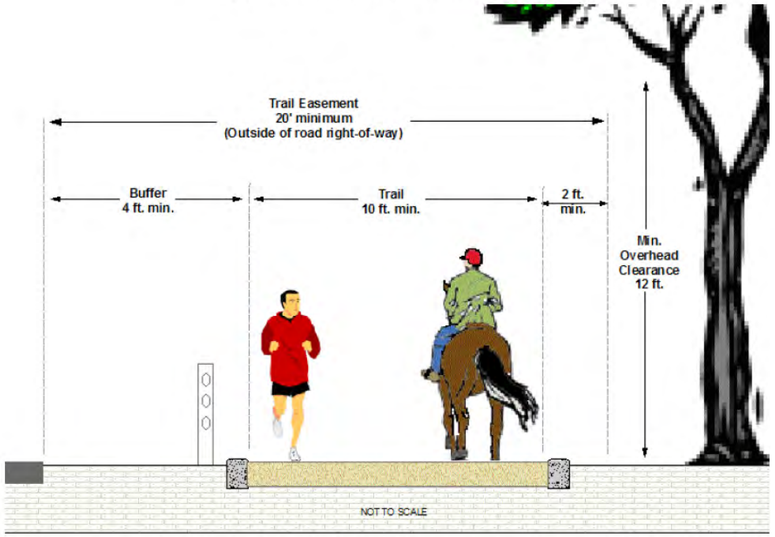
As part of GPA No. 960, Figure C-7, Bikeways and Trails Plan, was updated to include the new trails plan. This master map provides a countywide overview of the trails system. See Figure 4.16.2. To reflect these revisions, the corresponding trails and bikeways exhibits for each Area Plan were also updated. Also see Figure 4.16.4 for the changes made to the trail cross-sections in the General Plan.

B. Analysis of GPA No. 960 Effects on Parks and Recreation

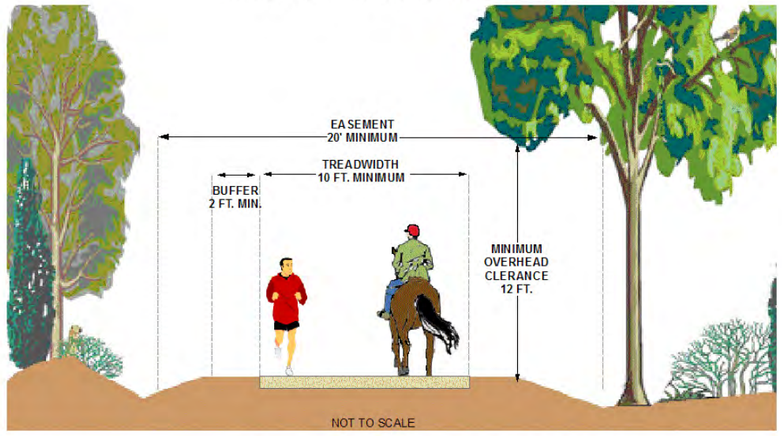
The General Plan is concerned mainly with the physical build out of Riverside County; many of the changes associated with GPA No. 960 would affect planned land usage. The proposed project's update to the General Plan includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in areas throughout Riverside County. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas; all of which would require adequate park and recreation services to ensure compliance with state and county regulations.

Table 4.16-C (Theoretical Parkland Needs With and Without the Project), below, provides a summary of the theoretical needs for park and recreation facilities within the county according to the theoretical estimate of need associated with existing land uses, as well as that for build out of the known spatial components of GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). The table shows all three separate scenarios.

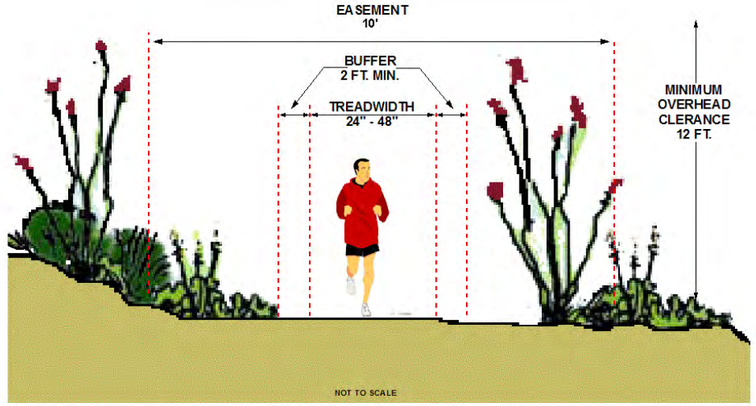
It should be noted that the following projections are based on the assumption that all of the changes proposed under GPA No. 960 actually result in future development and fully build out, that is, the theoretical, worst-case scenario that likely over-states the actual development potential in the real world. The actual future development of the individual parcels and areas affected by GPA No. 960 proposals are subject to the discretion of many hundreds to thousands of individual property owners, including both private individuals, business entities and even various public agencies and other entities. The County of Riverside has little to no control over the decision to propose development (new or re-developed) on a given site although the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County. Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply (i.e., existing home inventory) and even infrastructure availability (water supply, electricity, etc.).



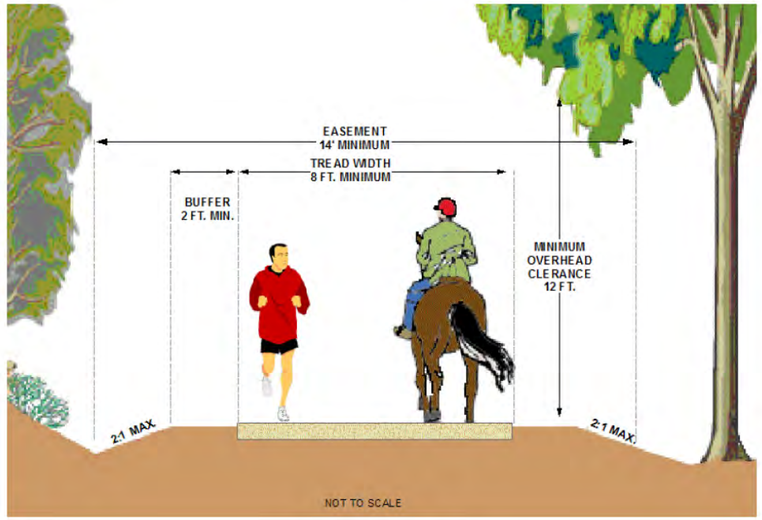
REGIONAL TRAILS – IN URBAN AREAS



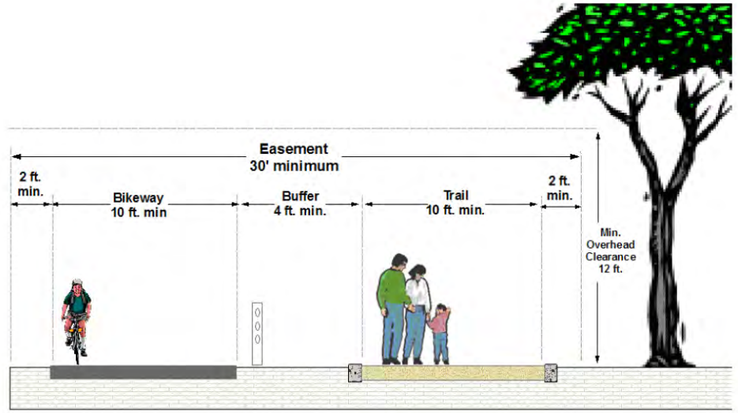
REGIONAL TRAILS – IN RURAL AREAS



REGIONAL TRAILS – IN OPEN-SPACE AREAS

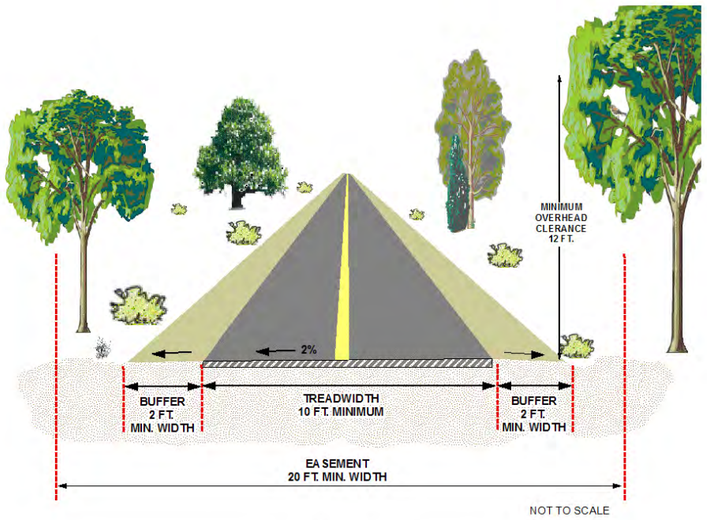


COMMUNITY TRAIL



NOT TO SCALE

CLASS I BIKEWAY/REGIONAL TRAIL – URBAN AREAS



CLASS I BIKEWAY

Data Source: Riverside County Transportation (2012); Riv.Co. Gen.Plan Figure C-8 (2013)

Figure 4.16.4

December 16, 2013

Miles
0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

PROPOSED TRAIL TYPE DETAILS

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For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on park, trail and other recreational needs cannot be delineated at present as they are location-dependent. For the sake of comparison, however, Table 4.16-C shows the theoretical park and recreation needs at build out for both the current General Plan and the General Plan as it would be if amended pursuant to proposed GPA No. 960.

Table 4.16-C summarizes projected theoretical needs for park acreage, as an indicator of the need for recreational opportunities and facilities, for three scenarios. Again, these calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. The first scenario shows demand associated with the existing (baseline) level of development currently estimated to be present on the portions of Riverside County directly affected by proposed land use-related changes as compared to full build out of the same areas as permitted under the updated General Plan (e.g., pursuant to the changes proposed in GPA No. 960).

Because much of the area addressed by GPA No. 960 includes regions for which future development potential is being eliminated (e.g., deletion of Rural Village Study Areas), the first scenario includes many areas where the build out scenario under the updated General Plan is the same as that which would occur under the existing (current General Plan's) mapped LUDs. As such, these areas do not represent new areas of growth attributable to the project, GPA No. 960, but rather simply reflect the anticipated build out of the Riverside County General Plan that would occur with or without the project.

Thus, in order to focus on the areas where the proposed project would actually result in new development potential (i.e., potential impacts), and hence population increases or shifts, a second scenario was developed for just the areas proposed for a change that would result in a future population increase.

Lastly, the third scenario included in the table shows a "plan-to-plan" comparison between the build out conditions of the General Plan as it currently exists and then as it would be if GPA No. 960 were approved and fully implemented. This scenario demonstrates the relative effects of the project on long-range planning, rather than environmental impacts per se, and is provided for informational purposes and to allow comparison between build out outcomes.

Table 4.16-C: Theoretical Parkland Needs With and Without the Project

Service Item	Generation Factors[1]	Existing Condition[2] (No Project)	Revised Condition (With Project)	Difference
Scenario 1: Existing Conditions / Updated General Plan Build out, Full Project Spatial Area[3]				
	Population[1]	16,520 persons	46,370 persons	+ 29,840 people
Quimby Standard[4]	3.0 acres per 1,000 people	49.6 acres	139.1 acres	+ 89.5 acres
Scenario 2: Existing Conditions / Updated General Plan Build out, Areas of New Development Potential Only[5]				
	Population[1]	6,590 persons	19,610 persons	+ 13,020 people
Quimby Standard[4]	3.0 acres per 1,000 people	19.8 acres	58.8 acres	+ 39.0 acres
Scenario 3: Build out of Current General Plan / Updated (per GPA No. 960) General Plan, Countywide[6]				
	Population[7]	1,736,700 persons	1,599,000 persons	- 137,800 people
Quimby Standard[4]	3.0 acres per 1,000 people	5,210 acres	4,800 acres	- 410 acres

Footnotes:

1. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10 for population in scenarios 1 and 2, and nearest 100 for everything else.
2. Existing condition parkland acreages represent the countywide totals considered appropriate for the given population value; they do not represent actual acreages present.

3. Theoretical population estimated for the land uses associated with the 111,440-acre area of known spatial project changes. Existing condition is the current uses of land within these areas. Revised condition is the build out (development) of the same areas pursuant to the General Plan as updated per GPA No. 960.
4. As reflected in Section 10.35 of Riverside County Ordinance No. 460.
5. Encompasses just the 10,690 acres proposed for new or increased development intensity or density under GPA No. 960. Eliminates growth effects from areas that would develop per the existing General Plan, isolating the effects of the proposed project. Existing condition is the current uses of land within the limited area. Revised condition is the build out of the same area per the General Plan as updated per GPA No. 960.
6. Existing condition is the build out of unincorporated Riverside County pursuant to the existing (2008) General Plan. Revised condition is build out of the same pursuant to the General Plan as updated by GPA No. 960.
7. Population data provided by Riverside County Center for Demographic Research, 2010.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Parkland standards from Section 10.35 of Riverside County Ordinance No. 460.

In regards to the planning, siting and development of new parks and other recreational facilities, it should be remembered that all such decisions are made by the applicable park and recreation district or other management entity. In some cases, such development is instigated solely by the entity. In most cases, however, such improvements are associated with new development projects undertaken by private developers. In such cases, the park and recreation entity typically reviews and approves proposals made by the developer. The entity's master plan is used to guide such development decisions. Nevertheless, all such future actions would require the appropriate level of environmental analysis and review, as warranted.

When built out pursuant to the existing (2008) General Plan, as shown in Table 4.16-C, Riverside County's population as a whole would require roughly 5,200 acres of parkland to serve its recreational needs. Under the updated General Plan, amended per GPA No. 960, this build out total would decrease roughly 8% to 4,800 acres because of the reduced population capacity associated with the proposed revisions.

Thus, on a comparative basis the proposed project would result in fewer environmental impacts due to the reduced need for park and recreational facilities. Such a reduced need would be reflected in any of several ways, including through a reduction in the capacity needed within existing parks and recreational facilities, by delaying the need for construction of new parks or, by reducing the size of new parks constructed.

In terms of future development, however, as indicated in the table under scenario one, future development accommodated by the project would introduce a total of just under 30,000 new residents to Riverside County. These residents would trigger the need for a total of approximately 90 acres of new parklands. This total represents demand across Riverside County, however. The actual increases would be spread throughout the 19 Area Plans of unincorporated Riverside County, plus the remainder area of eastern desert not in an Area Plan. As such, the adverse effects on any single area would be small to negligible. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

In terms of actual development, however, as indicated in the first scenario in Table 4.16-C, the existing theoretical population of Riverside County within the lands potentially affected by the project requires roughly 50 acres of parklands. These needs are currently met by the roughly 22,500 acres of parks and recreational facilities within Riverside County that are operated and managed by the various park and recreation districts and other entities located throughout Riverside County (inclusive of cities). Build out of the same area pursuant to the updated General Plan would result in the need for just under 90 acres of additional parklands. Much of this growth, however, is already planned for in the existing General Plan and was analyzed under EIR No. 441, which was certified for the 2003 RCIP General Plan.

Scenario two of Table 4.16-C isolates just the areas of growth associated with GPA No. 960 that would potentially be greater than that originally planned under the existing General Plan. Once areas planned merely for growth according to the existing General Plan are removed, the resultant scenario indicates that the future new development potential arising from GPA No. 960 would result in a population capacity of roughly 13,000

additional people over existing conditions. To serve this population, an additional 40 acres of parkland would be needed overall; roughly two 20-acre community parks or four 10-acre neighborhood parks, for example. To determine where in the county these new parks would be needed, the same data was broken down by region (Area Plan).

The regional analysis indicated that approximately one new 12-acre park would be needed for the area within the Elsinore Area Plan and one new 8-acre park within the Palo Verde Valley Area Plan. Smaller amounts of parkland would be needed for three other regions: Jurupa Area Plan (6 acres), Mead Area Plan (5 acres) and Western Coachella Valley Area Plan (4 acres). Increases of less than 1 acre would also occur for the San Jacinto Valley, Southwest and Temescal Canyon Area Plans. The increased needs of the Elsinore Area Plan region as a result of GPA No. 960 would be due primarily to future development of the proposed Meadowbrook and Good Hope Rural Village Land Use Overlays. The LUD changes associated with achieving ALUP consistency around the Blythe Airport would increase park demands within the Palo Verde Valley Area Plan. The remaining increases would result from the various Riverside County-initiated LUD changes proposed under GPA No. 960, plus the LUDs being adjusted within the Jurupa Area Plan to ensure consistency with the Flabob and Riverside Municipal Airport ALUPs.

In terms of General Plan changes, the project would only incrementally affect most of Riverside County's Area Plans and regions in amounts not large enough to trigger the need for a full additional park in most areas. Not surprisingly, the increased demand for parks shows up most clearly in the areas being planned for urbanization – the Meadowbrook and Good Hope Rural Village Overlays in particular. In terms of environmental effects, future development accommodated by GPA No. 960 would contribute incrementally to the need for additional parks and recreational opportunities throughout Riverside County. The environmental impacts and mitigation implications of these increases are discussed in the section that follows below.

In regards to trails, the revisions proposed are expected to improve trail planning and implementation by providing trail standards that more accurately reflect and address the needs of the various types of development that will occur in Riverside County over time. This will enable trails, pathways and bikeways to continue to be constructed as required to provide connectivity both within new development and between new and existing uses, as well as connections to the existing and proposed trail system.

Future development accommodated by the project would increase demand for additional trails and bikeways within new development and also increase the use of existing trails and bikeways, particularly those that connect new uses to existing destinations (schools, bus stops, retail areas, etc.).

4.16.6 Parks and Recreation - Impacts and Mitigation

A. Would the project cause growth that increases the use of existing neighborhood parks, regional parks or other recreational facilities resulting in or accelerating substantial physical deterioration of the facility?

Impact 4.16.A – Increase the Use of Existing Parks or Other Recreational Facilities Resulting in Their Substantial Physical Deterioration: Future development accommodated by GPA No. 960 changes would result in population growth in certain areas within Riverside County, incrementally increasing the number of residents using existing neighborhood and regional parks, as well as other recreational facilities, including trails and bikeways, in localized areas. This use would contribute slightly, but not significantly, to the wear and tear on

existing facilities. Moreover, compliance with existing state and county regulatory programs and General Plan policies would further ensure that project-related effects on existing parks or recreation facilities are less than significant.

1. Analysis of Impact 4.16.A

The changes to General Plan land use plans and policies proposed in GPA No. 960 would result in a reduction of expected residential capacity at build out, thus accommodating a smaller county population than previously forecasted (scenario three in Table 4.16-C). Nevertheless, some components of GPA No. 960 would generate an incremental net increase in park needs. Specifically, this encompasses the various Riverside County-initiated land use designation changes, as well as those associated with the Blythe, Riverside Municipal and Flabob Airports; the Good Hope and Meadowbrook Rural Village Overlays; revisions to accommodate fish farms around the Salton Sea; and, lastly, the revisions to the Lake Elsinore Environs Policy Area related to Lakeland Village. See EIR Section 3.0 (Project Description) for further details.

The growth generated by each project component identified in Table 4.16-C (scenarios one and two) would increase the number of people utilizing existing recreational resources and necessitate the provision of new facilities to maintain adequate levels of service, at minimum those set forth under the Quimby Act. However, the incremental increase of 13,000 people associated with the project would be spread over the entire county in various amounts and occur over roughly 50 years. As such, this increase is an insignificant increment (0.8%) of the total expected county growth over the same period.

2. Regulatory Compliance for Impact 4.16.A

As detailed and explained below, compliance with existing regulations and General Plan policies are sufficient to ensure that impacts associated with increased use and potential deterioration of park and recreation facilities, including trails and bikeways, due to growth as a result of GPA No. 960 would be less than significant.

a. Compliance with State and County Regulations

Compliance with the following state and Riverside County regulations would prevent significant impacts associated with increased use and potential deterioration of park and recreation facilities, including trails and bikeways.

Quimby Act: The Quimby Act (CGC Section 66477) allows local jurisdictions, through an ordinance, to require developers to dedicate land, pay fees or a combination of both for park and recreational purposes as a condition of approval of tract and parcel maps. The land, fees or combination thereof would be used for the development of new, or rehabilitation of existing, park and recreation facilities to serve the associated population. Implementation of Quimby Act standards would provide for additional park and recreational resources throughout the county, which in turn would lessen impacts related to overuse and overcrowding at existing facilities in the affected region.

Ordinance No. 460 - Regulating the Division of Land: In regards to parks and recreation, Section 10.35 of Ordinance No. 460 details the methods by which Quimby Act compliance is achieved (i.e., land dedication, in-lieu fee payment or combination of both) for residential projects approved within unincorporated Riverside County. The ordinance requires developers to dedicate, at a minimum, 3 acres of land for each 1,000 persons that may reside within Riverside County. In lieu of dedicating land, a developer may choose to pay fees, at an amount determined by the County of Riverside, for park and recreational purposes in order to satisfy Ordinance No. 460

and Quimby Act regulations. The fee and/or land dedications or improvements can only be used to provide neighborhood and community parks that serve the proposed development. Implementation of Ordinance No. 460 ensures that an adequate amount of park and recreational facilities are available to the residents of Riverside County.

Ordinance No. 328 - Rules and Regulations for County Parks and Open Space Areas: This ordinance prescribes rules and regulations for parks and open space areas within Riverside County to maintain their integrity and effective use for recreational purposes. By regulating those uses allowed in parks and open space areas, regulating the circulation of vehicles throughout such areas and prohibiting the destruction of landscaped areas, the regulations found in Ordinance No. 328 would effectively reduce the potential wear and tear that facilities may experience due to population growth accommodated by to GPA No. 960, thereby helping reduce potential adverse impacts to existing recreational resources.

b. Compliance with Existing Riverside County General Plan Policies

The following existing policies of the Riverside County General Plan would further reduce the insignificant impacts associated with increased use and potential deterioration of park and recreation. See Section 4.16.3.C for the full text of each of these policies.

Policy OS 20.3: Discourages the encroachment of public or private non-recreational uses on dedicated recreational lands, thereby preserving existing recreational resources.

Policies OS 20.5 and 20.6: Requires recreational facilities be developed (or funded) concurrently with other development in a given area. Developing recreational facilities in conjunction with development proposals would help ensure that additional populations do not have excessive impacts on existing neighborhood and regional parks or recreational facilities.

c. Compliance with Proposed New or Revised Riverside County General Plan Policies

The following revised policies of the Riverside County General Plan will prevent significant impacts associated with increased use and potential deterioration of park and recreation facilities. See Section 4.16.3.C for full text of each of these policies.

Policy LU 25.2: Provides for a balanced distribution of recreational amenities for all land uses so as to not over burden existing recreational resources and reduce potential impacts to those existing resources.

3. Finding on Significance of Impact 4.16.A

With the implementation of, and compliance with, the above listed regulations, Riverside County ordinances and General Plan policies, potential adverse impacts to existing parks and recreational facilities, including trails and bikeways, would be limited to insignificant levels. As such, the growth associated with the project would not increase population levels in a manner that would cause significant impacts on existing parks or recreational facilities; nor would it result in or accelerate substantial physical deterioration of facilities.

B. Would the project trigger growth that results in the need for new or physically altered park or recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact 4.16.B – Trigger Growth Effects Resulting in the Need for Additional Parks or Recreational Facilities: Future development accommodated by GPA No. 960 changes would result in population growth in certain areas within the county, triggering the need for expansion of existing or development of new recreational facilities and opportunities. This need, however, would be incrementally small (less than 1%) of the overall growth expected in the county over the next 50 years and would be spread throughout Riverside County for the most part. As such, impacts would be less than significant. In a few areas, population increases would be large enough locally to potentially trigger the need for a new park, trail or other recreational facility. For such locations, compliance with existing state and Riverside County regulatory programs (the Quimby Act, specifically), as well as existing General Plan policies, would ensure project-related affects to parks, trails and other recreation would be less than significant.

1. Analysis of Impact 4.16.B

As discussed in Impact 4.16.A above, development activities accommodated by GPA No. 960 would facilitate additional population growth within the county compared to existing conditions. This anticipated growth would necessitate the provision of new park and recreational facilities to maintain adequate levels of service, at minimum those set forth under the Quimby Act and Section 10.25 of Riverside County Ordinance No. 460. As indicated in Table 4.16-C, the land use changes associated with GPA No. 960 would trigger the need for approximately 40 acres of additional parklands. Additional trails and bikeways would also be needed to provide for recreation and non-motorized transportation connectivity both within new developments (internally) and externally between other uses offsite, as well as to the existing trails network per General Plan Figure C-7.

The growth generated by each project component identified in Table 4.16-C (scenarios one and two) would increase the number of people utilizing existing recreational resources and necessitate the provision of new facilities to maintain adequate levels of service, at minimum those set forth under the Quimby Act. However, the incremental increase of 13,000 people associated with the project would be spread over the entire county in various amounts and occur over roughly 50 years. As such, this increase is an insignificant increment (0.8%) of the total expected county growth over the same period. This growth level is in line with that expected in Riverisde County over time and it is anticipated that it would be readily accommodated by the policies and plans of the General Plan. See Section 5.3 for further details on growth effects specifically.

GPA No. 960 does not alter or affect the existing park service ratios for Riverside County, including those that would apply to any future development accommodated by GPA No. 960. Existing fiscal plans for Riverside County, particularly Quimby Act requirements for provision of a minimum level of park acreage or payment of equivalent in-lieu fees, would continue to provide or fund adequate new facilities to support new areas of growth within Riverside County. Through this means, any population growth associated with new development from the project would be reduced to less than significant levels. As such, the potential effects of project-related population growth on the need for new or altered recreation facilities would be less than significant.

2. Regulatory Compliance for Impact 4.16.B

As discussed under Impact 4.16.A, the State of California Quimby Act, Ordinance No. 328 and Ordinance No. 460, as well as the various General Plan policies detailed for Impact 4.16.A would reduce the adverse impacts of

potential growth on the need for additional recreation facilities as well. Through implementation of these regulations and policies, the County of Riverside would be able to address the potential funding and open space needs triggered by project-related growth as it occurs. Such regulatory measures and General Plan policies would be sufficient to ensure that impacts resulting in the need for additional recreational facilities as a result of GPA No. 960 would be less than significant.

3. Finding on Significance of Impact 4.16.B

With the implementation of the above-listed existing regulations and General Plan policies, particularly Section 10.35 of County Ordinance No. 460, GPA No. 960 would have a less than significant impact on the need for new or physically altered park, trails, bikeways or other recreation facilities.

C. Would the project trigger the need for construction or expansion of recreational facilities or uses that would have a significant adverse physical effect on the environment due to their provision?

Impact 4.16.C – Result in Significant Adverse Environmental Effects Due to the Need for Additional Parks or Recreational Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in the county, resulting in a small overall population increase that would contribute incrementally to the need for an additional parks and recreational uses (including trails and bikeways) within Riverside County. Where these needs are localized due to specific policy and land use changes, increased populations could result in the need for an additional park or other recreational use, the construction or expansion of which could have an adverse physical effect on the environment. However, compliance with existing regulations, County ordinances, mitigation measures from EIR No. 441 and General Plan policies, as outlined throughout this EIR, would be sufficient to ensure that resultant environmental impacts are less than significant.

1. Analysis of Impact 4.16.C

As described above, development consistent with GPA No. 960 would necessitate the provision of new recreational facilities and the expansion of existing facilities to accommodate expected population growth for those areas featuring additional residential populations. As outlined in the prior section, GPA No. 960 changes would disproportionately affect population growth for the Elsinore, Palo Verde Valley, Jurupa, Mead and Western Coachella Valley Area Plan regions. As such, it is possible that the Elsinore and Palo Verde Valley areas would each need an additional community park (of 12 acres and 8 acres, respectively). The remaining areas would potentially need an additional neighborhood or smaller park (of 6 acres, 5 acres and 4 acres, respectively). All of these areas would also need walkways, trails and bikeways, as appropriate, to provide recreational opportunities as well as connectivity for non-motorized transportation within new sites and externally to the existing trails network, as well as to existing and future new uses offsite (e.g., bus stops, schools, retail, etc.).

To ensure adequate parks and recreational uses are provided along with new residential development that introduces additional populations, the Riverside County Regional Parks and Open Space Department and the Riverside County Planning Department enforce the Quimby Act standards enacted under Riverside County Ordinance No. 460 as they review development and building plans. The County of Riverside requires development applicants to provide specific levels of new recreational development (parks, recreational areas, etc.) and/or pay a specific amount of in-lieu fees that would then be used by the applicable public park and recreation entity to construct new or expanded facilities. Trail requirements and offsite improvement contributions are also handled similarly (through mandatory Conditions of Approval).

In the case of development-level applications (particularly, specific plans and specific plan amendments), parks and recreational facilities may be sited, planned and designed as part of the overall project. In other cases, such work may be performed separately as unrelated actions (as part of the implementation of a Parks Master Plan, for example). In either case, full environmental analysis, review and the formulation of all necessary mitigation would be required.

Where development of new or expanded facilities would occur on previously vacant land, the potential exists for construction to impact the physical environment. In particular, these physical impacts may include loss of open space and agricultural lands, loss of natural biological habitat and effects to plants and animals on a given site, the potential for effects to known or previously unknown cultural resources, as well as increasing use of various resources, such as water, energy, law enforcement patrols, etc. Similar impacts and related mitigation are addressed generally in their respective chapters of EIR No. 441, which was certified in conjunction with the 2003 RCIP General Plan. This EIR, EIR No. 521, also provides additional mitigation measures when deemed necessary to mitigate a potentially significant environmental impact.

2. Regulatory Compliance for Impact 4.16.C

Compliance with the following regulations, policies and existing mitigation measures from prior EIR No. 441 would reduce or minimize impacts associated with the need for new or expanded parks, trails or other recreational facilities.

a. Compliance With Federal, State and County Regulations

The State of California and Riverside County regulations, programs and ordinances outlined for Impacts 4.16.A and 4.16.B, as well as throughout both this EIR and EIR No. 441, which was certified for the 2003 RCIP General Plan, would serve to ensure that the roughly 40 acres of additional parks and recreational uses necessitated by project-related population growth would be developed without significant environmental impacts. Given the small areas involved (12 acres maximum) and the large inventory of vacant, undeveloped land available within Riverside County, it is reasonable to assume that significant physical impacts can be avoided through careful site selection, in many cases. For the remaining cases, a combination of site selection, appropriate design, construction and management measures, as well as implementation of the various mitigation measures associated with EIR No. 441 and this EIR would be sufficient to ensure no substantial impacts result from the construction of necessary new or physically altered park or recreational facilities to serve the project.

b. Compliance with Existing General Plan Policies

As outlined previously for the prior two impact discussions, a variety of existing policies of the Riverside County General Plan would help prevent significant impacts resulting from the construction or expansion of recreational facilities or uses. These include Policies OS 20.5 and 20.6, C 4.9, 16.1 and 17.2, and LU 25.1-25.3. See Section 4.16.3.C for the full text of each of these.

Policy LU 9.2: Requires new development, including any recreational facility construction, to comply with the Multipurpose Open Space Element of the General Plan as well as federal and state regulations, such as CEQA, NEPA, the Clean Air Act and the Clean Water Act, in order to protect environmental resources.

c. Compliance with Proposed New or Revised County General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would prevent significant impacts resulting from the construction or expansion of recreational facilities or uses. Policies LU 25.2, 25.4, C 15.1, 15.2, 15.3, 15.4, 16.2, 16.7, 17.3, 18.1 and 18.2 provide mitigation for impacts associated with environmental effects of recreational facility construction. See Section 4.16.3.C for the full text of each of these policies.

3. Finding on Significance for Impact 4.16.C

With the implementation of the above-listed General Plan policies, ordinances and regulations, as well as the existing mitigation associated with EIR No. 441 in general, GPA No. 960 would have less than significant impacts associated with the need for construction or expansion of new or physically altered parks or recreational facilities.

4.16.7 Parks and Recreation – Level of Significance After Mitigation

Implementation of, and compliance with, the above regulations and General Plan policies would ensure that significant impacts to park and recreation resources, including trails and bikeways, are either avoided or minimized to less than significant levels. Compliance with existing State of California and County of Riverside laws and regulatory compliance measures would ensure that parks and recreation facilities are developed concurrently with other development in a given area and in accordance with the minimum amount of acres prescribed by both the Quimby Act and County Ordinance No. 460. Compliance with existing laws, regulatory programs and policies would minimize impacts to existing parks and recreation facilities and conflicts associated with the expansion of existing or new facilities. Together these measures ensure that any significant adverse impacts to parks, trails, bikeways and other recreational resources resulting from future development accommodated by GPA No. 960 would be less than significant.

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County of Riverside

Volume 1: Draft Program EIR No. 521

State Clearinghouse No. 2009041065 • Part 2 of 2

RIVERSIDE COUNTY
PLANNING DEPARTMENT

February 2015

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RIVERSIDE COUNTY GENERAL PLAN UPDATE PROJECT

General Plan Amendment No. 960

ENVIRONMENTAL IMPACT REPORT No. 521

VOLUME 1, PART 2 of 2: DRAFT EIR No. 521

(SCH No. 2009041065)

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Section 4.17

Public Facilities

Section 4.17 Public Facilities

4.17.1 Introduction

This section assesses the potential impacts associated with public facilities that could occur as a result of future development accommodated by the proposed project, General Plan Amendment No. 960 (GPA No. 960). The emphasis of this section is on the various public services and facilities provided within unincorporated Riverside County, including fire protection, law enforcement protection by the Riverside County Sheriff's Department, solid waste management, schools, libraries and medical facilities. Wastewater (sanitary sewer) is discussed in Section 4.19 (Water Resources) along with other water supply issues; parks are addressed in Section 4.16 (Parks and Recreation).

This EIR section examines the effects of build out of the General Plan on public services and assesses whether any adverse environmental effects would result from the need to provide additional public services or facilities as a result of the project's revisions to the General Plan. This chapter also includes analysis of changes to baseline conditions that would result from future development accommodated by the project. The Riverside County General Plan does not include a section on public services, as it is not one of the seven general plan elements (land use, circulation, housing, conservation, noise, open space and safety) required pursuant to California Government Code (CGC) Section 65302. However, public services are addressed directly or indirectly in a variety of locations in the General Plan.

A. Background on Data Sources and Methods

The three most prominent characteristics of Riverside County affecting the delivery of services are its size, diverse topography and land use patterns. The focus of the land use patterns and development within Riverside County center mainly around Riverside County's 24 cities. These cities not only provide housing for citizens but also establish a pattern that relates directly to the location of citizens throughout Riverside County, incorporated as well as unincorporated, and their need for public services and facilities. The importance of public service availability cannot be overstated, ~~for~~ *as this* determines ~~in a fundamental way~~ where and when urban ~~intensity~~ development can occur. For example, without a safe and efficient municipal water system, land cannot be transformed from open or rural to a more *urban* ~~closely knit~~ development pattern, in which someone other than the end water user must be responsible for obtaining and distributing ~~the~~ water ~~that is used~~. Electricity and telephony are similarly important. In addition, public facility providers must closely monitor existing service capacities and future projections to ensure that capacity continues to be available or added as an area grows.

For most public services, this future growth can be used to project future demand. Future demand is used by providers to establish long-range plans to ensure additional capacity is added at pace with, or in advance of, developing need. An example of this would be a school district beginning their planning for construction for a

new high school now to eventually accommodate the increased number of children that are entering kindergarten today and who will need the high school space in 10 years.

Accordingly, public facility demands are most often determined on the basis of future demographic and/or socioeconomic projections, which can include population, dwelling units (residences) and employment sources (jobs), as well as growth rate predictions. Providers typically have usage factors they employ to calculate service needs based off these projections. For example, a water district may have water usage factors for a variety of land uses (such as 200 gallons per day for single-family homes and 180 gallons per day for multi-family homes).

As a result, the future demand on a public facility can be modeled (estimated) for a variety of future scenarios, such as the "build out scenario," which is a theoretical point in time when all of the land uses planned would have been built. As detailed in Section 4.1 (Environmental Assumptions and Methods), the theoretical build out point used in this EIR for the existing General Plan and GPA No. 960 is approximately the year 2060. It should be noted, however, that build out represents a *theoretical* point in time, fixed in order to allow comparison between two differing outcomes. The ultimate outcome, that is, what actually gets built in the real world, is subject to many complex and varying factors over time. Hence, the theoretical approximation is more of a likely best (or worst) case scenario, rather than a precise acre-by-acre prediction. Also, these calculations also do not take into account any future annexations of unincorporated county areas into existing (or new) cities or public facility districts, which could lead to other agencies being responsible for provision of the public services. This is appropriate because doing so means the public service needs of the unincorporated county are, at worst, *over*-estimated so that, in an abundance of caution, mitigation needs are similarly overestimated.

Nevertheless, these theoretical build out projections are valuable because they provide a snapshot of how Riverside County *might* look if all of the land uses mapped in the existing (2008) General Plan were built as planned, and they enable a comparison of the possible outcome of the changes proposed by the project. In each of the subsections that follow, for each type of public facility, details are provided on how specific projections were developed, as well as the data sources and methods used.

B. Proposed Changes to the General Plan Relating to Public Services

As part of the project review process, land use and demographic data in the General Plan were updated and policies reviewed and revised where necessary. The existing General Plan addresses public facilities mainly in the Land Use (LU) Element. GPA No. 960 includes policies related to coordinating public facilities with future land use development. Texts of relevant existing and revised or new General Plan policies are provided under the applicable topic herein. For parks and recreation updates, see Section 4.16 (Parks and Recreation).

The variety of LUD and policy area changes proposed, as per the descriptions in Section 3.0 (Project Description) of this EIR and associated Figure 3-1 (and corresponding maps within each Area Plan), may indirectly affect public facilities and services. Such changes would lead to either an increase or decrease in development potential (density or intensity). Introducing new people and structures into areas would increase the use of existing public services and add incrementally to the need for additional facilities and services as well.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies and others, as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (General Plan Figures C-7 and C-1, respectively, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements would be determined based on site assessment of opportunities

and constraints. Likewise, other infrastructure and utilities, such as power transmission lines, water and sewer lines, and such, are also developed based on the providing agency's existing and future levels of service and need assessments and forecasts; typically based on five-year capital improvement plans. Generally, however, such improvements are not proposed until either specific new developments or overall growth within an area triggers their need.

Accordingly, specific locations and timing of future infrastructure, including power and natural gas transmission lines, water and sewer lines and pumps, as well as roads, schools and other public services are not presently foreseeable beyond the master countywide level (as addressed previously in EIR No. 441). These improvements would require site-specific analyses and mitigation when proposed as part of (or to serve) future development as the General Plan builds out. As such, future impacts and mitigation can only be assessed programmatically pursuant to the performance standards outlined in this EIR, as well as EIR No. 441, with project-specific analysis and mitigation developed at the later individual project stage. Nevertheless, this section presents theoretical estimates for both existing conditions and build out conditions. See each of the individual subsections that follow for specifics.

4.17.2 Fire Protection Services

A. Fire Protection – Existing Environmental Setting

The County of Riverside contracts with the State of California (the California Department of Forestry and Fire Protection, also now known as "CalFire") for fire protection. Under CalFire "Riverside Operational Unit" management, the Riverside County Fire Department (RCFD) operates ~~95~~ *94* fire stations in 17 battalions with about 230 pieces of equipment. Fifty-one of these stations, as well as three stations operated directly by CalFire, are located in the unincorporated portion of Riverside County. See Table 4.17-A (Cities Served by the Riverside County Fire Department (CalFire)). In addition to all of unincorporated Riverside County, the CalFire Riverside Unit serves small portions of San Diego and Orange counties, and also operates 18 city fire departments and one community services district (CSD) fire department for the Rubidoux CSD. Combined, the Riverside Unit is one of the largest fire departments in the nation. The RCFD also responds to a number of cities and communities through mutual and automatic aid agreements and also provides dispatch under contract. See Table 4.17-B (CalFire Aid Agreements).

Within its service area, RCFD provides fire suppression, emergency medical, rescue and fire prevention services and is equipped to fight both urban and wildland emergency conditions. The State (CalFire) also has primary responsible responsibility for managing fires on lands designated "State Responsibility Areas" (SRAs). A variety of local fire agencies, for example city fire departments, have jurisdiction over "Local Responsibility Areas" (LRAs). And on federal lands, Federal Responsibility Areas (FRAs), federal agencies (BLM or U.S. Forest Service) are responsible. Within Riverside County, the CalFire Riverside Unit is responsible for 544,180 acres of SRA, plus 2,630 acres in San Diego County and 620 acres in Orange County. As the contract fire protection agency for various cities within Riverside County, CalFire is also responsible for 13,206 acres of LRA land within Riverside County. Other agencies, such as city fire departments, etc., are responsible for 572 acres of LRA. On federal lands (FRA) within Riverside County, the BLM is responsible for 52,650 acres and the U.S. Forest Service for 62,520 acres. For a full discussion on SRAs, LRAs, etc., see Section 4.13 (Hazardous Materials and Safety).

According to the CalFire Riverside Unit 2012 Strategic Fire Plan (page 9), State resources include 14 type 3 engines, one type 2 helicopter, two type 3 air tankers and three bulldozers. County resources include 81 type 1 engines, five type 2 engines, one bulldozer, water tenders, eight medic ambulances and two breathing supports.

Other equipment in the RCFD inventory includes: structural engines, rural engines, brush engines, telesquirts, trucks, paramedic units, a helicopter, hazardous materials unit, incident command units, water tenders, fire crew vehicles, mobile communications centers, breathing support units, lighting units, power supply units, fire dozers, mobile training vans and emergency feeding units.

CalFire also operates Ryan Air Attack Base (RAAB) out of the Hemet-Ryan Airport in the French Valley area. RAAB Air Attack A310 provides firefighting air support for CalFire using OV-10A aircraft for airborne command and control functions (e.g., for directing tanker and helicopter drops from the air). It also uses S-2T tankers for air drops of water and fire retardant. Lastly, it operates a UH-1H Super Huey helicopter out of RAAB for helitack (firefighting support, e.g., water and retardant drops) and the air rescue program (e.g., hoist rescue operations, medical evacuations, etc.).

Table 4.17-A: Cities Served by the Riverside County Fire Department (CalFire)

Western Riverside County		Eastern Riverside County
Banning	Menifee	Coachella
Beaumont	Norco	Desert Hot Springs
Calimesa	Moreno Valley	Indian Wells
Canyon Lake	Perris	Indio
Eastvale*	San Jacinto	La Quinta
Jurupa Valley*	Temecula	Palm Desert
Lake Elsinore	Wildomar	Rancho Mirage

* City incorporated after NOP issuance date.
Source: Riverside County GIS Dept., 2009. California Dept. of Forestry and Fire Protection, Strategic Fire Plan, 2012.

Table 4.17-B: CalFire Aid Agreements

Automatic Aid Agreements	Mutual Aid Agreements	Dispatch Agreements[1]
Cabazon Band of Mission Indians	California Rehabilitation Center (Norco)	Pechanga Fire Department
City of Corona (for HazMat)	Chuckawalla Valley State Prison Fire Dept.	Morongo Fire Department
City of Hemet	City of Corona (for HazMat)	Idyllwild Fire Protection Dist.
City of Murrieta	Colorado River Indian Reservation (MAP)[3]	
City of Palm Springs	Imperial Valley[2]	
City of Redlands[2]	La Paz County, Arizona (MAP)[2,3]	
Idyllwild Fire Protection District	March Air Reserve Base	
Morongo Band of Mission Indians	Niland Fire District [2]	
Orange County Fire Authority[2]	Riverside County (MAP)[3]	
Pechanga Band of Luiseño Mission Indians	San Bernardino County (MAP) [2,3]	

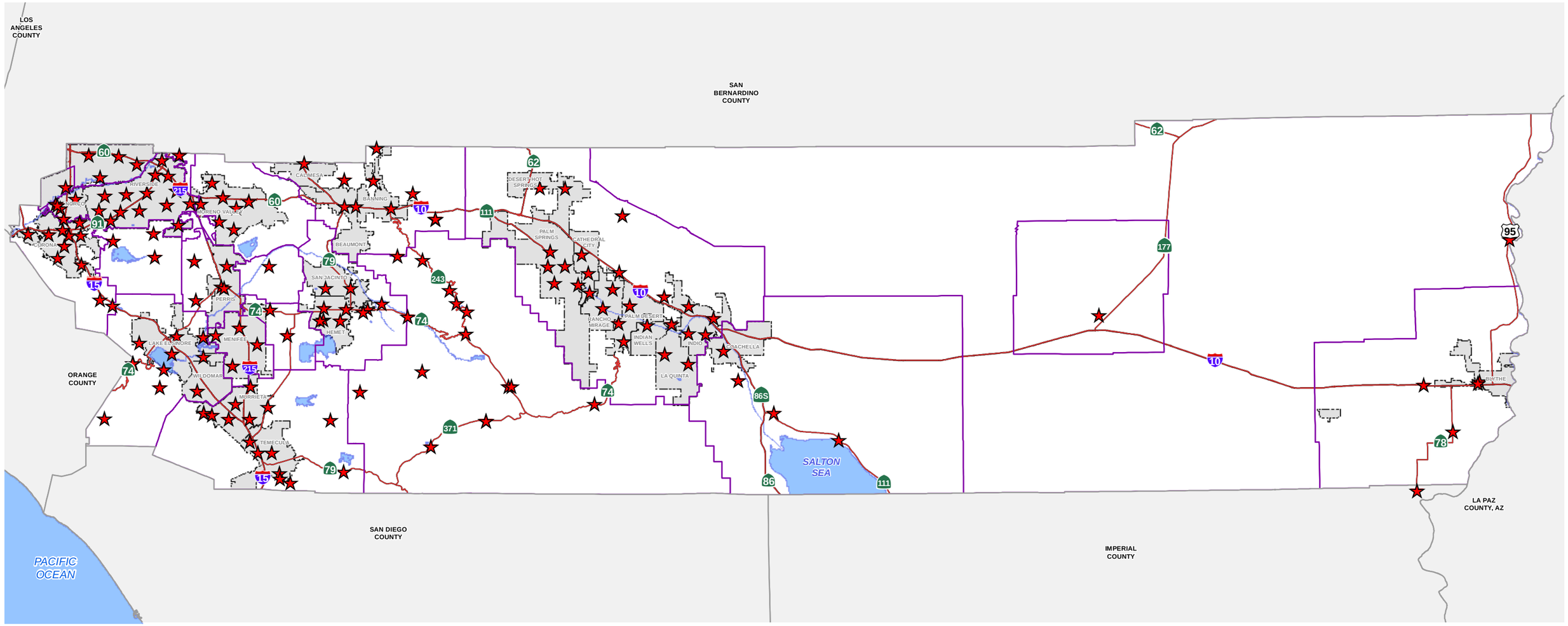
Footnotes:
1. Agencies under a cooperative agreement for dispatch and communications services.
2. Located outside of Riverside County.
3. Mutual Aid Pact (MAP) between these parties, dated July 19, 1989.

Source: California Dept. of Forestry and Fire Protection, Strategic Fire Plan, 2012, pages 9-10.

The RCFD is also the Operational Area Coordinator for the California Fire and Rescue Mutual Aid System for all fire service jurisdictions in the county (such as, municipal, tribal, state and federal – that is, National Forests). Upon receipt of a call for mutual aid through Riverside County's Emergency Command Center (ECC), Riverside County's mutual aid coordinator will determine whether a city or the County of Riverside will provide a response. The ECC is a combined Riverside County, State of California and local agency dispatch center responsible for alerting and handling incidents over a 7,200-square mile area. Staffing is a mix of paid State of California and County of Riverside dispatchers with volunteer call handling support.

The Riverside County Fire Department provides the following services:

- Structural and wildland fire response



Data Source: Riverside County (2010)

Fire Station Locations

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.17.1

December 16, 2013

Miles

0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

FIRE STATIONS

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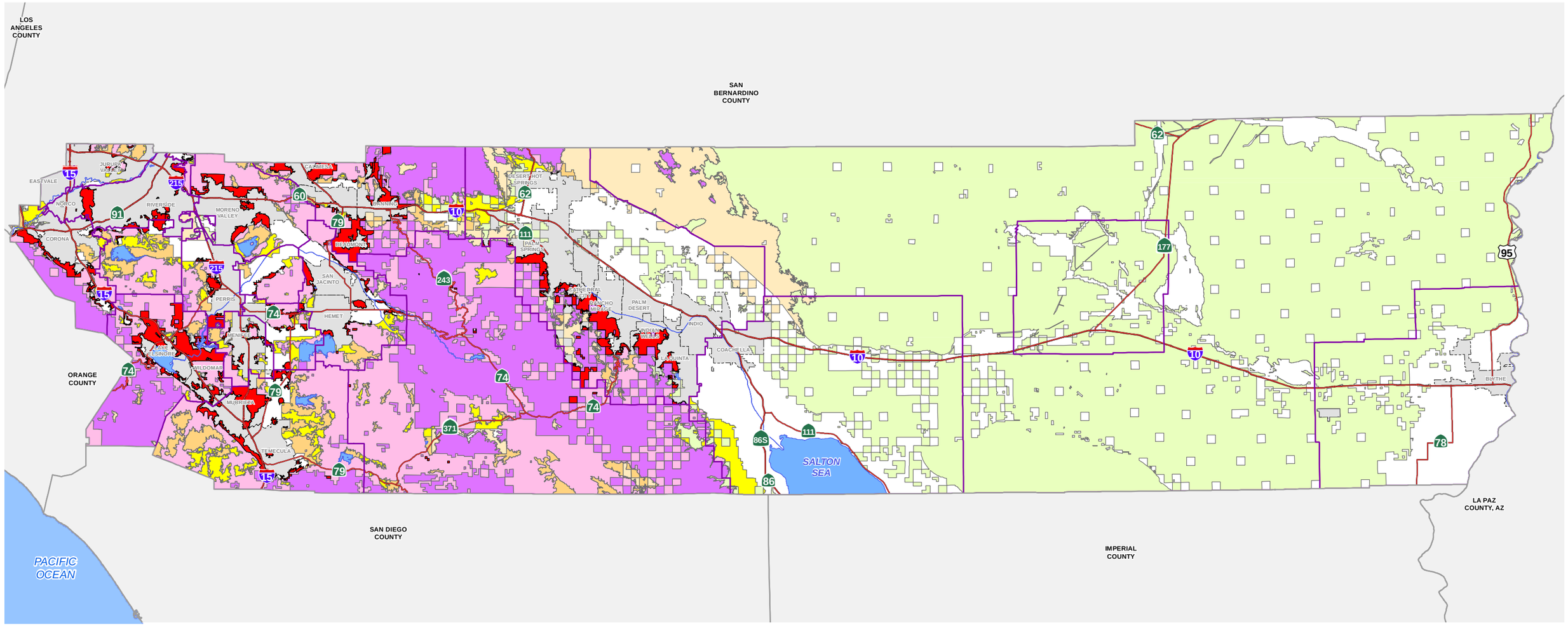

Data Source: California Department of Forestry and Fire Protection (CAL FIRE), (2010)

Fire Hazard Severity Zones (FHSZ)

Local Responsibility Areas	State Responsibility Areas	Federal Responsibility Areas	
Very High	Very High	Very High	Highways
	High	High	Area Plan Boundary
	Moderate	Moderate	City Boundary
			Waterbodies

Figure 4.17.2

December 16, 2013

Miles
0 10 20

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WILDLAND FIRE HAZARD SEVERITY ZONES

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- Weed abatement
- Ambulance response
- Swift water rescue
- Level 1 hazardous material team

The Riverside County Fire Department (RCFD) fire stations are ~~can be~~ staffed by ~~a mixture of~~ State (CalFire)~~, Riverside County (RCFD), contract city (if applicable) and volunteer~~ firefighters. Currently, RCFD Battalion Chief Tracy Hobday reports that each engine unit is staffed with three personnel. Depending on the service area (Riverside County is divided into six), the staffing configurations are either: fire captain, fire apparatus engineer and fire fighter or Company officer (fire captain or fire apparatus engineer) and two firefighters. RCFD engine companies are also advanced life support paramedic assessment units. All units are dispatched by the ECC and are part of the "Integrated Fire Protection System," under contract with the State of California. The fire stations serving Riverside County are identified in Table 4.17-B, below. According to the 2012 Strategic Fire Plan (page 9), during peak staffing, the Riverside Unit has 96 stations staffed with 1,150 CalFire career personnel, 240 Riverside County and OES personnel and 280 volunteer/reserve firefighters. CalFire also provides 11 battalion chiefs and 17 hand crews. County of Riverside resources include 30 battalion chiefs, two medical squads, eight truck companies and two hazmat units.

RCFD responsibilities include:

- Fire control – due to increasing population, RCFD is faced with a growing structural fire problem. Riverside County is one of the most active wildland fire counties in the state.
- Air attack program – CalFire and the U.S. Forest Service (USFS) operate a joint air tanker base at the Hemet/Ryan Airport. The base is statistically the most active in the nation and deploys one CalFire and two USFS air tankers. Two air coordination aircraft and one CalFire helicopter are also stationed at Ryan Air Attack Base.

According to data published by the County in its "Financial Highlights (Fiscal Year 2008-2009)," within Riverside County the Fire Department provided medical assistance on just over 91,700 calls, extinguished over 4,400 fires and provided nearly 18,500 other services, including standby response to bomb threats, electrical hazards, gas leak hazards, etc., public service assistance and false alarms.

The County of Riverside also provides fire protection planning and engineering, in which County fire protection specialists review plans for all new residential developments, commercial and industrial buildings proposed within unincorporated Riverside County and the contract cities. Requirements are established to provide a high degree of life safety and property protection. Common requirements include installation of fire hydrants, sprinkler systems, early warning fire detection systems and fire safety zones in remote areas. See Section 4.13 (Hazardous Materials and Safety) for more information on building standards related to fire protection. In addition, as disaster and recovery planning are key elements for emergency services, the Riverside County Emergency Services Division maintains two underground Emergency Operation Centers with communications for government use during major events.

In terms of station locations and response times, according to EIR No. 441, prepared for the 2003 adoption of the RCIP General Plan, an acceptable response time is generally defined as within five minutes for urban areas, ten minutes for suburban and rural community areas and twenty minutes for rural outlying areas.

Table 4.17-C: Fire Stations Serving Riverside County

Sta. #	Station Name	Location	City	Services / Agencies[1]
1	Perris	210 West San Jacinto Blvd.	Perris	PARA
2	Sunnymead	23770 Sunnymead Blvd.	Moreno Valley	PARA
3	Nuview	29490 Lakeview Ave.	Nuevo	PARA
4	Cajalco	17650 Cajalco Blvd.	Perris	PARA
5	Quail Valley	28971 Goetz Road	Quail Valley	PARA
6	Towngate	22250 Eucalyptus Ave.	Moreno Valley	PARA
7	Sun City	27860 Bradley Road	Sun City	PARA
8	Woodcrest	17800 Van Buren Blvd.	Riverside	PARA
9	Goodmeadow	21565 Steele Peak Road	Perris	PARA
10	Elsinore	410 West Graham Ave.	Lake Elsinore	PARA
11	Lakeland Village	17643 Brightman Ave.	Lake Elsinore	PARA
12	Temecula	28330 Mercedes Street	Temecula	PARA
13	Home Gardens	135 N. McKinley	Corona	PARA
14	Corona	1511 Hamner Ave.	Norco	PARA
~~15~~	~~El Cerrito~~	~~20320 Temescal Canyon Road~~	~~Corona~~	~~PARA~~
16	Pedley	9270 Limonite Ave.	Pedley	
17	Glen Avon	10400 San Sevaine Way	Mira Loma	
18	West Riverside	7545 Mission Blvd.	Riverside	
19	Highgrove	469 Center Street	Highgrove	
20	Beaumont	1550 E. 6th Street	Beaumont	PARA
21	Calimesa	906 Park Ave.	Calimesa	
22	Cherry Valley	10055 Avenida Mira Villa	Cherry Valley	PARA
23	Pine Cove	24919 Marion Ridge Road	Idyllwild	PARA
24	Cabazon	14580 Broadway	Cabazon	PARA
25	San Jacinto	132 South San Jacinto Blvd.	San Jacinto	PARA
26	Little Lake	25954 Stanford Street	Hemet	PARA
27	Eastvale	6709 Cedar Creek	Eastvale	PARA
28	Sage	37381 Sage Road	Sage	PARA
29	Anza	56560 Highway 371	Anza	PARA
30	Pinyon	70080 Highway 74	Mountain Center	PARA
32	La Quinta	78136 Frances Hack Lane	La Quinta	PARA
33	Palm Desert	44400 Town Center Way	Palm Desert	PARA
34	Winchester	32655 Haddock Street	Winchester	PARA
35	Roy Wilson	72695 La Canada Way	Thousand Palms	PARA
36	DHS / Skyborne	11535A Karen Ave.	Desert Hot Springs	PARA
37	Desert Hot Springs	65958 Pierson Blvd.	Desert Hot Springs	PARA
38	Rubidoux	3590 Rubidoux Blvd.	Riverside	
39	Thermal	56925 Tyler Street	Thermal	PARA
40	Mecca	91100 Fourth Street	Mecca	PARA
41	North Shore	99065 Corvina Road	North Shore	PARA
42	Oasis	76800 Highway 86	Thermal	PARA
43	Blythe	140 West Barnard Street	Blythe	PARA
44	Ripley	13950 Broadway Ave.	Ripley	PARA
45	Blythe Air Base	17280 West Hobson Way	Blythe	PARA
46	Riverbend	HCR 20, Box 2411	Blythe	Vol. Fire Co.[2]
48	Sunnymead Ranch	10511 Village Road	Moreno Valley	PARA
49	Lake Tamarisk	43880 Lake Tamarisk	Desert Center	PARA
50	South Rancho Mirage	70801 Highway 111	Rancho Mirage	PARA
51	El Cariso	32353 Ortega Highway	Lake Elsinore	PARA

Sta. #	Station Name	Location	City	Services / Agencies[1]
~~52~~	~~Cottonwood~~	~~44222 Sage Road~~	~~Aguanga~~	~~Vol. Fire Co.[2]~~
53	Garner Valley	59200 Morris Ranch Road	Mountain Center	PARA
54	Homeland	25730 Sultanas Road	Homeland	PARA
55	Indian Wells	44900 El Dorado Drive	Indian Wells	PARA
56	Sky Valley	72985 Dillon Road	Desert Hot Springs	PARA
57	~~Indio Hills~~ *Corydon*	~~80400 Dillon Rd~~ *3367 Corydon Av*	~~Desert Hot Springs~~ *Norco*	*PARA*
58	Moreno Beach	28020 Bay Ave.	Moreno Valley	PARA
59	Mead Valley	19450 Clark Street	Perris	PARA
60	Canyon Lake	28730 Vacation Drive	Canyon Lake	PARA
61	Wildomar	32637 Gruwell Street	Wildomar	PARA
62	Rancho Carrillo	Lot #51 Verdugo Road, Box 1062	San Juan Capistrano	Vol. Fire Co.[2]
63	Poppet Flats	49575 Orchard	Banning	PARA
64	Sycamore Creek	26425 Horsethief Canyon Rd.	Elsinore	PARA
65	Kennedy Park	15111 Indian Ave.	Moreno Valley	PARA
66	Beaumont City	628 Maple Street	Beaumont	PARA
67	Mesa View	73200 Mesa View Drive	Palm Desert	PARA
68	Menifee	26020 Wickerd Road	Menifee	PARA
69	Rancho Mirage North	71751 Gerald Ford Drive	Rancho Mirage	PARA
70	La Quinta South	54001 Madison Ave.	La Quinta	PARA
71	Palm Desert North	73995 Country Club Drive	Palm Desert	PARA
72	Valle Vista	25175 Fairview	Hemet	PARA
73	Rancho California	27415 Enterprise Circle West	Temecula	PARA
74	Rancho Capistrano	35420 Calle Grande	Lake Elsinore	Vol. Fire Co.[2]
75	Bear Creek	38900 Clinton Keith Road	Murrieta	PARA
76	Menifee Lakes	29950 Menifee Road	Menifee	PARA
77	Lake Riverside	49937 Comanche Court	Aguanga	PARA
78	Mountain Center	28500 Highway 243	Mountain Center	PARA
79	Coachella	1377 Sixth Street	Coachella	PARA
80	Sun City Shadow Hills	81025 Avenue 40	Indio	PARA
81	North Bermuda Dunes	37955 Washington	Palm Desert	PARA
82	Lake Hills	17452 Lake Pointe Drive	Riverside	PARA
83	French Valley	37500 Sky Canyon Drive	Murrieta	PARA
84	Parkview	30650 Pauba Road	Temecula	PARA
85	McVicker Park	29405 Grand Ave.	Lake Elsinore	PARA
86	Indio	46-990 Jackson Street	Indio	PARA
87	~~North Indio~~ *Terra Lago*	~~43-715 Jackson Street~~ *42900 Golf Center Parkway*	*Indio*	*PARA*
88	West Indio	46-621 Madison Street	Indio	PARA
89	Banning	172 North Murray	Banning	PARA
90	North Perris	333 Placentia Ave.	Perris	PARA
91	College Park	16110 Lassalle Street	Moreno Valley	PARA
92	Wolf Creek	32211 Wolf Creek Drive	Temecula	PARA
93	La Quinta North	44-555 Adams Street	La Quinta	PARA
94	Canyon Hills	22770 Railroad Canyon Rd.	Lake Elsinore	PARA
~~95~~ *96*	Glen Oaks	37700 Glen Oaks Rd.	Temecula	PARA
97	*Rosetta Canyon*	*41725 Rosetta Canyon Drive*	*Lake Elsinore*	
99	*Morrison*	*13400 Morrison Street*	*Moreno Valley*	
101	*Perris*	*105 S. F Street*	*Perris*	
276	Cabazon Indian Fire	84245 Indio Springs Road	Indio	TRIBAL
177	Pechanga Indian Fire	Pechanga Indian Reservation	Temecula	TRIBAL

Sta. #	Station Name	Location	City	Services / Agencies[1]
277	Pechanga Indian Fire	Pechanga Indian Reservation	Temecula	TRIBAL
278	Morongo Indian Fire	11581 Potrero Road	Banning	TRIBAL
621	Idyllwild	54160 Maranatha Dr.	Idyllwild	MUNI.
n/a	Bautista Conservation Camp	33015 Bautista Road	Hemet	CALFIRE
n/a	Norco Conservation Camp	5th and Western Blvd.	Norco	CALFIRE
n/a	Oak Glen Conservation Camp	41100 Pine Bench Road	Yucaipa	CALFIRE
n/a	Ryan Air Attack Base	4530 Walden Weaver Road	Hemet	CALFIRE[3]

Footnotes:
1. All stations are CalFire/Riverside County Fire Dept./Contract City unless otherwise noted. "PARA" indicates stations that also provide paramedic services.
2. Mailing address only provided for Volunteer Fire Companies. Not fixed-location fire stations.
3. CalFire base for air-based fire-fighting operations for Inland Empire.

Source: Riverside County Fire Dept. website, www.rvcfire.org/opencms/facilities/Fire Stations/index.html, accessed Feb. 17, 2011.*Letter from Riverside County Fire Department to Kristi Lovelady, June 30, 2014*

B. Policies and Regulations Addressing Fire Protection

1. State Regulations and Plans

2012 CalFire Riverside Unit Strategic Fire Plan (RUSFP): The RUSFP is used by the CalFire Riverside Unit to direct and guide its fire management activities for its service area. The plan emphasizes "pre-fire" management, which is the process to assess alternatives to protect assets from unacceptable risk of wildland fire damage and focus on those actions that can be taken in advance of a wildland fire to potentially reduce the severity of the fire and ensure safety. Pre-fire "project alternatives" may include a combination of fuels reduction, ignition management, fire-safe engineering activities and forest health improvement to protect public and private assets. In addition to its main emphasis on the San Jacinto Mountains and its at-risk communities, pre-fire projects have also been planned and implemented on SRA lands in and adjacent to the Cleveland National Forest. A number of cooperative projects have taken place with many more being planned. The Riverside Unit also treats fuels within the region's Multi-Species Preserves and other public lands within SRAs, but not in National Forests. The overall goal of the RUSFP is to reduce total government costs and citizen losses from wildland fire in the Riverside Unit by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. See Section 4.13.2 (Existing Environmental Setting – Hazardous Materials and Safety) for additional details.

Public Resources Code (PRC) Sections 4290-4299: This portion of the PRC requires minimum statewide fire safety standards pertaining to: road standards for fire equipment access; standards for signs identifying streets, roads and buildings; minimum private water supply reserves for emergency fire use; and fuel breaks and greenbelts. With certain exceptions, all new construction in potential wildland fire areas is required to meet the statewide standards. State requirements, however, do not supersede more restrictive local regulations. See EIR Section 4.13 (Hazardous Materials and Safety) for full maps, discussion and analysis of hazardous fire areas within Riverside County.

PRC Sections 4102-4127 - State Responsibility Areas: PRC Section 4102 specifies that "'State responsibility areas' means areas of the state in which the financial responsibility of preventing and suppressing fires has been determined by the [State Fire] Board pursuant to Section 4125, to be primarily the responsibility of the state." These areas may contain state or privately owned forest, watershed and rangeland. Sections 4126-4127 of the PRC further specify the standards that define what does and does not constitute an SRA.

California Code of Regulations (CCR) Title 24, Parts 2 and 9 – Fire Codes: Part 2 of Title 24 of the CCR refers to the California Building Code which contains complete regulations and general construction building standards of State of California adopting agencies, including administrative, fire and life safety and field inspection provisions. Part 2 was updated in 2008 to reflect changes in the base document from the Uniform Building Code to the International Building Code. Part 9 refers to the California Fire Code, which contains other fire safety-related building standards. In particular, Chapter 7A, "Materials and Construction Methods for Exterior Wildfire Exposure," in the 2010 California Building Code addresses fire safety standards for new construction and Section 701A.3.2 addresses "New Buildings Located in Any Fire Hazard Severity Zone."

CCR Title 14 – Natural Resources: These regulations constitute the basic wildland fire protection standards of the California Board of Forestry. They were prepared and adopted to establish minimum wildfire protection standards in conjunction with building, construction and development within SRAs. Among other things, Title 14 requires the design and construction of structures, subdivisions and developments in an SRA provide for basic emergency access and perimeter wildfire protection measures (fire fuel modification zones, etc.).

California Government Code (CGC) Sections 51178-51179 – Very High Fire Hazard Severity Zones: Section 51178 specifies that the Director of CalFire, in cooperation with local fire authorities, must identify areas that are Very High Fire Hazard Severity Zones (VHFHSZs) in Local Responsibility Areas (LRAs), based on consistent statewide criteria and the expected severity of fire hazard. It further specifies that VHFHSZs "shall be based on fuel loading, slope, fire weather and other relevant factors," including areas subject to Santa Ana winds which are a "major cause of wildfire spread." Section 51179 states that a local agency (such as a county) must also designate (and map) the VHFHSZs in its jurisdiction by ordinance. (See the discussion on Ordinance No. 787, below, regarding Riverside County's VHFHSZs). Other portions of the Government Code outline when a local agency may use its discretion to exclude areas from VHFHSZ requirements or add areas not designated by the State of California to its VHFHSZ areas.

CGC Section 51182 – Defensible Space: This code outlines the standards for maintaining a "defensible space" around properties in areas designated as a very high fire hazard severity zone. See Section 4.13.3 (Policies and Regulations Addressing Hazardous Materials and Safety) for specifics.

PRC Section 4213 - Fire Prevention Fees: Pursuant to PRC Section 4213, in July of 2011, the State of California began assessing an annual "Fire Prevention Fee" for all habitable structures within the State's Responsibility Area (SRA) to pay for fire prevention services. The SRA is the portion of the state where the State of California is financially responsible for the prevention and suppression of wildfires. The SRA does not include lands within incorporated city boundaries, Tribal or federally owned land. As of 2013, the fee is up to $150 per habitable structure (i.e., a building that can be occupied for residential use, which does not include incidental buildings such as detached garages, barns, outdoor bathrooms, sheds, etc.).

2. County Plans and Regulations

Riverside County Fire Department Fire Protection and EMS Strategic Master Plan: The County of Riverside has developed a strategic fire plan that details the department's goals and strategies for proactively coordinating fire facility, service and equipment needs for 2009-2029. It incorporates CalFire's management plan for several sub-zones within the county. The plan is aimed at ensuring that existing and future development maintains adequate service levels throughout Riverside County.

Ordinance No. 659 – Establishing a Development Impact Fee Program: This ordinance requires that new development pay Development Impact Fees to ensure that certain facility obligations are met in order to reasonably serve the subject development. Such obligations include the construction of new fire facilities. The

ordinance ensures that there is a reasonable relationship between the use of the fees and the type of development projects on which the fees are imposed.

Ordinance No. 695 - Requiring the Abatement of Hazardous Vegetation: Each spring, the CDF and RCFD distribute hazard abatement notices. These notices, which currently go to about 30,000 Riverside County residents, require property owners to reduce the fuels around their property. Requirements for hazard reduction around improved parcels (those with structures) are set forth in Riverside County Ordinance No. 787 (and PRC Section 4291). A minimum 30-foot clearance is required around all structures, which can be extended to 100 feet in areas where severe fire hazards exist. On unimproved parcels, as set forth in Riverside County Ordinance No. 695, the property owner is required to disc or mow 100 feet along the perimeter of the property. The County of Riverside also requires a development within a high fire hazard area to design and implement fuel modification programs for the interface between developed and natural areas within and adjacent to the proposed project area.

Ordinance No. 787 - Fire Code Standards: This ordinance adopts a variety of state codes, such as the Uniform Fire Code (UFC), established by the International Fire Code Institute, for implementation and enforcement at the county level. This ordinance also addresses implementation of the California Uniform Building Code, based on the International Conference of Building Officials. Both major Codes prescribe performance characteristics and materials to be used to achieve acceptable levels of fire protection.

3. Existing County General Plan Policies for Fire Protection

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval.

a. Safety (S) Element

Policy S *5.9* (Previously S 5.2): Reduce fire threat and strengthen fire-fighting capability so that the County could successfully respond to multiple fires.

Policy S *5.10* (Previously S 5.3): Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities, and encourage them for all residences.

Policy S *5.12* (Previously S 5.5): Conduct and implement long-range fire safety planning, including stringent building, fire, subdivision and municipal code standards, improved infrastructure and improved mutual aid agreements with the private and public sector.

Policy S *5.13* (Previously S 5.7): Develop a program to utilize existing reservoirs, tanks and water wells in the county for emergency fire suppression water resources.

Policy S 7.3: Require commercial businesses, utilities and industrial facilities that handle hazardous materials to: install automatic fire and hazardous materials detection, reporting and shut-off devices; and install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

b. Land Use (LU) Element

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

Policy LU *10.1* (Previously LU 9.1): Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities.

4. Proposed New or Revised County General Plan Policies

The following revisions to existing Safety (S) Element policies within the General Plan are included as part of GPA No. 960. These revisions are intended to enhance the policies' implementation and comprehensive use.

a. Safety (S) Element

Policy S 5.1: Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:

a. All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the County Fire and Building and Safety departments.

b. ~~a.~~All proposed *development and* construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.

c. ~~b.~~In addition to the standards and guidelines of the California ~~Uniform~~ Building Code and California ~~Uniform~~ Fire Code fire safety provisions, continue *to implement* additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire *Code (Ordinance No. 787)* ~~Protection Ordinance~~. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.

d. ~~c.~~Proposed development *and construction* in *Fire Hazard Severity Zones* ~~Hazardous Fire areas~~ shall provide secondary public access, ~~unless determined otherwise by the County Fire Chief~~ *in accordance with County Ordinances*.

e. ~~f.~~Proposed development *and construction* in *Fire Hazard Severity Zones* ~~Hazardous Fire areas~~ shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the County Fire Chief.

f. Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, and constructed that provide adequate defensibility from wildfires.

***NEW* Policy S 5.2:** *Encourage continued operation of programs for fuel breaks, brush management, controlled burning, revegetation and fire roads.*

NEW **Policy S 5.3:** *Monitor fire-prevention measures (such as fuel reduction) through a site specific fire-prevention plan to reduce long-term fire risks in the Fire Hazard Severity Zones.*

NEW **Policy S 5.4:** *Limit or prohibit development or activities in areas lacking water and access roads.*

NEW **Policy S 5.5:** *Encourage proposed development in Fire Hazard Severity Zones to develop where fire and emergency services are available or planned.*

NEW **Policy S 5.6:** *Demonstrate that the proposed development can provide fire services that meet the minimum travel times identified in Riverside County Fire Department Fire Protection and EMS Strategic Master Plan.*

NEW **Policy S 5.7:** *Minimize pockets of flammable vegetation that increase likelihood of fire spread through conceptual landscaping plans to be reviewed by Planning and Fire Departments in the Fire Hazard Severity Zones. The conceptual landscaping plan of the proposed development shall at a minimum include:*

a. Plant palette suitable for high fire hazard areas to reduce the risk of fire hazards.

b. Retention of existing natural vegetation to the maximum extent feasible.

c. Removal of onsite combustible plants.

NEW **Policy S 5.8:** *Design to account for topography of a site and reduce the increased risk from fires in the Fire Hazard Severity Zones located near ridgelines, plateau escarpments, saddles, hillsides, peaks, or other areas where the terrain or topography affect its susceptibility to wildfires by:*

a. Providing fuel modification zones with removal of combustible vegetations, but minimizing visual impacts and limiting soil erosion.

b. Replacing combustible vegetation with fire resistant vegetation to stabilize slopes.

c. Submitting topographic map with site specific slope analysis.

d. Submitting erosion and sedimentation control plans.

e. Providing a minimum 30 foot of setback from the edge of the fuel modification zones.

f. Minimizing disturbance of 25% or greater natural slopes.

Policy S *5.11* (Previously S 5.4): Utilize ongoing brush clearance fire inspections to educate homeowners on fire prevention tips *by implementing annual countywide weed abatement program*.

Policy S *5.14* (Previously S 5.8): Periodically review inter-jurisdictional fire response agreements, and improve firefighting resources as recommended in the *Riverside* County *Fire Department* Fire Protection ~~Master~~ Plan *and EMS Strategic Master Plan* to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations and the risk posed by multiple ignitions, to ensure that:

a. Fire reporting and response times do not exceed *the goals* ~~those~~ listed in the *Riverside* ~~—~~County *Fire Department* Fire Protection ~~Master —~~Plan *and EMS Strategic Master Plan* identified for each of the development densities described.

b. Fire flow requirements (water for fire protection) are consistent with ~~Insurance Service Office (ISO) recommendations~~ *Riverside County Ordinance 787.*

c. The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

Policy S *5.15* (Previously S 5.10): Continue to utilize the Riverside County Fire *Department Fire* Protection *and EMS Strategic* Master Plan as the base document to implement the goals and objectives of the Safety Element.

***NEW* Policy S 5.17:** *Identify, map and update on an as-needed continual basis, the Fire Hazard Severity Zone maps [see General Plan Figure S-11].*

***NEW* Policy S 5.18:** *Ensure that the Fire Department has appropriate municipal staffing and fire protection planning staff that meet the needs of development pressure and adequately respond to long range fire safety planning.*

***NEW* Policy S 5.19:** *Implement a coordination program with fire protection and emergency service providers to reassess fire hazards after wildfire events and to adjust fire prevention and suppression needs, as necessary.*

***NEW* Policy S 5.20:** *Implement a regional coordination program to increase support for coordination among fire protection and emergency service providers.*

***NEW* Policy S 5.21:** *Implement a long-term training and education program among government agencies and communities about fire protection.*

Policy S 7.1: Continually strengthen the *Riverside County Office of Emergency Services' Response Plan and Multi-Jurisdictional Local Hazard Mitigation Plan* ~~Multihazard Functional Plan~~ and maintain mutual aid agreements with federal, state, local agencies and the private sector to assist in:

a. Clearance of debris in the event of widespread slope failures, collapsed buildings or structures, or other circumstances that could result in blocking emergency access or regress.

b. Heavy search and rescue.

c. Fire suppression.

d. Hazardous materials response.

e. Temporary shelters.

f. Geologic and engineering needs.

g. Traffic and crowd control.

h. Building inspections.

b. Land Use (LU) Element

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children),~~ transportation systems and fire/police/medical services.

***NEW* Policy LU 7.8:** *Require new developments in Fire Hazard Severity Zones to provide for a fuel clearance/modification zone, as required by the Fire Department.*

C. Thresholds of Significance for Fire Protection

The proposed project would result in a significant impact related to fire protection if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered fire facilities. Or, result in the need for new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

D. Effect of GPA No. 960 on the General Plan and on Fire Protection

The General Plan is concerned mainly with the physical build out of the county; many of the changes associated with GPA No. 960 would affect planned land usage. The proposed project's update to the General Plan includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in areas throughout the county. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas; all of which would require adequate fire protection services to ensure their safety.

Table 4.17-D (Theoretical Fire Station Needs With and Without the Project) provides a summary of the theoretical needs for fire stations within Riverside County according to the theoretical estimate of need associated with existing land uses, as well as that for build out of the known spatial components or locations addressed by GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). It should be noted that the following projections are based on the assumption that all of the changes proposed under GPA No. 960 actually result in future development and fully build out (as part of overall implementation of the Riverside County General Plan). That is, it is a theoretical, worst-case scenario that likely over-states the actual development potential in the real world. The actual future development of the individual parcels and areas affected by GPA No. 960 proposals, as with build out of the rest of the General Plan, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities.

The County of Riverside has little to no control over the decision to propose development (new or redeveloped) on a given site (though the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County). Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply (i.e., existing home inventory) and even infrastructure availability (water supply, electricity, etc.). For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on fire needs cannot be delineated at present since they are location-dependent. ~~For land use policy changes without currently assigned locations (Indian fee lands, incidental rural~~

~~commercial, etc.), specific effects on fire services cannot be delineated at present since they are location-dependent.~~ For the sake of comparison, however, Table 4.17-F (Comparison of Theoretical Fire Support Needs at General Plan Build Out) shows the theoretical fire protection service needs at build out for both the current General Plan and the General Plan as it would be if amended pursuant to proposed GPA No. 960.

The tables below summarize projected theoretical need for fire stations, as an indicator of the need for fire protection services, for three scenarios. Again, these calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. In the real world, a number of additional factors that are beyond the scope of this analysis would apply (funding availability, jurisdiction, available manpower and equipment, etc.). The actual planning, locations and development of fire stations and the provision of all associated services are under the purview of the RCFD. Table 4.17-D shows demand for the existing (baseline) level of development currently estimated to be present on the portions of Riverside County directly affected by proposed land use-related changes; compared against the full build out of all of the same areas as they would be permitted under the updated General Plan (e.g., pursuant to the changes proposed in GPA No. 960).

Table 4.17-D: Theoretical Fire Station Needs With and Without the Project

Land Use	Generation Factors (per Fire Station)	Associated with Existing Uses[1,2]		Updated General Plan[1,3] Build Out (with GPA No. 960)		
		Total Units	Fire Stations Needed[3]	Build Out Total Units	Fire Stations Needed[2]	Difference
Residential	2,000 units	5,850 du	2.9	16,600 du	8.3	+ *5.4*
Commercial[4]	3.5 million sq. ft.	580,000 sf	0.2	3,949,000 sf	1.1	+ *0.9*
Industrial[5]	3.5 million sq. ft.	2,108,000 sf	0.6	3,759,000 sf	1.1	+ *0.5*
Total Area	**111,440 acres**	**Totals**	**3.7**		**10.5**	**+ *6.8***

Footnotes:
1. Theoretical need for fire services associated with the given level of development indicated. RCFD determines and implements actual needs. All results rounded after analysis to the nearest 10 for dwelling units (du) and nearest 1,000 for square footage (sf).
2. Theoretical need attributed solely to the portion of Riverside County associated with the lands proposed for spatial changes as part of GPA No. 960.
3. Theoretical need for fire services associated with build out of the General Plan (including as updated pursuant to GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and (for existing uses) ranches.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Fire protection standards (for fire stations needed) from EIR No. 441.

Because much of the area addressed by GPA No. 960 includes regions for which future development potential is being eliminated (e.g., deletion of Rural Village Study Areas), the first scenario (Table 4.17-D) includes many areas where the build out scenario under the updated General Plan is the same as that which would occur under the existing (current General Plan's) mapped LUDs. As such, these areas do *not* represent new areas of growth attributable to the project, GPA No. 960, but rather simply reflect the anticipated build out of the County General Plan that would occur with or without the project. Thus, in order to focus on the areas where the proposed project would actually result in new development potential (i.e., potential impacts), a second scenario was developed. As shown in Table 4.17-E (Theoretical Fire Station Needs for Areas of New Development Potential), this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels in which an LUD was changed (except those being assigned to OS-CH due to their acquisition for open space conservation pursuant to the WRC-MSHCP; these parcels would be removed from development potential).

Table 4.17-E: Theoretical Fire Station Needs for Areas of New Development Potential

Land Use[1]	Generation Factors (per Fire Station)	Existing Uses[1,2] (New Development Areas Only)		Build Out[1,3] (New Development Areas Only)		
		Total Units	Fire Stations Needed[3]	Build Out Total Units	Fire Stations Needed[2]	Difference
Residential	2,000 units	2,060 du	1.0	6,350 du	3.2	*+ 2.1*
Commercial[4]	3.5 million sq. ft.	254,000 sf	0.1	3,391,000 sf	1.0	*+ 0.9*
Industrial[5]	3.5 million sq. ft.	1,478,000 sf	0.4	3,253,000 sf	1.0	*+ 0.6*
Total Area	**10,690 acres**	**Totals**	**1.5**		**5.2**	***+ 3.7***

Footnotes:
1. Represents only the areas proposed for new development intensity or density under GPA No. 960 and with known spatial components. For example, omits areas where planned development would be "reduced" to that designated by existing General Plan LUDs (e.g., areas in which Rural Village Overlays or Study Areas were deleted).
2. Theoretical need for fire services associated with the given level of development indicated. RCFD determines and implements actual needs. All results rounded after analysis to the nearest 10 for dwelling units (du) and nearest 1,000 for square footage (sf).
3. Theoretical need attributed solely to the portion of Riverside County associated with the lands proposed for spatial changes as part of GPA No. 960 that increase development density or intensity above existing General Plan.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and (for existing uses) ranches.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Fire protection standards (for fire stations needed) from EIR No. 441.

Lastly, the third table, Table 4.17-F, shows a "plan-to-plan" comparison between the build out conditions of the General Plan as it currently exists and then as it would be if GPA No. 960 were approved and fully implemented. This third table indicates the relative effects of the project on long-range planning, rather than environmental impacts per se, and is provided for informational purposes and to allow comparison between build out outcomes.

Upon build out of Riverside County pursuant to the existing (2008) General Plan, as shown in Table 4.17-F, Riverside County as a whole would require 390 fire stations in total (i.e., 295 additional stations). Under the updated General Plan, amended per GPA No. 960, this build out total would decrease to 358 (i.e., an additional 263 fire stations, an 8% decrease). Thus, on a comparative basis, the proposed project would contribute to fewer impacts to the environment at build out since up to 32 fewer new fire stations would need to be constructed.

Table 4.17-F: Comparison of Theoretical Fire Support Needs at General Plan Build Out

Land Use	Current General Plan		General Plan as Amended by GPA No. 960		
	Build Out Total[1]	Fire Stations Needed[2]	Build Out Total	Fire Stations Needed[2]	Difference
Residential	534,100 du	267	498,000 du	249	*- 18*
Commercial[3]	68,059,000 sf	19	57,919,000 sf	17	*- 2*
Industrial[4]	361,013,000 sf	103	323,728,000 sf	92	*- 11*
TOTALS	**4,013,400 acres**	**390**	**4,011,600 acres**	**358**	***- 32***

Footnotes:
1. All results rounded to the nearest 100 for dwelling units (du) or 1,000 for square footage (sf) after analysis.
2. The theoretical total number of fire stations estimated to be needed at build out of the Riverside County General Plan (current and as proposed for amendment). As of 2009, there are 95 existing fire stations in Riverside County.
3 Includes land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
4 Includes the following land uses: light industrial and heavy industrial.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Fire protection standards (for fire stations needed) from EIR No. 441.

In terms of actual development, however, as indicated in Table 4.17-D, the existing developed land uses and activities within Riverside County for the lands potentially affected by the project theoretically require 3.7 fire stations worth of services. These needs are currently met by the 95 fire stations in Riverside County that the RCFD operates. Build out of the same area pursuant to the updated General Plan would result in the need for

just under seven (6.8) additional fire stations. Much of this growth, however, is already planned for in the existing General Plan and was analyzed under EIR No. 441, which was certified for the 2003 RCIP General Plan.

Table 4.17-E isolates just the areas of growth associated with GPA No. 960 that would potentially be greater than that originally planned under the existing General Plan. Once areas planned merely for growth according to the existing General Plan are removed, the resultant scenario indicates that the future new development potential arising from GPA No. 960 would result in the need for an additional 3.7 fire stations.

To determine where in the county these new stations would be needed, the same data was broken down by Area Plan. This analysis indicated that approximately 1.0 additional fire station would be needed in the Elsinore Area Plan region as a result of GPA No. 960, due primarily to future development of the proposed Meadowbrook and Good Hope Rural Village Land Use Overlays. The Northeast Business Park Overlay would add demand for roughly 0.7 additional fire stations to the Lakeview/Nuevo Area Plan, and the LUD changes associated with achieving ALUP consistency around the Blythe Airport would add roughly 0.6 fire stations worth of demand to the Palo Verde Valley Area Plan. And, lastly, both the Jurupa and Western Coachella Valley Area Plans would see roughly 0.3 fire stations worth of demand increase, while the San Jacinto Valley Area Plan would see 0.1. These are all due to the various County-initiated LUD changes proposed under GPA No. 960, plus the LUDs being adjusted within the Jurupa Area Plan to ensure consistency with the Flabob and Riverside Municipal Airport ALUPs.

In terms of General Plan changes, the project would only incrementally affect most of Riverside County's Area Plans; in amounts not large enough to trigger the need for an additional fire station in most county areas. ~~Not surprisingly~~, *T*he increased demand for fire stations show up most clearly in the areas being planned for urbanization – the Meadowbrook and Good Hope Rural Village Overlays in particular. In terms of environmental effects, future development accommodated by GPA No. 960 would contribute incrementally to the need for additional fire stations and services throughout the county to ensure adequate levels of service and response times. For all but the Elsinore Area Plan, the development increases trigger less than one station in need. The environmental impacts and mitigation needed, if any, associated with these additional service needs are discussed in the section that follows, below.

E. Fire Protection – Impacts and Mitigation

The following impacts related to fire protection that would result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire facilities? Or, would it result in the need for new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services?

Impact 4.17.A – Cause Adverse Environmental Effects Due to the Need for Fire Protection Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. In terms of actual changes to existing levels of fire services, however, localized development increases would trigger the need for additional fire services in specific areas, such as the Elsinore Area Plan. Construction and operation of new or

improved fire stations within these areas would be subject to a number of regulatory measures that would ensure no significant environmental impacts occur.

1. Analysis of Impact 4.17.A

New development would introduce additional people and property requiring fire protection and emergency response services. This would result in additional fire and emergency responses from existing facilities. When new development is located outside the normal radius for acceptable response time, people and property would be at increased risk due to delayed response. An acceptable response time is generally defined as within five minutes for urban areas, ten minutes for suburban and rural community areas and twenty minutes for rural outlying areas. The fire and emergency vehicles and equipment responding would experience increased wear and tear due to additional distances traveled. Increased travel times would also decrease the number of calls that could be responded to during a shift. When demand is great enough in a given region, additional fire facilities would be built. However, in areas where development remains sparse, response times would not be likely to be drastically improved.

Hence, future development in areas distant from existing or planned fire stations would be at greater risk of harm due to longer response times. In addition, where new development occurs along the interface between urban areas and wildlands, wildland fire hazards would be created or exacerbated. In areas without adequate services nearby, this could result in the exposure of people and property to high fire hazard conditions without adequate fire protection. See also fire hazards discussion in Section 4.13 (Hazardous Materials and Safety) for additional details and analysis.

As shown in Table 4.17-F, above, existing standards indicate that full build out of the existing General Plan, Riverside County would require a total of approximately 390 fire stations (295 additional stations) to fully protect the populace. Land use changes associated with GPA No. 960 would reduce the number of fire stations needed countywide to 358 (32 fewer stations). Within the areas with known spatial components directly affected by the proposed project (roughly 111,440 acres), as shown in Table 4.17-D, full build out according to the updated General Plan would trigger the need for 6.8 additional fire stations over the estimated 3.7 needed to serve the theoretical existing (baseline) uses. Lastly, as shown in Table 4.17-E, within the spatial project area, a total of roughly 10,700 acres (10%) would have an increase in development density or intensity and was estimated to trigger the need for 3.5 additional fire stations to serve the new development that would directly be accommodated by GPA No. 960.

At the Area Plan level, future development accommodated by GPA No. 960 would trigger the need for a total of 6.8 additional fire stations, mostly spread incrementally throughout Riverside County. As discussed previously in Section 4.17.2 (Fire Protection Services), regional analysis indicates that the increase would be negligible to non-existent for much of Riverside County and small for most of the rest of Riverside County. In these locations, future development as a result of the project would not result in significant adverse impacts on acceptable service ratios or response times. For the Elsinore Area Plan, however, a full 1.0 fire stations would be needed by 2060. Roughly a half-share of a fire station would be triggered for the Lakeview/Nuevo (0.7), Palo Verde Valley (0.6) and Mead (0.4) Area Plans. Three other area plans would have very minor directly attributable increases, as described in the prior section. Other than the four regions above, the data indicate that future development accommodated by GPA No. 960 would only incrementally increase fire service needs in any given region. These small increases would not result in a significant impact on fire service response times in these areas.

Where new fire stations are needed to ensure adequate response times, environmental impacts would be associated with their construction to the extent that their location, construction methods and operations affect the surrounding area. Data indicate that within the affected Area Plans sufficient vacant lands exist within their

general urban footprints. This vacant land availability means that situating new fire stations within these areas could be achieved in a manner that minimizes environmental impacts. In addition, impacts associated with construction of the 3.5 extra stations needed would be offset by the environmental impacts avoided in building 32 fewer fire stations throughout Riverside County. (That is, only 358 fire stations would be needed, opposed to the 390 that would be needed to serve the existing General Plan at full build out; see Table 4.17-F). Hence, the environmental impacts of construction of 3.5 fire stations within unincorporated Riverside County would not be significant and no project-specific mitigation is needed.

2. Regulatory Compliance for Impact 4.17.A

The above analysis indicates this impact would be less than significant and no project-specific mitigation is needed. Moreover, the following regulations, programs, policies and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

a. Compliance With Federal, State and County Regulations

California Codes: A number of California regulations, including PRC Sections 4290-4299 and CGC Section 51178, address fire safety. In particular, these sections require minimum statewide fire safety standards pertaining to: roads for fire equipment access; signage for identifying streets, roads and buildings; minimum private water supply reserves for emergency fire use; and, fire fuel breaks and greenbelts. They also identify primary fire suppression responsibilities among the federal, state and local governments. In addition, it sets fire safety standards for all buildings and structures in, or adjoining, mountainous areas, or forest-, brush- or grass-covered lands or any land covered with flammable material to protect property from wildland fires.

Riverside County Fire Department Fire Protection and EMS Strategic Master Plan: The County of Riverside has developed this plan to proactively plan facility, service and equipment needs for fire protection. The purpose is to ensure that new fire protection facilities are added when and where demand increases warrant them. It also incorporates the CDF Management Plan for several sub-zones within Riverside County. In addition, to ensure adequate fire protection for all residents of Riverside County, the Riverside County Department of Building and Safety and the Riverside County Fire Department enforce fire standards as they review building plans and conduct building inspections. Other programs are enforced to ensure compliance with established fire standards (both county and state), including the mapping and tracking areas of high fire hazard and fuel dangers. Implementation of this plan helps reduce potential risks of fire for residents in fire hazard areas and ensures that the necessary fire protective services are available as needed.

Ordinance No. 787 - Fire Code Standards: This ordinance adopts the Uniform Fire Code and adds requirements to further protect people and structures from fire risks, ensures that building would not impede emergency egress for fire safety personnel, equipment and apparatus would not hinder evacuation from fire, including potential blockage of stairways or fire doors.

Mitigation Fee: To accomplish these programs and ensure adequate services, the County of Riverside requires new development to pay fire protection mitigation fees pursuant to Ordinance No. 659. These fees are used by the Riverside County Fire Department to construct new fire protection facilities or provide facilities in lieu of the fee as approved by the Riverside County Fire Department. In addition, the County of Riverside requires all new structures constructed in unincorporated areas comply with the construction requirements of Riverside County Ordinance No. 787 and shall be provided with fire-retardant roofing material as described in the Uniform Building Code.

b. Compliance With Existing County General Plan Policies

The following existing policies of the Riverside County General Plan would further reduce the already insignificant project impacts to fire protection services. See Section 4.17.2.B. for full text of each of these policies.

Policy LU 5.2: This General Plan policy ensures that new developments contribute funds to be used to provide necessary fire and emergency response services and that needed new facilities are constructed in a timely manner to ensure adequate protection of the people and property of Riverside County.

Policy LU 10.1: This policy requires that future developments contribute a fair amount for the funding of infrastructure, public facilities such as police and fire facilities in order to ensure adequate availability of such infrastructure and services, thereby, reducing potential hazards.

Policy S 5.12: This policy encourages the practice and implementation of long-range fire safety planning as well as more stringent codes and improved infrastructure aimed at the reduction of fire hazards including wildland fire hazards.

Policies S 5.9 and 5.13: These policies require that developments be constructed to various building and fire code standards to ensure structures: provide appropriate levels of fire resistance (such as tile roofs, for example); are situated in a manner that provides adequate emergency access and evacuation; and maintain appropriate fire fuel modification zones. These policies also direct the County of Riverside to provide appropriate fire protective services including, water connections and reservoirs for firefighting purposes.

c. Compliance With Proposed or Revised General Plan Policies

Of the General Plan policies listed in Section 4.17.2.B, above, Policies LU 5.1 and LU 7.8, S 5.1-5.8, S 5.11 and S 5.14-5.21, in particular, provide mitigation for impacts associated with the provision of fire protection services. Implementation of these General Plan policies would aid in reducing the impacts of future growth and development within Riverside County to less than significant levels. Specifically:

Policies LU 5.1 and 7.8: These policies ensure that future development would not overburden infrastructure and public services and that such infrastructure and services would continue to operate at adequate levels. Policy LU 7.8 also requires future development located within designated Fire Hazard Severity Zones to provide for fuel modification as determined by the Fire Department.

Policies S 5.1-5.8, 5.11 and 5.14-5.21: These Safety policies mitigate wildland fire risks through construction design standards and requirements; coordination amongst various County agencies, water agencies and surrounding jurisdictions to implement long-range fire safety planning; improved infrastructure, fire response agreements and adequate water supply and flow with coordination driven by Riverside County's Fire Protection Strategic Master Plan and the General Plan Safety Element; limiting development potential in areas that lack water and access roads; continued usage of fuel breaks, brush management, controlled burnings, revegetation and fire roads including clearance inspections; encouraging future development located within fire hazard zones to develop where adequate fire and emergency services already exist or are being planned; providing services that meet minimum travel times for fire; frequent updates of fire hazard maps; and fire mitigation through landscaping. Policy S 5.11 is implemented through Ordinance No. 659, described above. These policies help protect structures and ultimately Riverside County residents from fire damage, injury or loss of life.

F. Fire Protection Services – Level of Significance After Mitigation

The analysis presented above indicates that future development accommodated by the proposed project, GPA No. 960, would have less than significant impacts on fire protection services and the environment. Moreover, compliance with the above-listed existing regulatory programs, standards and General Plan policies would further prevent or reduce any impacts associated with the project.

4.17.3 Law Enforcement Services

A. Law Enforcement Services – Existing Environmental Setting

Riverside County provides community policing and operates and maintains correctional facilities. The Riverside County Sheriff's Department has 4,500 established positions, including roughly 2,300 sworn personnel, to provide for community policing services. The Sheriff's Department is a "demand response" agency that maintains limited patrol services. Nine Sheriff Department stations are located throughout Riverside County to provide area-level community service. See Table 4.17-G (County Sheriff's Department Substations Serving Riverside County), below, for the locations of these substations. In addition, the Sheriff's Department operates the Moreno Valley Police Department station in the City of Moreno Valley, providing law enforcement services to that city under contract. The Sheriff's Department also operates five adult correction or detention centers located throughout Riverside County. The Riverside County Probation Department operates the juvenile detention facilities.

Table 4.17-G: County Sheriff's Department Substations Serving Riverside County

Substation Name	Location
Cabazon	50290 Main Street, Cabazon
Colorado River	260 North Spring Avenue, Blythe
Hemet	43950 Acacia Avenue, Suite B, Hemet
Thermal	86-625 Airport Boulevard, Thermal
Jurupa Valley	7477 Mission Boulevard, Riverside
Lake Elsinore	333 Limited Avenue, Lake Elsinore
Palm Desert	73705 Gerald Ford Drive, Palm Desert
Perris	137 North Perris Boulevard, Suite A, Perris
Southwest	30755-A Auld Road, Murrieta
Moreno Valley Police Department	22850 Calle San Juan De Los Lagos, Moreno Valley (contract city)

Source: Riverside County GIS Dept., 2009.

In addition to the above stations, the Sheriff's Department operates the following five adult correctional facilities:

Robert Presley Detention Center: Located in downtown Riverside, this facility contains a total of 807 beds.

Southwest Detention Center: Located in the City of Murrieta, this facility contains 1,111 beds.

Indio Jail: Located in Indio, the jail contains 353 beds.

Larry D. Smith Correctional Facility: Located in the City of Banning, this facility contains 1,520 beds.

Blythe Jail: Located in the City of Blythe, this jail contains 115 beds.

The County of Riverside has also established a number of juvenile detention facilities, operated by the Probation Department, including:

Riverside Juvenile Hall: Located in the City of Hemet at 3933 Harrison Street. The Riverside Youth Academy, a juvenile youth camp that shares kitchen and other support elements, but operates as a separate entity with unique programming is also located at this site.

Indio Juvenile Hall: Located in the City of Indio at 47-665 Oasis Street. The Indio Youth Academy, a juvenile youth camp that shares kitchen and other support elements, is also located at this site.

Southwest Juvenile Hall: Located in the City of Murrieta at 30755C Auld Road.

Twin Pines Ranch: A juvenile camp located near the City of Banning at 49500 Twin Pines Road.

Van Horn Youth Center: A juvenile camp located in the City of Riverside at 10000 County Farm Road.

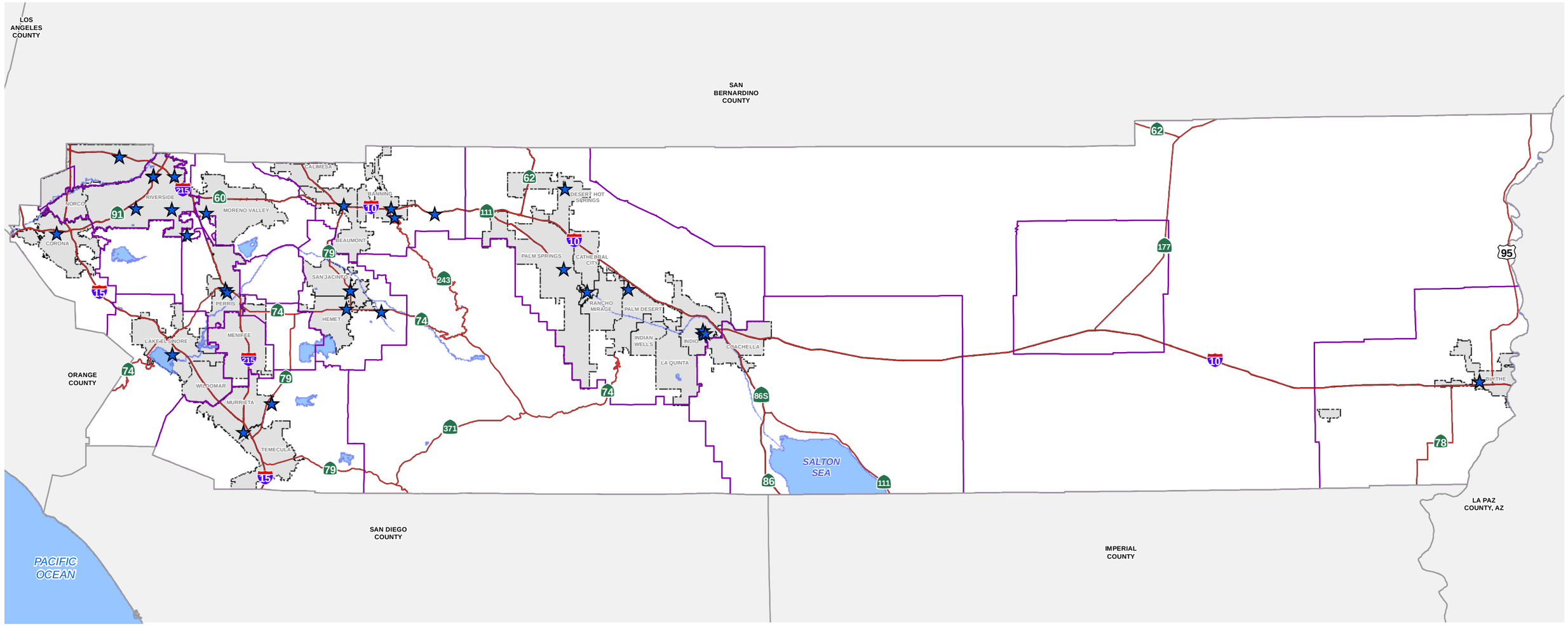
According to data published by the County of Riverside in its "Financial Highlights (Fiscal Year 2008-2009)," within Riverside County the Sheriff's Department responded to 302,400 service calls within unincorporated Riverside County, booked just over 62,000 people and managed a coroner case load of nearly 9,600.

For future planning purposes, according to EIR No. 441 for the 2003 RCIP General Plan, the Riverside County Sheriff's Department has established the following criteria for its staffing requirements in unincorporated areas of Riverside County:

- One sworn officer per 1,000 population
- One supervisor and one support staff employee per seven officers
- One patrol vehicle per three sworn officers
- One school resource officer per school

B. Policies and Regulations Addressing Law Enforcement Services

The following policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent CEQA analysis performed for site-specific projects. These measures are implemented, enforced and verified through their inclusion into project Conditions of Approval.



Data Source: Riverside County (2010)

- Police and Sheriff Stations
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.17.3

December 16, 2013

Miles

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Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

POLICE AND SHERIFF STATIONS

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1. County Regulations

Ordinance No. 556 - Authorizing Arrest and Citation for Violations of Statute or County Ordinance: This ordinance establishes that "certain classifications of officers and employees of the County of Riverside" are authorized with police powers to arrest persons in relation to misdemeanor or infraction violations of Riverside County statutes or ordinances, pursuant to California Penal Code Section 836.5.

Ordinance No. 469 - Relating to Training Standards for Peace Officers: This ordinance sets County of Riverside standards for the recruitment and training established by the Commission on Peace Officer Standards and Training, or Board of Corrections.

2. Existing Riverside County General Plan Policies

Although the General Plan does not include a Public Services Element, it does include the following Land Use (LU) Element policies intended to address the effects of future residents on law enforcement (Sheriff) protection services.

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

Policy LU *10.1* (Previously LU 9.1): Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities.

3. Proposed New or Revised Riverside County General Plan Policies

The following revision to this existing General Plan policy is included as part of GPA No. 960. The revision is intended to enhance the policy's implementation and comprehensive use.

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and sheriff services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children),~~ transportation systems and fire/police/medical services.

4. County Law Enforcement Provision Standards

According to the County Sheriff's Department, the service criteria used by the County of Riverside and State of California to determine the level of personnel or capacity of correctional facilities is listed below.

Community Policing: For community policing efforts, the County Sheriff's Department attempts to maintain a ratio of one deputy per 1,000 population.

Correctional Facilities: The capacity of the prison system is occupancy capacity, which is set by federal court order. The order provides that the County of Riverside cannot run the correctional system at more than 90% capacity. As such, the facilities are always at capacity and are projected to remain at capacity. However, the Sheriff's Department indicates that there is a continuous turn-over in the prison population and the number of inmates remains relatively constant.

The County of Riverside requires the payment of developer mitigation fees prior to the final inspection by the Building and Safety Department for any residential dwelling or mobile home installed on a permanent foundation. The fees are for the construction and acquisition of public facilities. The Sheriff's Department's ability to support the needs of future growth is dependent upon their financial ability to hire additional deputies. In addition, a growing population would require that the Sheriff's Department secure sites for and construct new detention facilities on a timely basis.

C. Thresholds of Significance for Law Enforcement Services

The proposed project would result in a significant impact on law enforcement services if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered law enforcement facilities. Or, result in the need for new or physically altered law enforcement facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any law enforcement services.

D. Effects of GPA No. 960 on the General Plan and Law Enforcement Services

The proposed update to the General Plan, GPA No. 960, includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development accommodated by GPA No. 960 will introduce people, property and structures into previously undeveloped areas; all of which would require adequate law enforcement and public safety services to ensure their protection and security.

The tables below summarize projected need for law enforcement services for three scenarios, as defined by the needed level of staffing and equipment deemed to represent an adequate level of service. Pursuant to Mitigation Measure 4.15.C of EIR No. 441, which was certified for the adoption of the 2003 RCIP General Plan, the following service ratios were applied to these scenarios:

- 1.5 Sworn Peace Officers per 1,000 population (0.5 officers greater than the standard service ratio)
- 1 Supervisory Officer and 1 support staff per every 7 sworn officers
- 1 Patrol vehicle per every 3 sworn officers

Table 4.17-H (Theoretical Law Enforcement Needs With and Without the Project) provides a summary of the *theoretical* needs for law enforcement staffing within Riverside County according to the theoretical estimate of need associated with existing land uses, as well as that for build out of the known spatial components or locations addressed by GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). It should be noted that the following projections are based on the assumption that *all* of the changes proposed under GPA No. 960 actually result in future development and fully build out (as part of overall implementation of the Riverside County General Plan). That is, it is a theoretical, worst-case scenario that likely over-states the actual development potential in the real world. The actual future development of the individual parcels and areas affected by GPA No. 960 proposals, as with build out of the rest of the General Plan, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities.

For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on law enforcement needs cannot be delineated at present since they are location-dependent. For the sake of comparison, however, Table 4.17-J (Theoretical Law Enforcement Needs at General Plan Build Out) shows the theoretical law enforcement needs at build out for both the current General Plan and the General Plan as it would be if amended pursuant to proposed GPA No. 960.

The tables below summarize projected theoretical need for law enforcement staffing, as an indicator of the need for law enforcement and protection services, for three scenarios. Again, these calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. In the real world, a number of additional factors that are beyond the scope of this analysis would apply (funding availability, jurisdiction, available manpower and equipment, etc.). The actual planning, locations and development of Sheriff's substations and the provision of all associated services is under the purview of the Riverside County Sheriff.

Table 4.17-H shows demand associated with the existing (baseline) level of development currently estimated to be present on the portions of Riverside County directly affected by proposed land use-related changes; compared against the full build out of all of the same areas as they would be permitted under the updated General Plan (e.g., pursuant to the changes proposed in GPA No. 960).

In addition, to focus on the areas where the proposed project would actually result in *new* development potential (i.e., potential impacts), a second scenario was developed. As shown in Table 4.17-I (Theoretical Law Enforcement Needs for New Development Potential Area), this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels in which an LUD was changed (except those being assigned to OS-CH due to their acquisition for open space conservation pursuant to the WRC-MSHCP; these parcels would be removed from development potential).

Lastly, the third table, Table 4.17-J, shows a "plan-to-plan" comparison between the build out conditions of the General Plan as it currently exists and then as it would be if GPA No. 960 were approved and fully implemented. This third table indicates the relative effects of the project on long-range planning, rather than environmental impacts per se, and is provided for informational purposes and to allow comparison between build out outcomes.

Table 4.17-H: Theoretical Law Enforcement Needs With and Without the Project

Staffing Item	Generation Factors	Associated with Existing Land Uses	GPA No. 960 Build Out	
		Total Staffing Needed[2]	Total Staffing Needed[2]	Difference
	Population[1]	***16,520 persons***	***46,370 persons***	***+ 29,840 people***
Sworn Officers	1.5 per 1,000 persons population[3]	24.8	69.5	+ 44.7 officers
Supervisors	1 per 7 officers	3.5	10.0	+ 6.5 staff
Support Staff	1 per 7 officers	3.5	10.0	+ 6.5 staff
Patrol Vehicles	1 per 3 officers	8.3	23.2	+ 14.9 vehicles
	STAFFING TOTALS	**31.9 personnel**	**89.4 personnel**	**+ 57.6 personnel**

Footnotes:

1. Theoretical population estimated for the land uses associated with the 111,440-acre area of known spatial project changes. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10 for dwelling units (du) and nearest tenth for staffing needs.
2. This is the theoretical need for Sheriff services associated with the given level of development indicated in each of the two population scenarios. The Sheriff's Department determines and implements actual needs.
3. Although the stated planning standard reported by the Sheriff's Department is 1.0 officers per 1,000, EIR No. 441 includes Mitigation Measure 4.15.C, which specifies the use of the 1.5-officer standard for new development mitigation purposes. Hence, this value is used herein for both scenarios.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Law enforcement service standards from EIR No. 441.

Table 4.17- I: Theoretical Law Enforcement Needs for New Development Potential Area

Staffing Item	Generation Factors	Associated with Existing Land Uses	GPA No. 960 Build Out	
		Total Staffing Needed[2]	Total Staffing Needed[2]	Difference
	Population[1]	***6,590 persons***	***19,610 persons***	***+ 13,020 people***
Sworn Officers	1.5 per 1,000 persons population[3]	9.9	29.4	+ 19.5 officers
Supervisors	1 per 7 officers	1.4	4.2	+ 2.8 staff
Support Staff	1 per 7 officers	1.4	4.2	+ 2.8 staff
Patrol Vehicles	1 per 3 officers	3.3	9.8	+ 6.5 vehicles
	STAFFING TOTALS	**12.7 personnel**	**37.8 personnel**	**+ 25.1 personnel**

Footnotes:
1. Theoretical population estimated for the land uses associated with the 10,690-acre area of known spatial project changes that would increase development intensity or density or change an LUD within the Community Development Foundation. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 for more information. All results rounded to the nearest 10 for dwelling units (du) and nearest tenth for staffing needs.
2. This is the theoretical need for Sheriff services associated with the given level of development indicated in each of the two population scenarios. The Sheriff's Department determines and implements actual needs.
3. Although the stated planning standard reported by the Sheriff's Department is 1.0 officers per 1,000, EIR No. 441 includes Mitigation Measure 4.15.C, which specifies the use of the 1.5-officer standard for new development mitigation purposes. Hence, this value is used herein for both scenarios.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Law enforcement service standards from EIR No. 441.

Table 4.17-J: Theoretical Law Enforcement Needs at General Plan Build Out

Staffing Item	Generation Factors	Existing General Plan	GPA No. 960	
		Total Staffing Needed[2]	Total Staffing Needed[2]	Difference
	Build Out Population[1]	***1,736,700 persons***	***1,599,000 persons***	***- 137,800 persons***
Sworn Officers	1.5 per 1,000 persons population[3]	2,600	2,400	- 200 Officers
Supervisors	1 per 7 officers	370	340	- 30 Supervisors
Support Staff	1 per 7 officers	370	340	- 30 Supp. Staff
Patrol Vehicles	1 per 3 officers	870	800	-70 vehicles
	STAFFING TOTALS	**3,350 personnel**	**3,080 personnel**	**- 260 personnel**

Footnotes:
1. Build out scenario populations for the unincorporated county. See Section 4.1 for more details on projection methods and assumptions. Populations rounded to nearest 100. All others rounded to nearest 10.
2. The theoretical total for law enforcement staffing estimated to be needed at build out of the Riverside County General Plan (current and as proposed for amendment). As of 2009, Riverside County had 2,300 sworn peace officers.
3. Although the stated planning standard reported by the Sheriff's Department is 1.0 officers per 1,000, EIR No. 441 includes Mitigation Measure 4.15.C, which specifies the use of the 1.5-officer standard for new development mitigation purposes. Hence, this value is used herein.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Law enforcement service standards from EIR No. 441.

As shown in the plan-to-plan comparison in Table 4.17-J, at build out, the project would result in a net decrease in the overall number of Sheriff's Department personnel needed throughout Riverside County when compared to build out of the existing General Plan. Staffing needs would require 260 fewer personnel, including 200 fewer sworn peace officers than what had been previously forecast for General Plan build out. Although the Riverside County Sheriff's Department did not provide generation factors for detention facilities, as with the other population-dependent calculations, it can be reasoned that a similar reduction in the need for such facilities would occur.

Thus, on a comparative basis, the proposed project would result in less impact on the environment due to a reduced need for Sheriff stations and detention facilities. Such a reduced need would be reflected in any of several ways, including through a reduction in the capacity needed within existing detention facilities; by delaying the need for construction of new detention facilities; or, by reducing the size of new detention facilities constructed.

In terms of future development, however, as indicated in Table 4.17-H, future development accommodated by the project would introduce a total of just under 30,000 new residents to Riverside County. These residents

would trigger the need for a total of approximately 58 additional law enforcement personnel, including 45 sworn officers, as well as 15 additional patrol vehicles. This total represents demand across Riverside County, however. The actual increases would be spread throughout the 19 Area Plans of unincorporated Riverside County, plus the remainder area of eastern desert not in an Area Plan. As such, the adverse effects on any single area would be small to negligible. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

Table 4.17-I isolates just the areas of growth associated with GPA No. 960 that would potentially be greater than that originally planned under the existing General Plan. This enables to see changes that differ from the background levels already planned for under the existing General Plan. Once these areas are removed, the resultant scenario indicates that the future new development potential arising from GPA No. 960 would specifically result in the need for an additional 20 officers and 6 staff personnel. To determine where in Riverside County these personnel would be needed, this data was further broken down by Area Plan.

This analysis indicated that statistically, the Elsinore Area Plan would need approximately 7 additional law enforcement personnel (6 officers, 1-2 staff) as a result of GPA No. 960, due primarily to future development of the proposed Meadowbrook and Good Hope Rural Village Land Use Overlays. The LUD changes associated with achieving ALUP consistency around the Blythe Airport would necessitate roughly 5 additional personnel (roughly 4.5 officers, 1 staff) within the Palo Verde Valley Area Plan. The Jurupa, Mead and Western Coachella Valley Area Plans would see an increase in staffing needs of about 2-3 officers and 1 staff each. These are all due to the various Riverside County-initiated LUD changes proposed under GPA No. 960, plus the LUDs being adjusted within the Jurupa Area Plan to ensure consistency with the Flabob and Riverside Municipal Airport ALUPs. Lastly, the San Jacinto Valley Area Plan would see its staffing needs go up by roughly one officer.

E. Law Enforcement Services – Impacts and Mitigation

The following impacts related to law enforcement that would result from implementation of the project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered law enforcement facilities? Or, would it result in the need for new or physically altered law enforcement facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any law enforcement services?

Impact 4.17.B – Cause Adverse Environmental Effects Due to The Need for Law Enforcement Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and industrial development, as well as the associated population, expected to occur within Riverside County over the next 50 years. In terms of changes to existing levels of service, however, localized development increases would incrementally create demand for additional law enforcement personnel and services in specific areas, such as the Elsinore and Palo Verde Valley Area Plans. None of these increases, however, would trigger the need for new or improved facilities in order to meet the additional demand. The additional personnel (officers, supervisors and support staff), equipment and vehicles necessary could readily be accommodated at existing facilities. Therefore, the project would not have a significant adverse effect on law enforcement services due to the need to construct new facilities. Moreover,

compliance with a variety of existing regulatory programs and General Plan policies would further prevent or reduce any impacts to law enforcement service associated with the project.

1. Analysis of Impact 4.17.B

New development would introduce additional people and property requiring law enforcement and emergency response services. This would result in additional enforcement calls and emergency responses from existing facilities by existing staff. When new development is located outside the normal radius for acceptable response time (defined by the Sheriff's Department as being typically within 5 minutes), people and property would be at increased risk due to delayed response. Law enforcement (Sheriff's Department) vehicles and equipment responding would experience increased wear and tear due to additional distances traveled. Increased travel times would also decrease the number of calls that can be handled during a shift. When demand is great enough in a given region, an additional Sheriff's station would be built. However, in areas where development remains sparse, response times would not be likely to drastically increase. Hence, future development in areas distant from existing or planned Sheriff's stations would be at greater risk of harm due to longer response times.

As shown in Table 4.17-J, above, existing standards indicate that full build out of the existing General Plan would accommodate a population of over 1.7 million people within unincorporated Riverside County. To protect and serve this population, the Sheriff's Department would require an estimated total of 2,600 sworn officers, plus 370 supervisors and a similar number of support staff, plus 870 patrol vehicles. On a plan-to-plan basis, the land use changes associated with GPA No. 960 would mean a reduction in the expected population of Riverside County at capacity of nearly 138,000 people (to roughly 1.6 million) and require roughly 200 fewer sworn officers. Supervisors, support staff, patrol vehicles, equipment and facility needs would be similarly reduced. Similarly, the need for law enforcement facilities, including Sheriff's stations and detention facility space (beds), would also be reduced (by about 6%) compared to those originally forecast. Accordingly, environmental impacts associated with construction of new or improved facilities would be avoided or postponed.

In terms of changes from baseline conditions at the Area Plan level, as shown in Table 4.17-I, GPA No. 960 would accommodate increased future development potential that would increase Riverside County's population by roughly 13,000 people, spread widely throughout Riverside County, but with concentrations in several areas plans, such as Elsinore and Mead. These increases would require roughly 20 additional sworn officers (an increase of less than 1%), three additional supervisors and a similar number of additional support staff, as well as 6-7 additional patrol vehicles. As discussed previously in Section 4.17.3-D, regional (area plan) analysis indicates that the increase would be negligible to non-existent for much of Riverside County and small (7 or fewer) for the few portions of Riverside County experiencing localized increases. Because these increases are less than 1% of existing levels, it is predicted that the future development accommodated by GPA No. 960 would not result in significant adverse impacts on acceptable service ratios or response times.

Where additional staff is needed, increases could be offset through reassignment of resources, for example from areas not growing as quickly. As local increases are small, the additional personnel (officers, supervisors and support staff), equipment and vehicles necessary could be readily accommodated at existing facilities. None of these staffing increases would trigger need for new or improved facilities in order to meet increased demands. Also these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of services as demand arises.

Hence, the proposed project, GPA No. 960, would not result in any substantial adverse physical impact on the environment resulting from the need to provide new or physically altered law enforcement facilities. Project impacts on law enforcement services would be less than significant. No project-specific mitigation is needed.

Existing regulatory programs, such as those outlined in existing EIR No. 441, as well as herein, for example, would also further reduce or avoid impacts to law enforcement services and further enhance public safety.

2. Regulatory Compliance for Impact 4.17.B

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, policies and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

a. Compliance with Existing County General Plan Policies

Land Use (LU) Policies LU 5.1, 5.2 and 10.1 from the existing Riverside County General Plan would further reduce the already insignificant project impacts on law enforcement services. See Section 4.17.3.B for full text of each of these policies.

b. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.15.2A, B, C and D were imposed to ensure that "communities and large private facilities provide private security" and set specific levels of services for law enforcement services to ensure impacts to law enforcement services are less than significant. Although the potential impacts of this project, GPA No. 960, are already less than significant, these measures were programmatic in nature and thus remain applicable to this project.

Existing Mitigation Measure 4.15.2A: The County of Riverside shall require as a part of the development review process, proponents of new businesses, recreational and commercial land uses such as shopping centers, health clubs, large hotels over 200 rooms, convention centers and commercial recreational activities to provide onsite security.

Existing Mitigation Measure 4.15.2B: The TLMA [Riverside County Transportation and Land Management Agency] shall inform the Riverside County Sheriff's Department of the existence of all new homeowner's associations within the county. The Riverside County Sheriff's Department shall coordinate with homeowner's associations to establish a Neighborhood Watch Program.

Existing Mitigation Measure 4.15.2C: Riverside County shall meet and maintain a goal of 1.5 sworn officers per 1,000 population, as recommended by the International City Managers' Association.

Existing Mitigation Measure 4.15.2D: The County [of Riverside] shall require the development applicant to pay the [Riverside] County Sheriff's established development mitigation fee prior to issuance of a certificate of occupancy on any structure as they are developed. The fees are for the acquisition and construction of public facilities.

F. Law Enforcement Services – Level of Significance After Mitigation

The analysis presented above indicates that future development accommodated by the proposed project, GPA No. 960, would have less than significant impacts on law enforcement services. In addition, compliance with the above-listed existing regulatory programs, standards, General Plan policies and existing Mitigation Measures

4.15.2A through 4.15.2D from EIR No. 441, would further prevent or reduce any impacts associated with the project.

4.17.4 Solid Waste Management

A. Solid Waste Management – Existing Environmental Setting

1. Solid Waste Facilities

The following section discusses the active landfills, transfer stations, diversion and recycling programs that currently serve the unincorporated area's solid waste disposal service needs. Figure 4.17.4 (Landfill Locations) shows the location of active landfills within unincorporated Riverside County. Table 4.17-K (Solid Waste Disposal Facilities in Riverside County), below, identifies the primary landfills within Riverside County, as well as those that are either inactive or open limited times.

The Riverside County Waste Management Department (RCWMD) is responsible for the efficient and effective landfill disposal of non-hazardous county waste. To accomplish this, the RCWMD operates six active landfills and administers a contract agreement for waste disposal at the private El Sobrante Landfill. The Department also oversees several transfer station leases, as well as a number of recycling and other special waste diversion programs. As all of the private haulers serving unincorporated Riverside County ultimately dispose of their waste to Riverside County-owned or contracted facilities, they are not further discussed separately here. Rather, the waste they transport to Riverside County landfills (plus El Sobrante) are included in the data discussed here.

All of the active landfills currently located in Riverside County are rated as Class III landfills according to Title 27 of the California Code of Regulations (CCR). Such landfills only accept nonhazardous, municipal solid wastes. Franchise solid waste collection companies are granted permits to collect commercial and residential waste throughout unincorporated Riverside County under Riverside County's general operating authority. These companies are regulated by the Riverside County Department of Environmental Health (RCDEH). In addition, County landfills accept wastes collected in incorporated cities. Within these cities, solid wastes are either collected by the city as a municipal service or are collected by private firms pursuant to a franchise agreement with the city. As part of its long-range planning and management activities, the RCWMD also ensures that Riverside County has a minimum of 15 years of capacity, at any time, for future landfill disposal.

The RCWMD reports that in the past, trash was disposed of in 'dumps' and either burned or buried in a hole. Over time, stringent regulations have been enacted to ensure that landfills are designed, operated, monitored and ultimately closed in a safe and sanitary manner to protect the communities in which they are located. After a landfill closes, the site is capped and continues to be monitored for landfill gas and groundwater quality for a minimum of 30 years. In this manner, in addition to active landfills, the RCWMD also maintains closed landfills and historic 'dump sites' within Riverside County. The RCWMD is involved in the closure and post-closure of 30 disposal sites, requiring in some cases construction, monitoring and/or maintenance activities. Closed landfills are discussed in Section 4.13 (Hazards and Hazardous Materials), rather than here, as they are no longer an active solid waste disposal resource.

All of Riverside County's sanitary landfills accept normal solid wastes, household refuse and yard trimmings as well as furniture, household appliances, televisions and computers, and other electronic wastes. The following are not allowed to be disposed of in any of Riverside County's sanitary landfills: hazardous wastes, household

hazardous wastes (i.e., cleaners, pesticides, pool chemicals, paints, aerosol cans, etc.), explosives or ammunition, untreated medical or infectious wastes (including sharps) or items containing asbestos (such as some floor tile and roofing materials).

Solid waste not dumped directly in a landfill is deposited temporarily in several transfer stations throughout Riverside County. Table 4.17-K identifies the transfer stations serving Riverside County. The region's transfer stations play a vital role in accommodating throughput to landfills, serving as collection and separation points for solid waste and recyclables. Transfer stations also help reduce traffic congestion and provide flexibility for hauling waste to distant landfills or processing plants outside the region when appropriate.

The County of Riverside also operates separate collection facilities for household hazardous wastes (HHW) and offers free one- and two-day HHW collection events throughout the year to provide residents with an environmentally safe way to properly dispose of or recycle their HHW. As defined by the State Health and Safety Code, HHW are hazardous wastes generated incidentally to the owning and maintaining of a residence. They do not include hazardous wastes generated by commercial, industrial or medical uses, even if such use occurs in a residence. Common types of HHW include certain paints, cleaners, stains and varnishes, car batteries, motor oil, lawn and pool chemicals and pesticides that are unused or leftover consumer products. Fluorescent bulbs, ballasts and fire extinguishers may also be disposed of as HHW. HHW also includes sharps and needles, if properly contained.

Improper disposal of these materials (such as in the regular trash or down a storm drain) can be hazardous to people and the environment, as well as potentially illegal. Items that are not accepted at the HHW facilities include: business, non-profit or out-of-county hazardous waste, explosives and ammunition, radioactive materials, asbestos, appliances, tires, containers larger than five gallons and compressed gas cylinders weighing over 40 pounds. For any of these types of wastes, special arrangements must be made for their disposal.

In addition to the HHW facilities, there are three regional ABOP facilities within the county. One operated by RCWMD; the other two by Burrtec, a private waste company. ABOP stands for "antifreeze, batteries, oil and paint," the four most common types of HHW. The facilities accept ABOP, which includes oil filters and paint, but only latex. They do not accept any other types of HHW. For automotive oil and filters, there are also Certified Used Oil Collection Centers throughout California that accept used vehicle oils of 5 gallons or less, often for free.

Hazardous waste that inadvertently enters Riverside County landfills is handled through a Load Check Program, which consists of random waste load inspections, temporary storage of any discovered/recovered hazardous waste at the Lamb Canyon's central accumulation facility and removal of the accumulated hazardous waste by a licensed hazardous waste hauler for recycling and disposal.

2. Existing Landfill Capacities and Waste Volumes

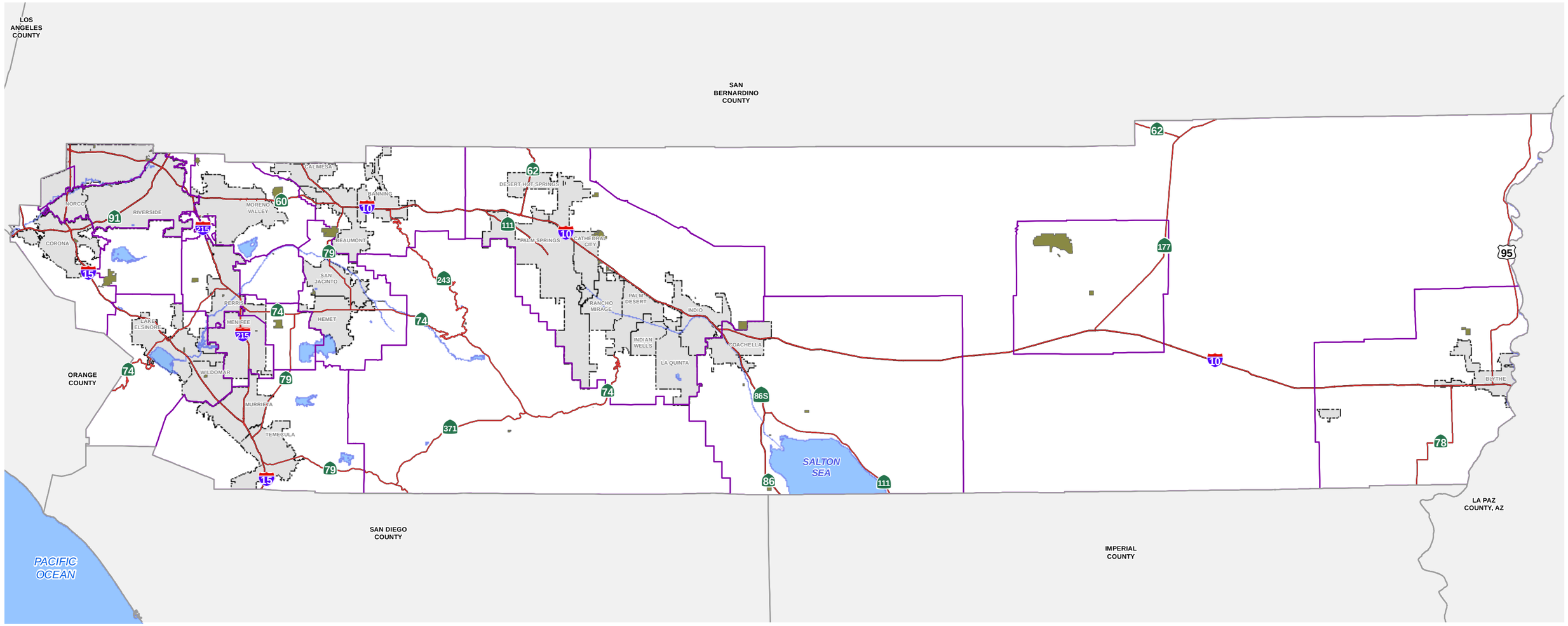
In general, waste originating from anywhere within Riverside County may be accepted for disposal at any of Riverside County's sites. In practice, to minimize truck traffic and vehicular emissions, each landfill has a service area, as follows:

Table 4.17-K: Solid Waste Disposal Facilities in Riverside County

Facility	Location	Hours [1]	Operator
Primary Riverside County Landfills			
Badlands Sanitary Landfill	31125 Ironwood Ave., Moreno Valley	M - Sa, 6 am - 4:30 pm	Riv. Co. Waste Management Dept.
Blythe Sanitary Landfill	1000 Midland Road, Blythe	M – F and 1st Sat of each month, 8 am - 4 pm	Riv. Co. Waste Management Dept.
Desert Center Sanitary Landfill	17991 Kaiser Road, Desert Center	2 days per year: 1st Thurs of Feb & Aug, 8 am - 4:30 pm	Riv. Co. Waste Management Dept.
El Sobrante Sanitary Landfill	10910 Dawson Canyon Road, Corona	M - Sat, 6 am - 6 pm	Privately owned: Waste Mngmnt Inc.
Lamb Canyon Sanitary Landfill	16411 Lamb Canyon Road, Beaumont	M - Sat, 6 am - 4:30 pm	Riv. Co. Waste Management Dept.
Mecca II Sanitary Landfill	95250 66th Avenue, Mecca	2 days per year: 2nd Sat of April & Oct, 8 am - 4:30 pm	Riv. Co. Waste Management Dept.
Oasis Sanitary Landfill	84-505 84th Avenue, Oasis	2 days per week: Wed & Sat, 8 am - 4:30 pm	Riv. Co. Waste Management Dept.
Transfer Stations / Collection Centers [2]			
Robert A. Nelson Transfer Station	1830 Agua Mansa Road, Riverside	M - F, 7 am - 6 pm; Sat, 7 am - 4:30 pm; Sun, 8 am - 3 pm	Burrtec
Anza Transfer Station	40329 Terwilliger Rd, Anza	Thurs - Mon, 8 am - 4:30 pm	Waste Mngmnt, Inc.
Coachella Transfer Station	87-011 Landfill Road, Coachella	M - F, 8 am - 5 pm; Sat, 8 am - 12:00 pm	Burrtec
Idyllwild Transfer Station	28100 Saunder Meadow Rd., Idyllwild	Thurs - Mon, 8 am - 4:30 pm	Waste Mngmnt, Inc.
Pinion Flats Transfer Station	Pinion Flats Road, Pinion Flats	Su - M, 9 am-1 pm; Th, 7-11 am; F, 1:30-5:30 pm; Sat, 8 am - 4 pm	Waste Mngmnt, Inc.
Edom Hill Transfer Station	70-100 Edom Hill Road, Cathedral City	M - Sat, 7:30 am – 5 pm; Sun, 1 pm - 5 pm	Burrtec
Moreno Valley Transfer Station	17700 Indian St., Moreno Vlly	M - F, 8 am - 5 pm	Waste Mngmnt, Inc.
Perris Transfer Station	1706 Goetz Road, Perris	M - F, 7 am - 6 pm	CR&R
Household Hazardous Waste (HHW) Collection Facilities			
Palm Springs Regional Permanent HHW Collection Facility	1100 Vella Road, Palm Springs	Oct. thru May: Sat, 9 am - 2 pm; June thru Sept: Sat, 7 am - Noon	Co. residents only. Accepts e-waste.
Lake Elsinore Regional Permanent HHW Collection Facility	521 N. Langstaff Street, Lake Elsinore	1st Sat of each month, except Dec., 9 am - 2 pm	Co. residents only. Accepts e-waste.
Agua Mansa Regional Permanent HHW Collection Facility	1780 Agua Mansa Road, Riverside	Sat., 9 am - 2 pm	Co. residents only. Accepts e-waste.
Regional ABOP Collection Facilities [3]			
Murrieta Area Regional ABOP Collection Facility	County Road Yard, 25315 Jefferson Ave., Murrieta	Sat., 9 am - 2 pm	Riv. Co. Waste Management Dept.
East Coachella Valley Area Regional ABOP Collection Fac.	Coachella Vlly Transfer Stn., 87-011A Landfill Rd, Coach.	M - F, 8 am - 5 pm; Sat, 8 am - Noon	Burrtec
North-West Coachella Valley Area Regional ABOP Coll. Fac.	Edom Hill Transf Stn, 70-100 Edom Hill Rd, Cathedral City	Sat., 8:30 am – 4:30 pm	Burrtec

Footnotes:
1. Note, any of these facilities may be closed without warning due to rain, snow, excessive winds or other hazardous conditions at Riverside County's discretion. Landfills are also closed on various holidays.
2. All privately owned or operated on Riverside County land. Operators listed in far-right column.
3. "ABOP" stands for "Antifreeze, Battery, Oil (and Filter) and Paint (Latex)."

Source: Riverside County Waste Management Department, www.rivcowm.org (agency website), 2011.



Data Source: Riverside County (2007)

Landfills

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.17.4

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December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

LANDFILL LOCATIONS

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Badlands: The local service area for the Badlands Landfill is generally considered to include the City of Moreno Valley and surrounding cities and unincorporated communities. The landfill accepts residual waste from the Robert A. Nelson Transfer Station/Materials Recovery Facility, which primarily serves the City of Riverside. As a regional disposal facility, the landfill is also permitted to receive waste from the cities and unincorporated communities of the Coachella Valley in the eastern portion of Riverside County.

Blythe: The Blythe Sanitary Landfill receives solid waste for disposal from the East Riverside County service area, generally considered to include the City of Blythe and the unincorporated communities of Chiriaco Summit, Colorado River Communities, Colorado River Indian Tribe, Desert Center, Eagle Mountain, Lake Tamarisk, Mesa Verde and Ripley.

Desert Center: The Desert Center Sanitary Landfill serves the communities of Eagle Mountain, Desert Center and Lake Tamarisk.

El Sobrante: The local service areas for the El Sobrante Landfill typically include cities/communities within southwestern Riverside County, as well as multiple jurisdictions within the counties of Los Angeles, Orange, San Bernardino and San Diego. Located near the center of the highly populated western third of Riverside County, according to Waste Management, Inc., the landfill's operator, it processes approximately 43% of Riverside County's annual waste.

Lamb Canyon: The local service areas for the Lamb Canyon Landfill typically includes the cities of Beaumont, Banning, San Jacinto and Hemet, and the unincorporated communities of Pine Cove, Cherry Valley, Cabazon, Idyllwild, Homeland, Romoland and Winchester. In addition, this landfill receives waste from the entire Coachella Valley through the Edom Hill and Coachella Valley Transfer Stations.

Mecca II: The Mecca II Sanitary Landfill services the Coachella Valley communities of Mecca, Oasis, North Shore and Thermal.

Oasis: The Oasis Sanitary Landfill services the Coachella Valley communities of Mecca, Oasis, North Shore and Thermal.

All RCWMD sites have the potential for expansion. Currently, the Lamb Canyon Landfill is in the design and permitting stage for its next expansion (Phase 3), which is estimated to provide capacity for additional 30-plus years beyond the estimated closure date of 2021. The closure dates listed for RCWMD sites are estimated dates and subject to change based on actual tonnage received and any future RCWMD re-permitting activities. The specific operational details, such as daily, yearly and lifetime capacities, intake volumes and estimated closure dates, are provided in Table 4.17-L (Active Landfills in Riverside County) for each active landfill serving Riverside County.

Table 4.17-L: Active Landfills in Riverside County

Active Landfills [1] (days per year open)	Permitted Daily Capacity (tons/day)	Current Design Capacity [4] (tons)	Year 2010 Average Intake (tons/day)	Year 2010 Total Intake (tons)	Year 2010 Remaining Capacity [5, 7] (tons)	Estimated Landfill Closure Date
Badlands (open 310 days/yr)	4,000	17,619,521	1,667	516,676	8,987,467	2024
Blythe (open 269 days/yr)	400	1,930,912	60	16,256	1,289,543	2047
Desert Center (open 2 days/yr)	60	58,516	17	34	18,045	2018

Active Landfills [1] (days per year open)	Permitted Daily Capacity (tons/day)	Current Design Capacity [4] (tons)	Year 2010 Average Intake (tons/day)	Year 2010 Total Intake (tons)	Year 2010 Remaining Capacity [5, 7] (tons)	Estimated Landfill Closure Date
El Sobrante [2] (open 311 days/yr)	5,000 [3]	52,320,000	2,201	680,086	N/A[2]	2045 [3]
Lamb Canyon (open 311 days/yr)	5,000	15,646,000	1,703	529,744	8,647,603	2021
Mecca II (open 2 days/yr)	400	229,427	1.5	3	1,332	2037
Oasis (open 103 days/yr)	400	247,411	14	1,407	69,275	2021
Totals	**88,051,787 tons**		**1,744,206 tons**		**19,013,265 tons** [2]	

Footnotes:
1. All listed active landfills, except for El Sobrante, are public facilities owned and operated by Riverside County.
2. El Sobrante Landfill is the only private landfill in the county and is owned and operated by USA Waste of California, a subsidiary of Waste Management, Inc. It is permitted to receive out-of-county waste. The data in the above table represent *only* the in-county portion of the landfill's waste capacity permitted and received that is readily available to the County of Riverside. The rest of the data should be obtained directly from the landfill operator.
3. Based on the current SWFP, El Sobrante is authorized to receive up to 70,000 tons per week, with a daily tonnage limit of 16,054 tons. It is projected to close in 2045. Pursuant to the Second Amendment to the Second Landfill Agreement between the County of Riverside and the landfill owner, a maximum of 52.32 million tons of the landfill's design capacity and 5,000 tons of the permitted daily capacity are reserved for in-county waste.
4. Current design capacity data as of June 30, 2010, based on the latest JTDs and 2010 GASB Report.
5. Year end remaining capacity estimates for Riverside County-owned landfills were derived from the estimates in the 2010 GASB and tonnage data from site info.
6. Estimated closure dates are projections published in the current permitting documents, i.e., RDSI/JTDs. These projections rely not only on landfill capacity design, but also on the economy, which affects waste generation and disposal quantities. Therefore, they are regularly re-evaluated internally for planning purposes.
7. This landfill data is subject to minor system-wide adjustments up to one year after reporting.

Source: Governmental Accounting Standard Board Report, 2010. Riverside County Waste Management Dept., 2011.

The 15-year projection of disposal capacity is prepared each year by the RCWMD as part of the annual reporting requirements for the Countywide Integrated Waste Management Plan (CIWMP). The most recent 15-year projection submitted to the State Integrated Waste Management Board by the RCWMD is shown in Table 4.17-M (Fifteen-Year Disposal Capacity Projections for Riverside County). Riverside County's projection is disposal-based, accounting for both growth in disposal needs or demand (4% per year) and diversion requirements.

Table 4.17-M: Fifteen-Year Disposal Capacity Projections for Riverside County

Year End	Countywide Disposal [1]	Countywide Remaining Capacity [1, 2]	Additional Capacity Needed [3]
2009	2,433,709	77,395,297	0
2010	2,462,691	74,932,606	0
2011	2,561,968	72,370,638	0
2012	2,665,251	69,705,387	0
2013	2,772,701	66,932,686	0
2014	2,884,485	64,048,201	0
2015	3,000,781	61,047,420	0
2016	3,121,768	57,925,652	0
2017	3,247,638	54,678,014	0
2018	3,378,586	51,299,428	0
2019	3,514,818	47,784,610	0
2020	3,656,548	44,128,063	0
2021	3,054,895	40,370,193	0
2022	3,146,167	36,507,762	0
2023	3,894,403	32,613,360	0
2024	4,051,734	28,561,626	0

Footnotes:
1. Disposal and Remaining Capacity figures for 2009 are measured values and those for the rest of the projection years are growth estimates. Countywide remaining capacity was based on 2009 landfill data reported to the State (CalRecycle) in accordance with GASB standards. Disposal figures for 2009 do not include out-of-county tonnage received at El Sobrante Landfill.

2. A Second Amendment to the Second Lease Agreement for the El Sobrante Landfill operation became effective with the issuance of a revised Solid Waste Facility Permit in Sept. 2009, whereby approximately 5 million tons was added to the county disposal capacity reserve. The added capacity is due to airspace (volume) gained from effective refuse compaction, not from literal expansion beyond current permitted boundaries.
3. The Riverside County waste disposal system, with the added capacity at the El Sobrante Landfill in late 2009 and at current disposal rates, would be able to meet disposal needs until mid-2030. Moreover, this countywide capacity reserve would be further expanded by an additional 614,000 tons per year, should the Eagle Mountain Landfill become operative. Most importantly, significant expansion potential exists beyond current refuse disposal footprints at the Badlands and Lamb Canyon Landfills.

Source: Riverside County Waste Management Dept., 2009 Annual Report, Appendix E-1, July 2010.

3. Recycling

Commercial and residential municipal solid waste (MSW) is delivered to Riverside County landfills by both waste hauling companies and self-haulers. Within the unincorporated portion of Riverside County, the waste-hauling companies operate under franchise agreements with the RCDEH. These agreements require haulers to implement residential curbside recycling programs and some commercial recycling. Within the cities, solid waste is either collected by the city itself or by a waste hauler under a franchise agreement with the city. The cities or their haulers carry out similar source reduction and recycling programs. In its 2009 Annual Report to the State of California, the RCWMD reported that in 2008, hauler programs diverted over 18,000 tons of recyclable materials and Riverside County franchise haulers also collected nearly 30,000 tons of curbside green waste. To conserve landfill capacity and promote recycling, the RCWMD also operates several recycling programs at the Riverside County landfills. Metals, appliances and tires are some of the materials recycled through these programs. According to the RCWMD, in 2008 County landfills diverted nearly 1,500 tons of metal from appliances and other sources for recycling. Wood wastes are diverted to green/woody waste recyclers for processing into mulch and fuel. At the Colmac energy facility in the Coachella Valley, biomass is recycled as fuel to generate electricity (see Section 4.10 (Energy Resources) for more information on this program). In 2008, nearly 116,400 tons of wood waste was processed into fuel. In addition, clean green waste that has been ground by local green waste/woody waste recyclers is used for alternative daily cover (instead of soil) at landfills, with over 36,000 tons used at Riverside County landfills in 2008. The RCWMD also operates a construction and demolition waste diversion program to recycle and reuse materials such as concrete and asphalt. Of an estimated 920 tons of construction and demolition waste generated, 620 tons were diverted in 2008. A total of 520 tons of tires were also diverted from landfills. Through the HHW and ABOP efforts outlined previously, the County of Riverside kept nearly 650 tons of these wastes out of its sanitary landfills.

B. Policies and Regulations Addressing Solid Waste Management

1. Federal Regulations

Resource Conservation and Recovery Act (RCRA): This law was enacted in 1976 and is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. The U.S. Environmental Protection Agency (US EPA) oversees waste management regulation pursuant to Title 40 of the Code of Federal Regulations. Under RCRA, however, states are authorized to carry out many of the functions of the federal law through their own hazardous waste programs and laws, as long as they are at least as stringent (or more so) than the federal regulations. Thus, CalRecycle manages the State of California's solid waste and hazardous materials programs pursuant to US EPA approval.

2. State Regulations

CalRecycle: This is the term the State of California uses for its Department of Resources Recycling and Recovery, formerly known as the California Integrated Waste Management Board (CIWMB). This state agency

performs a variety of regulatory functions pursuant to CCR Title 27 and other regulations. Among other things, CalRecycle set minimum standards for the handling and disposal of solid waste designed to protect public health and safety, as well as the environment. (See CCR Section 20050, for example). It is also the lead agency for implementing the State of California municipal solid waste program deemed adequate by the US EPA for compliance with RCRA.

California Integrated Waste Management Act (IWMA), AB 939: This act, Assembly Bill 939 (AB 939), was passed by the State Legislature in 1989 to reduce dependence on landfills for the disposal of solid waste and to ensure an effective and coordinated system for the safe management of all solid waste generated within California. With its passage, solid waste management practices were redefined to require California State's cities and counties to divert disposal of solid waste by 50% by the year 2000. It also required local governments to prepare and implement plans to improve waste resource management by integrating management principles that place importance on first reducing solid waste through source reduction, reuse, recycling and composting before disposal at environmentally safe landfills or via transformation (e.g., regulated incineration of solid waste materials). These plans must also be updated every five years.

Mandatory Diversion and Recycling, AB 341: Approved in 2011, this act amended the California Public Resources Code (Section 42649 *et seq.*) to address solid waste diversion (i.e., recycling) targets to decrease the amount of wastes going to landfills and thus extend their usable lives. AB 341 requires cities and counties, including Riverside County, to include source reduction, recycling and composting in their integrated waste management plans (IWMP). In addition, under AB 341 counties were required to "divert 50% of all solid waste from landfill disposal or transformation [e.g., incineration] by January 1, 2000, through source reduction, recycling and composting activities." By 2020, the target rises to "not less than 75% of solid waste." The RCWMD is responsible for implementing AB 341 in the unincorporated portions of Riverside County. The annual progress report on Riverside County's status towards attaining AB 341 requirements is also prepared by the RCWMD.

In addition to the above, the act also requires the County of Riverside (i.e., the RCWMD) to implement a commercial solid waste recycling program meeting specific elements outlined in the law. It sets new commercial solid waste recycling requirements. And, it also requires "commercial or public entities" that "generate more than 4 cubic yards of commercial solid waste per week" and "multifamily residential dwelling[s] of five units or more" to source separate recyclable materials and arrange for recycling services starting July 1, 2012.

3. County Regulations

As a variety of state and federal regulations exist to ensure that landfill operations minimize impacts to public health and safety, as well as the environment, an important part of the RCWMD's mission is to apply sound environmental practices to ensure compliance with these regulations. The RCWMD manages and oversees compliance with a variety of permits necessary for the operation of their active landfills in Riverside County. These include: solid waste facilities permits, waste discharge requirements, stormwater discharge permits and permits to construct and operate gas management systems and leachate collection systems. These permits are issued and enforced by multiple regulatory agencies, including CalRecycle, the South Coast Air Quality Management District (SCAQMD, which enforces air quality regulations) and the California Regional Water Quality Control Boards (which enforce water quality regulations and stormwater runoff controls). The RCDEH is the local enforcement agency (LEA) for CalRecycle. CCR Title 27 and SCAQMD Rule 1150.1 are the main regulations. In some cases, certain projects may also fall under the jurisdiction of the U.S. Army Corps of Engineers (for waters of the US), the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife (for protected plants, animals or habitats). The RCWMD also evaluates all projects for compliance with CEQA to ensure that any project that could have an impact on the environment is fully analyzed and that any significant impacts are mitigated to the fullest extent possible.

Countywide Integrated Waste Management Plan: The Countywide Integrated Waste Management Plan (CIWMP) was prepared in accordance with the California Integrated Waste Management Act of 1989, Chapter 1095 (AB 939), and is updated every five years. The CIWMP outlines and codifies the goals, policies and programs the County of Riverside and its cities are implementing to create an integrated and cost-effective waste management system that complies with the provisions of AB 939 and its diversion mandates. The CIWMP's components include the Countywide Summary Plan, the Countywide Siting Element, the Source Reduction and Recycling Element, the Household Hazardous Waste Element and Non-Disposal Facility Element. Each of these Elements address plans for both Riverside County and each of its cities. The Riverside Countywide Integrated Waste Management Plan was approved by the California Integrated Waste Management Board in September of 1996 and has subsequently been updated at five-year intervals as required by law.

The RCWMD is specifically charged with the responsibility of: 1) implementing programs that adhere to the goals, policies and objectives outlined in Riverside County's Source Reduction and Recycling Element (SRRE) to ensure that unincorporated Riverside County achieves 50% diversion of solid waste from landfill disposal; 2) implementing programs that adhere to the goals, policies and objectives outlined in Riverside County's Household Hazardous Waste Element to reduce the amount of HHW disposed within landfills; 3) continuing to meet the solid waste disposal needs of all Riverside County residents into the future; and 4) maintaining and updating the CIWMP and reporting to the CIWMB on Riverside County's progress in complying with AB 939.

The Countywide Siting Element addresses the need for Riverside County and its cities to identify, plan for and, eventually implement, adequate sites and space for the waste facilities needed over time. The Siting Element serves as a policy manual that outlines various strategies for meeting the disposal needs of all Riverside County residents and enabling the County of Riverside to provide a minimum of 15 years of disposal capacity at all times.

The RCWMD prepares an Annual Report each August that is submitted to CalRecycle. The Annual Report serves as a basis for determining if the Siting Element and Summary Plan should be revised to include additional disposal capacity, reflect new or changed local and regional solid waste management issues, or include new or changed goals and objectives. The Annual Report is reviewed by the State of California to determine if the County of Riverside is making progress toward meeting its goals and objectives. The CIWMP is also subject to a five-year review to assess if revision is necessary and to determine that Riverside County's waste management practices remain consistent with the hierarchy of waste management practices.

RCWMD Design Guidelines for Refuse and Recyclables Collection and Loading Areas: Part of the RCMWD Planning Section's review of land-use/development projects is to ensure adequate space is provided for collection of recyclables and that solid waste disposal capacity of Riverside County facilities is not overburdened. As such, most new development projects are required to provide refuse/recycling collection and loading areas, as well as submit a Waste Recycling Plan. Specifically, the County of Riverside requires recycling storage/collection areas provided within new commercial, industrial and multi-family developments. Development near or adjacent to a RCWMD facility may be subject to additional requirements or restrictions. These projects are addressed on a case-by-case basis. The Design Guidelines are intended to assist project proponents in identifying space and other design considerations for refuse and recyclables collection and loading areas per the California Solid Waste Reuse and Recycling Act of 1991. Compliance with the Guidelines is necessary for obtaining RCWMD clearance in order to obtain a building permit within unincorporated Riverside County. In addition, projects that have the potential to generate construction or demolition (C&D) waste are required to complete a County of Riverside Waste Recycling Plan (WRP) to identify the estimated quantity and location of recycling for C&D waste resulting from construction. As part of the WRP, a waste recycling report is required upon completion of project construction demonstrating the actual quantity of C&D waste recycled.

4. Existing Riverside County General Plan Policies

Although the General Plan does not include a Public Facilities Element, it does include a General Plan policy from the Land Use Element, LU 5.2, which addresses impacts related to solid waste generation, disposal and management.

Policy LU 5.2: Monitor the capacities of landfills in coordination with service providers, outside agencies and jurisdictions to ensure that projected growth does not exceed acceptable levels of service for landfills.

5. Proposed New or Revised Riverside County General Plan Policies

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and *child* day care centers ~~(i.e. infant, toddlers, preschool and school age children)~~, transportation systems, and fire/police/medical services.

Policy LU *31.2* (Previously 25.2): Protect major public facilities, such as landfill and solid waste *processing* ~~disposal~~ sites and airports, from the encroachment of incompatible uses.

C. Thresholds of Significance for Solid Waste Management

The proposed project would result in a significant impact on solid waste management if it would:

1. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

2. Impede or prevent compliance with federal, state or local statutes and regulations related to solid wastes, including the Countywide Integrated Waste Management Plan (CIWMP).

D. Effect of GPA No. 960 on the General Plan and on Solid Waste Management

The proposed update to the General Plan pursuant to GPA No. 960 includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development consistent with GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. The resultant growth population (from new residential uses) and jobs and economic activity (from commercial, industrial and institutional uses) would result in a corresponding increase the amount of solid waste generated by these various uses, both during their construction (short-term) and their operation (long-term). The disposal of this additional waste would incrementally increase the wastes going into existing landfills, potentially hastening the end of their usable lives and contributing to the eventual need for new or expanded landfill facilities.

The following tables summarize projected existing and future solid waste generation rates based on baseline (existing) conditions and various build out projections. For the purposes of effects on landfills, changes proposed by the project are relevant only if they would result in an ultimate increase in waste-generating activities. Changes that do not adversely affect (increase or re-allocate) populations or land uses within the unincorporated Riverside County area are not discussed further here. For a summary of these areas and the rationale for their omission, see Section 4.17.1.

Solid waste generation rates estimate the amount of waste created by residences and businesses over a certain amount of time (day, year, etc.). Waste generation includes all materials discarded, whether or not they are later recycled or disposed of in a landfill. Waste generation rates for residential and commercial activities can be used to estimate the impact of new developments on the local waste stream. In this way, they are useful in providing a general level of information for planning purposes and estimating potential effects. It should be noted that these tables and rates do *not* take into account any recycling, reduction or diversion. That is, the reductions (potentially upwards of 50%-75%) associated with compliance with AB 341 are not shown. However, in an abundance of caution, these calculations do not apply source reductions.

Table 4.17-N (Theoretical Solid Waste Generation for Existing and Build out Condition) provides a summary of the theoretical needs for landfills (as indicated by solid waste generation) within Riverside County according to the theoretical estimate of need associated with existing land uses, as well as that for build out of the known spatial components or locations addressed by GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). It should be noted that the following projections are based on the assumption that *all* of the changes proposed under GPA No. 960 actually result in future development and fully build out (as part of overall implementation of the County General Plan). That is, it is a theoretical, worst-case scenario, that likely over-states the actual development potential in the real world *and* does not take any source reduction programs into account. The *actual* future development of the individual parcels and areas affected by GPA No. 960 proposals, as with build out of the rest of the General Plan, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities.

For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on solid waste management cannot be delineated at present since they are land use-dependent. For the sake of comparison, however, Table 4.17-P (Comparison of Theoretical Solid Waste Generation at Build Out) shows the theoretical waste disposal needs at build out for both the current General Plan and the General Plan as it would be if amended pursuant to proposed GPA No. 960.

Accordingly, Table 4.17-N shows the annual tons of solid waste estimated to be generated for the existing (baseline) level of development currently present within the portions of Riverside County directly affected by proposed land use-related changes and for the land use of those same parcels of land as they would develop pursuant to the proposed project; in essence, with and without the proposed project. Because much of the area addressed by GPA No. 960 includes regions for which future development potential is being eliminated (e.g., deletion of Rural Village Study Areas), the first (Table 4.17-M) scenario includes many areas where the build out scenario under the updated General Plan is the same as that which would occur under the existing (current General Plan's) mapped LUDs. As such, these areas do *not* represent new areas of growth attributable to the project, GPA No. 960, but rather simply reflect the anticipated build out of the Riverside County General Plan that would occur with or without the project.

Table 4.17-N: Theoretical Solid Waste Generation for Existing and Build Out Conditions

Land Use[1]	Generation Factors	Theoretical Solid Waste Generation (tons/year)		
		Existing Uses of Land[2]	General Plan Build Out With GPA No. 960[3]	Difference
Residential	0.41 tons per dwelling unit	5,850 du **2,400 tons/year**	16,570 du **6,790 tons/year**	+ 10,720 du **+ 4,390 tons/year**
Commercial[4]	2.4 tons per 1,000 sq. feet	579.6 ksf **1,390 tons/year**	1,413.0 ksf **9,480 tons/year**	+ 833.4 ksf **+ 8,090 tons/year**
Industrial[5]	10.8 tons per 1,000 sq. feet	2,108.0 ksf **22,770 tons/year**	6,295.2 ksf **40,600 tons/year**	+ 4,187.2 ksf **+ 17,840 tons/year**
Total Area	**111,440 acres**	***26,560 tons/year***	***56,870 tons/year***	***+ 30,320 tons/year***

Footnotes:
1. Theoretical solid waste generation for the indicated level of development. All results rounded after analysis to the nearest 10 for dwelling units (du) and tons, and the nearest 100 for thousand square footage (ksf).
2. Theoretical need attributed solely to the portion of Riverside County associated with the lands proposed for spatial changes as part of GPA No. 960. See Section 4.1 for more details on how projections were derived.
3. Theoretical need associated with build out of the General Plan (including as updated pursuant to GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and (for existing uses) ranches.

Source: Riverside County Planning Dept., Project application data and analysis, 2010. Riverside County, EIR No. 441, 2003, for service standards.

Thus, in order to focus on the areas where the proposed project would actually result in *new* development potential (i.e., potential impacts), a second scenario was developed. As shown in Table 4.17-O (Theoretical Solid Waste Generation for New Development Potential Areas), this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels where an LUD was changed (except those being assigned to OS-CH for acquisition as open space conservation pursuant to the WRC-MSHCP; these parcels would be removed from development potential).

Lastly, the third table, Table 4.17-P, shows a "plan-to-plan" comparison between the build out conditions of the General Plan as it currently exists and then as it would be if GPA No. 960 were approved and fully implemented. This third table indicates the relative effects of the project on long-range planning, rather than environmental impacts per se, and is provided for informational purposes and to allow comparison between build out outcomes.

On a comparative plan-to-plan basis, as shown in Table 4.17-P, the proposed project would result in a net decrease of roughly 441,800 tons in the overall amount of solid waste generated annually in unincorporated Riverside County. It can reasonably be projected that services related to the disposal of this amount of solid waste, such as transfer stations, HHW and ABOP facilities, etc., would be similarly decreased in proportion to the overall growth accommodated by the changes of the proposed project.

Table 4.17-O: Theoretical Solid Waste Generation for New Development Potential Areas

		Theoretical Solid Waste Generation (tons/year)		
Land Use[1]	**Generation Factors**	**Existing Uses of Land[2]**	**General Plan Build Out With GPA No. 960[3]**	**Difference**
Residential	0.41 tons per dwelling unit	2,060 du **850 tons/year**	6,350 du **2,600 tons/year**	+ 4,290 du **+ 1,750 tons/year**
Commercial[4]	2.4 tons per 1,000 sq. feet	254.3 ksf **610 tons/year**	855.5 ksf **8,140 tons/year**	+ 601.2 ksf **+ 7,530 tons/year**
Industrial[5]	10.8 tons per 1,000 sq. feet	1,478.2 ksf **15,970 tons/year**	5,789.3 ksf **24,760 tons/year**	+ 4,311.1 ksf **+ 8,790 tons/year**
Total Area	**10,690 acres**	***17,420 tons/year***	***35,500 tons/year***	***+ 18,070 tons/year[6]***

Footnotes:
1. Theoretical solid waste generation for the indicated level of development. All results rounded after analysis to the nearest 10 for dwelling units (du) and tons, and the nearest 100 for thousand square footage (ksf).
2. Theoretical estimates for the land uses associated with the 10,690-acre area of known spatial project changes that would increase development intensity or density or change an LUD within the Community Development Foundation. See Section 4.1 for more information on how land use estimates were calculated.
3. Need for build out of the General Plan (including as updated pursuant to GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and (for existing uses) ranches.
6. Per the RCWMD Jurisdictional Landfill Tonnage Report for First Quarter 2012 (dated July 12, 2012), the total scaled solid waste disposed of at all Riverside County landfills (plus El Sobrante) was 753,331.43 tons, yielding an annual Riverside County disposal total of 3,013,325.7 tons per year. For unincorporated Riverside County, tonnage disposed was 17,259.56 for Badlands, 1,593.08 for Blythe, 28,469.77 for El Sobrante and 9,458.55 tons for Lamb Canyon landfill.

Source: Riverside County Planning Dept., Project application data and analysis, 2010. Riverside County, EIR No. 441, 2003, for service standards.

In terms of actual land use and changes to baseline conditions, future development accommodated by the proposed General Plan changes would increase the amount of solid waste generated annually by approximately 30,320 tons net, as shown in Table 4.17-N. This additional waste would be generated at numerous individual locations throughout Riverside County, however, not localized to any single landfill service area or hauler

franchise area. It would also increase in small increments across a roughly 50-year build out period. As such, impacts to any single landfill or waste facility would be negligible and much of this growth is already planned for in the existing General Plan and was analyzed under EIR No. 441, which was certified for the 2003 RCIP General Plan.

As mentioned above, Table 4.17-O isolates just the areas of growth associated with GPA No. 960 that would potentially be greater than that originally planned under the existing General Plan. This highlights the changes that differ from the background levels already planned for under the existing General Plan. Once these areas are removed, the resultant scenario indicates that the future new development potential arising from GPA No. 960 would result in the generation of a total of roughly 18,070 tons of solid waste per year (before any recycling or diversion programs). Because effects to Riverside County landfills (and El Sobrante Landfill) are dependent upon geography, this solid waste generation data was further broken down by Area Plan.

The analysis indicated that the bulk of the additional tonnage would come from areas of western Riverside County, particularly from within the Elsinore Area Plan (12,500 tons), Lakeview/Nuevo Area Plan (6,100 tons) and Mead Area Plan (4,100 tons), as a result of the new Rural Village Land Use Overlays associated with Good Hope and Meadowbrook, plus the revisions to the Lake Elsinore Environs (Lakeland Village) Policy Area. These areas are within the El Sobrante Landfill's service area and account for roughly 80% of all of the new waste generated. The roughly 22,500 tons, however, is a small fraction (1%) of the roughly 1,930,000 tons collected annually (as projected from the first quarter 2012 El Sobrante disposal totals per the Jurisdictional Landfill Tonnage Report issued by the RCWMD, dated July 12, 2012) and is not expected to be until full build out of Riverside County (roughly 50 years hence).

Table 4.17-P: Comparison of Theoretical Solid Waste Generation at Build Out

Land Use	Current General Plan		General Plan as Amended by GPA No. 960		
	Build Out Total[1]	Tons/Year Generated[2]	Build Out Total	Tons/Year Generated[2]	Difference (Tons/Year)
Residential	534,100 du	**218,900**	498,000 du	**204,200**	***- 14,800***
Commercial[3]	68,059 ksf	**163,300**	57,919 ksf	**139,000**	***- 24,300***
Industrial[4]	361,013 ksf	**3,898,900**	323,728 ksf	**3,496,300**	***- 402,700***
TOTALS	**4,013,400 acres**	***4,281,300 tons***	**4,011,600 acres**	***3,839,400 tons***	***- 441,800 tons***

Footnotes:
1. All results rounded to the nearest 100 for dwelling units (du) and nearest 1,000 for thousand square footage (ksf).
2. The theoretical total tonnage of solid waste estimated to be generated annually at build out of the County General Plan (current and as proposed for amendment). Rounded to nearest 100 tons after analysis.
3 Includes land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
4 Includes the following land uses: light industrial and heavy industrial.

Source: Riverside County Planning Dept., Project application data and analysis, 2010. Riverside County, EIR No. 441, 2003, for service standards.

Roughly 2,600 tons would be generated out of the Palo Verde Valley Area Plan region, most likely to be disposed of at the Blythe landfill and roughly 1,400 tons from the Western Coachella Valley Area Plan would go to the Lamb Canyon landfill. The remaining Area Plans would contribute insignificant amounts of waste (115 tons for the REMAP area, 65 tons for the San Jacinto Valley Area Plan and 3-30 tons for six other areas). Analysis of the first quarter landfill disposal patterns for unincorporated Riverside County indicate that roughly 64% of this waste typically goes to the El Sobrante landfill, 18% to the Badlands landfill and 17% to Lamb Canyon, with the remaining 1% going to the Blythe, Desert Center and Oasis landfills. It is assumed that these percentages and distributions would continue for the expected life spans of Riverside County's active landfills. Again, these totals also do not account for any source reductions or diversions. If full AB 341 compliance is achieved, these amounts would be reduced by 75% by 2020 and thereafter as well.

E. Solid Waste Management – Impacts and Mitigation

The following impacts related to solid waste management that would result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

1. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact 4.17.C-1 – Adversely Affect or Exceed the Permitted Capacity of a Landfill: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses, both residential and non-residential in localized areas throughout unincorporated Riverside County. These increases, however, are to some extent offset by reductions anticipated from other proposed changes of GPA No. 960 (in particular decreases in future commercial-retail and light industrial uses). Overall, future development resulting from the project would increase the annual amount of solid waste requiring disposal in sanitary landfills by roughly 9,000 tons per year over the next 50 years (conservatively assuming only achievement of the current state-mandated 50% diversion rate, but not the 75% by 2020 reduction rate. See Table 4.17-O). Compared to existing and projected capacities at Riverside County landfills, this amount would incrementally increase the county fill rate by roughly 0.6% overall (even conservatively assuming no additional diversion or recycling reductions). In terms of actual changes from baseline conditions, this 0.6% increase due to project-related waste generation would occur in small increments throughout Riverside County over a roughly 50-year period. For these reasons, these amounts represent insignificant incremental increases, and it is projected that sufficient landfill capacity would exist to accommodate the project's future solid waste disposal needs. Accordingly, the project's impact on landfill capacity would be less than significant. Moreover, regulatory compliance, particularly mandatory recycling and diversion programs, as outlined below, would also further reduce the already insignificant impact.

a. Analysis of Impact 4.17.C-1

The proposed update to the General Plan (pursuant to General Plan Amendment No. 960) includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development consistent with GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. The resultant growth population (from new residential uses) and jobs and economic activity (from commercial, industrial and institutional uses) would result in a corresponding increase in the amount of solid waste generated by these various uses. The disposal of this additional waste would incrementally increase the wastes going into existing landfills, potentially hastening the end of their usable lives, and contribute to the need for new or expanded sanitary landfill facilities.

On a comparative plan-to-plan basis, as shown in Table 4.17-P, the proposed project would result in a net decrease of nearly 442,000 tons in the overall amount of solid waste generated annually in unincorporated Riverside County. It can be reasonably projected that services related to the disposal of this amount of solid waste, such as transfer stations, HHW and ABOP facilities, etc., would be similarly decreased in proportion to the overall growth accommodated by the proposed changes. Since the increase associated with the proposed project is *less* than that which would have been projected under the existing General Plan without the project, over the long run the GPA No. 960 can be said to have a net positive effect on Riverside County landfill capacity in that it would serve to decrease the amount of solid waste generated throughout Riverside County over time, reducing the capacity needed in existing landfills, delaying the construction of new landfills and/or reducing the size of new landfills needing to be constructed. For these reasons, the need for additional, new or physically altered solid

waste disposal services or facilities would similarly be reduced. These reduced rates would be reflected in any of several ways, including through a reduction in the capacity needed within existing landfills; by delaying the need for construction of new landfills; or, by reducing the size of new landfills constructed.

In terms of actual changes from baseline conditions, future development consistent with the proposed project could increase the amount of solid waste generated annually by approximately 30,320 tons net, as shown in Table 4.17-N. This additional waste would be generated numerous individual locations throughout Riverside County, however, not localized to any single landfill service area or hauler franchise area. It would also increase in small increments across a roughly 50-year build out period. As such, impacts to any single landfill or waste facility would be negligible.

As shown in previously referenced Table 4.17-L, the total solid waste intake for the year 2010 was 1,744,206 tons. The remaining capacity at the end of that year was 19,013,265 tons. Table 14.17-M projects Riverside County's generation of solid waste through to the year 2024, showing a remaining capacity estimated at 28,561,626 tons. When compared against this total, solid waste generation directly attributable to GPA No. 960 (18,070 tons as per Table 4.17-O) is 0.06% of the total waste generated in Riverside County annually. In addition, since AB 939 mandates the reduction of waste disposal in landfills with a 50% diversion rate, when this is taken into account the amount of solid waste resulting from the project actually reaching sanitary landfill disposal would drop to roughly 9,000 tons. (And, per AB 341, a 75% diversion rate is to be achieved by 2020.) On a relative basis, both fractional project increases are negligible. Accordingly, the project's impact on landfill capacity would be less than significant and no project-specific mitigation is required. Regulatory compliance, as outlined below, would also further reduce the less-than-significant impact.

b. Regulatory Compliance for Impact 4.17.C-1

The above analysis indicates this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following regulations, programs, policies and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

(1) Compliance With Federal, State and County Regulations

Compliance with the following state, federal and county regulations would further prevent already insignificant impacts to solid waste disposal facilities.

Compliance with State of California and federal RCRA requirements would ensure that the County of Riverside continues to implement programs for the proper identification and collection/diversion of hazardous wastes away from sanitary landfills. Continued implementation of the myriad of plans, policies and programs contained in the Countywide Integrated Waste Management Plan would ensure that the County continues to operate its landfills in a safe manner to protect the health and welfare of both its residents and the environment. The Plan would also ensure that appropriate long-range planning and implementation of the actions needed to assure continued solid waste disposal facilities with adequate capacities remain available within Riverside County.

In regards to State of California reduction mandates, in particular the AB 341 target of reducing "not less than 75%" of solid waste from landfill disposal by 2020, the County of Riverside (RCWMD) has implemented a number of measures. In terms of new (future) impacts arising from new development approved within unincorporated Riverside County, key compliance is through mandatory measures required as standard Conditions of Approval for new projects. Standard measures require recycling facilities (enclosures, etc.) be provided for all new commercial and industrial developments. Further, all plot plans are required to comply with the RCWMD's

Design Guidelines for Recyclables Collections and Loading Areas, as well as submit a Waste Recycling Plan (WRP) for each building proposed. To verify AB 341 compliance for the recycling of construction and demolition (C&D) materials, RCWD requires accurate records for both C&D recycling, as well as solid waste disposal, be kept. According to RCWD procedures, County occupancy permits will not be cleared for issuance unless the required evidence (e.g., receipts) demonstrating appropriate WRP compliance is presented to the RCWMD.

For residential, commercial and industrial developments, as well as public facilities, other Conditions of Approval are added through issuance of a "clearance letter" by RCWMD. The clearance letter outlines the additional project-specific requirements to ensure that individual project developers provide adequate areas for collecting and loading recyclable materials, such as "paper products, glass and green wastes." No building permits will be issued unless/until RCWD verifies compliance with the clearance letter conditions.

(2) Compliance with Existing County General Plan Policies

Existing Policy LU 5.2 from the Land Use Element of the Riverside County General Plan would further reduce the already insignificant impact to solid waste disposal facilities. See Section 4.17.4.B for full text of this policy.

(3) Compliance with Proposed New or Revised General Plan Policies

Revised Policies LU 5.1 and 31.2 of the Riverside County General Plan would further reduce the already insignificant impact to solid waste disposal facilities. See Section 4.17.4.B for full policy texts.

(4) Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.15.3A through 4.15.3F were imposed to reduce impacts to solid waste facilities to less than significant. Although the potential impacts of GPA No. 960 would already be less than significant, these EIR mitigation measures are programmatic in nature and thus remain applicable to this project (even though some are now outdated).

Existing Mitigation Measure 4.15.3A: Riverside County shall work with its franchise hauling companies to expand curbside and commercial recycling services throughout the unincorporated area of the County [of Riverside].

Existing Mitigation Measure 4.15.3B: Riverside County shall follow State regulations in implementing the goals, policies and programs identified in the Riverside County[wide] Integrated Waste Management Plan in order to achieve and maintain a 50% reduction in solid waste disposal through source reduction, reuse, recycling and composting.

Existing Mitigation Measure 4.15.3.C: In accordance with State regulations, Riverside County shall prepare an annual report of progress for the CIWMB to determine [Riverside] County's progress toward meeting its diversion goals and objectives, to project [Riverside] County's waste disposal needs and to determine if any of the elements that comprise the Riverside CIWMP require revision to include additional disposal capacity, reflect new or changed local and regional solid waste management issues, or reflect new or changed goals and objectives.

Existing Mitigation Measure 4.15.3D: In accordance with CCR Section 18788, Riverside County shall review the Riverside CIWMP every five years to determine if [Riverside] County's waste management practices remain consistent with waste diversion goals and objectives and to assess if revision is required.

Existing Mitigation Measure 4.15.3E: The County [of Riverside] shall require all future commercial, industrial and multifamily residential development to provide adequate areas for the collection and loading of recyclable materials (i.e., paper products, glass and other recyclables) in compliance with the State Model Ordinance, implemented on September 1, 1994, in accordance with AB 1327, Chapter 18, California Solid Waste Reuse and Recycling Access Act of 1991.

Existing Mitigation Measure 4.15.3F: The County [of Riverside] shall require all development projects to coordinate with appropriate [Riverside] County departments and/or agencies to ensure that there is adequate waste disposal capacity to meet the waste disposal requirements of the project, and the County [of Riverside] shall recommend that all development projects incorporate measures to promote waste reduction, reuse, recycling and composting.

c. Finding on Significance for Impact 4.17.C-1

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on solid waste disposal capacity within Riverside County. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies, as well as existing Mitigation Measures 4.15.3A through 4.15.3F from EIR No. 441, would further reduce or avoid the insignificant impacts associated with the project.

2. Would the project impede or prevent compliance with federal, state and local statutes and regulations related to solid wastes, including the Countywide Integrated Waste Management Plan (CIWMP)?

Impact 4.17.C-2 – Cause Inconsistencies With Applicable Statutes and Regulations Related to Solid Waste, Including the County Integrated Waste Management Plan: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses, both residential and non-residential in localized areas throughout unincorporated Riverside County. These increases, however, are to some extent offset by reductions in other parts of Riverside County. Project-related waste generation would increase incrementally throughout Riverside County over a roughly 50-year period. Any future development authorized pursuant to the project would be required to comply with all applicable state, federal and county requirements for solid waste disposal, including the Countywide Integrated Waste Management Plan. Accordingly, the project would not have a significant adverse impact on the implementation, attainment or compliance with any of these statutes or regulations. Moreover, regulatory compliance, as outlined below, would further reduce the already insignificant impact.

a. Analysis of Impact 4.17.C-2

All development of future land uses would be required to comply with all applicable federal, state and local statutes and regulations related to solid waste. The RCDEH has the primary responsibility for ensuring the proper operation and closure of solid waste facilities and disposal sites in Riverside County. It also is responsible for ensuring the proper storage and transportation of solid wastes. The RCDEH is the local enforcement agency (LEA) for CalRecycle. As such, it provides solid waste inspection and permitting services to the various jurisdictions within Riverside County; conducts enforcement, inspection and permitting for solid waste facilities, operations and disposal sites, including those that are permitted, exempt, illegal, inactive, closed or abandoned; maintains LEA certification in good standing with the State (CalRecycle); maintains communication with CalRecycle as well as other local enforcement and regulatory agencies; and, promotes interagency cooperation with all entities involved in solid waste management and disposal in Riverside County.

In terms of development application and approval, both the RCWMD and the RCDEH review all development applications within unincorporated Riverside County. Project conditions of approval are required by these departments as deemed appropriate for implementation of and compliance with the various County solid waste regulations and programs, including the CIWMP. Nothing proposed by the project, GPA No. 960, would interfere with or alter this process. Nor would project changes preclude the attainment of CIWMP policies, plans or goals. Any future development would be required to comply with the CIWMP as part of standard project conditions of approval. Also, no land use changes are proposed for lands within existing or proposed Riverside County landfills. For these reasons, the project's effects on compliance with federal, state and local statutes and regulations, including the CIWMP, would be less than significant. No project-specific mitigation is needed.

b. Regulatory Compliance for Impact 4.17.C-2

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, a variety of existing regulations, programs, plans, policies and existing mitigation measures from prior EIR No. 441 would further reduce this already insignificant impact. See discussion under "Existing Regulatory Compliance" for Impact 4.17.C-1, above.

c. Finding on Significance for Impact 4.17.C-2

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on the implementation or achievement of existing federal, state and local statutes and regulations related to solid waste, including the CIWMP. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies, as well as existing Mitigation Measures 4.15.3A through 4.15.3F from EIR No. 441, would further reduce or avoid the insignificant impacts associated with the project.

F. Solid Waste Management – Level of Significance After Mitigation

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on solid waste disposal facilities, programs, statutes and regulatory programs. In addition, compliance with the above-listed existing regulatory programs, standards and General Plan policies, as well as existing Mitigation Measures 4.15.3A through 4.15.3F from EIR No. 441, would further reduce or avoid the insignificant impacts associated with the project.

4.17.5 Schools

A. Schools – Existing Environmental Setting

Public schools and educational facilities are mandated by the California Department of Education and administered by the Riverside County Board of Education and Riverside County Office of Education (RCOE). Educational facilities within unincorporated Riverside County have their own state-mandated requirements to ensure a high quality of education is provided for all of the citizens of Riverside County. School districts offer education to all school-aged residents of the region, but operate entirely independent of the Riverside County government. ~~Specifically, school~~ *School* districts were created by the State of California and are subject to the

overview *by the* ~~of the~~ State Legislature. Elected governing school boards are responsible for budgeting and decision-making. The California Department of Education establishes school sites and construction standards.

Within Riverside County, the RCOE provides educational and administrative support services to the 23 school districts and over 430,000 students living in Riverside County. It also acts as an intermediary between the State of California and the local school districts. The RCOE also supports or directly provides a variety of specialized needs, such as Special Education for the severely handicapped, Head Start, Migrant Education, Alternative Education through independent study, Community Schools and Juvenile Court Schools and Career Technical Education programs designed to teach workforce skills aiding future employment.

A total of 23 school districts serve Riverside County. Most of these are "Unified School Districts" providing schooling for grades K (kindergarten) through 12. Occasionally, differing grades are provided by separate districts. Perris Union High School District serves grades 9-12 and four additional districts serve elementary grades (K-8): Perris, Romoland Union, Nuview Union and Menifee Union School Districts. The RCOE reports a total of 467 K-12 school sites, including 17 charter schools, 273 elementary sites, 75 middle/junior high sites, 69 high school sites and 33 continuation/ adult education sites. The County also offers 16 Head Start/preschool program sites. The RCOE also reports that the average State funding per pupil is $5,011 for elementary districts, $6,022 for high school districts and $5,239 for unified districts. The Riverside County Public School Directory for 2010-2011 indicates there are more than 18,742 teachers and 17,476 non-teaching school employees serving Riverside County.

Table 4.17-Q (Total School Enrollment for Riverside County School Districts), below, indicates student enrollment levels for the 2009-2010 and 2010-2011 school years. It also indicates the number of schools or sites for each type of school. The 18 charter schools and four "independent study" schools located in Riverside County are privately run and not included in the table. Since provision of private educational services, such as charter schools, is based on economic factors, rather than state mandate, they are not further discussed or analyzed in this section. Figure 4.17.5 shows the locations of the public schools within Riverside County.

Table 4.17-Q: Total School Enrollment for Riverside County School Districts

School District	2010 – 2011 Total Enrollment[1]	Number of Schools[2]/ Sites			
		Elementary	Middle / Jr. High	High	Other
Alvord Unified	19,765	14	4	2	3
Banning Unified	4,608	4	2	1	3
Beaumont Unified	8,514	6	2	1	3
Coachella Valley Unified	17,551	14	3	3	2
Corona-Norco Unified	53,153	31	7	5	8
Desert Center Unified	18	1	0	0	0
Desert Sand Unified	29,172	20	7	4	4
Hemet Unified	22,268	14	4	4	7
Jurupa Unified	20,000	16	3	3	3
Lake Elsinore Unified	22,051	14	4	5	3
Menifee Union	8,884	9	3	n/a	0
Moreno Valley Unified	36,221	23	6	5	7
Murrieta Valley Unified	22,363	11	4	4	1
Nuview Union	2,016	2	1	1	0
Palm Springs Unified	22,901	16	4	4	3
Palo Verde Unified	3,567	3	1	1	1
Perris	5,600	8	n/a	n/a	0
Perris Union High	10,610	n/a	1	3	4
Riverside COE [3]	3,388			1	1
Riverside Unified [4]	42,580	30	7	5	5
Romoland	2,995	3	1	n/a	0

School District	2010 – 2011 Total Enrollment[1]	Number of Schools[2]/ Sites			
		Elementary	Middle / Jr. High	High	Other
San Jacinto Unified	9,672	7	2	2	0
Temecula Valley Unified	29,365	18	6	4	1
Val Verde Unified	19,678	12	4	2	3
District TOTALS	***416,940***	***286***	***76***	***60***	***62***
Charter[5]	7,317	2	1	6	4
Community Colleges	68,058	n/a	n/a	n/a	7

Footnotes:
1. Projected enrollment.
2. Elementary schools K-5 (or K-8); middle schools 6-8, (or intermediate 5-6 and middle 7-8), junior highs 7-9, high school 9-12. "Other" represents continuation, alternative education, independent study and/or adult education schools and may cover a variety of grades as well.
3. Includes California School for the Deaf and Sherman Indian High.
4. Includes four elementary schools listed by the State as being "Critically Overcrowded," as of April 2003.
5. For this category, "other" includes preparatory schools covering grades K-12 (K-10 for one).

Source: Riverside County Public Schools Directory, 2010-2011.

Overcrowding in public schools is caused by increases in student enrollment. In April 2003 (the most recent year of data available), the State Department of Education established a list of schools and school districts identified as overcrowded under criteria set by the State of California. To be classified as a "Critically Overcrowded School," a school must have a pupil density greater than 115 pupils per acre for grades K through 6 and 90 pupils per acre for grades 7 through 12. Within Riverside County, five elementary schools within the Riverside Unified School District were identified as such. No other schools or school districts within Riverside County were included in the State's list.

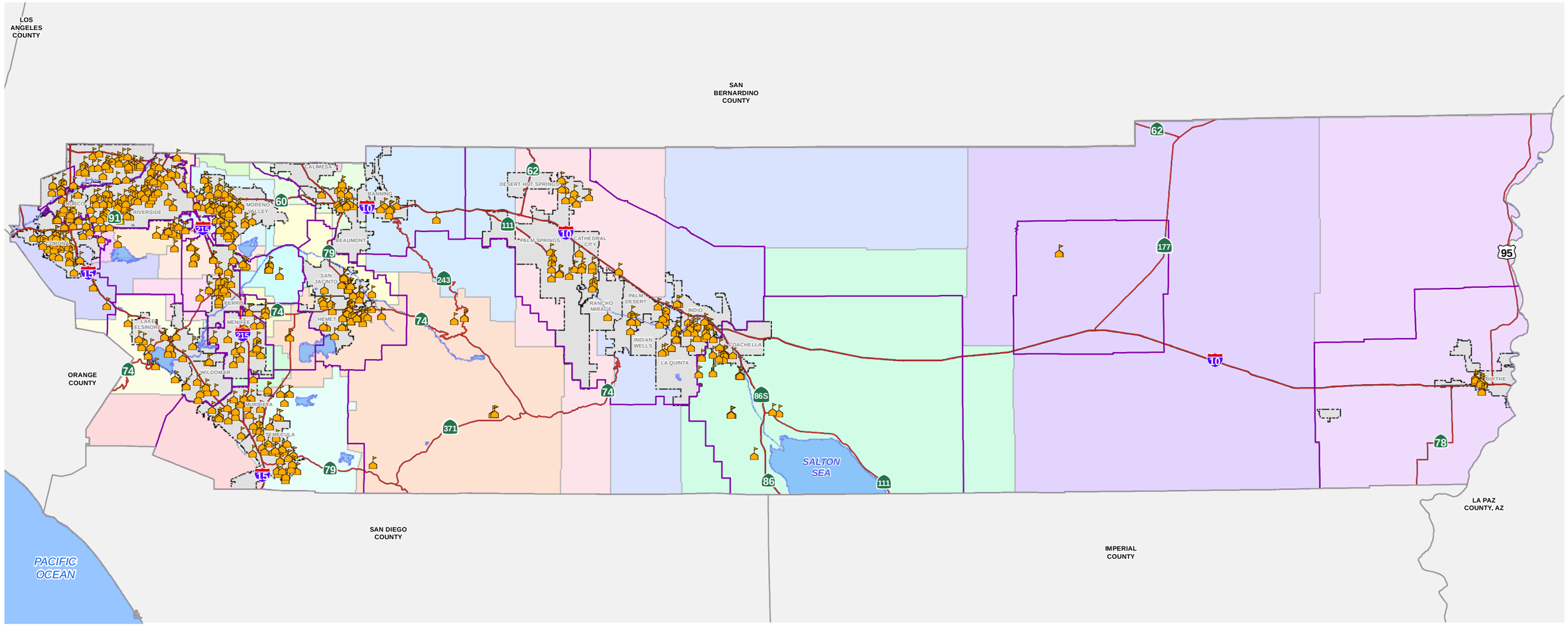
In Riverside County there are also several Community College Districts that provide advanced educational instruction. The Riverside Community College District has three campuses, one in Norco, Moreno Valley and Riverside City. The Mount San Jacinto Community College District has campuses in San Jacinto and in Menifee. The Palo Verde Community College District has one campus, and the College of the Desert, located in Palm Desert, has a single campus as well. There are ~~also~~ a number of private, public and technical/professional schools of higher education that also serve the students of Riverside County.

B. Policies and Regulations Addressing Schools

1. State Regulations

Assembly Bill (AB) 16: In 2002, AB 16 created the Critically Overcrowded School Facilities program, which supplements the new construction provisions within the School Facilities Program (SFP). The SFP provides State of California funding assistance for new facility construction projects and modernization projects. The Critically Overcrowded School Facilities program allows school districts with critically overcrowded school facilities, as determined by the California Department of Education (CDE), to apply for new construction projects in advance of meeting all SFP new construction program requirements. Districts with SFP new construction eligibility and school sites included on a CDE list of source schools may apply.

Leroy F. Greene School Facilities Act (SB 50): Senate Bill 50 (SB 50) was enacted by the State Legislature in 1998 and made significant amendments to existing state law governing school fees. In particular, SB 50 amended prior California Government Code (CGC) Section 65995(a) to *prohibit* state or local agencies from imposing school impact mitigation fees, dedications or other requirements in excess of those provided in the statute in connection with "any legislative or adjudicative act...by any state or local agency involving...the planning, use, or development of real property...."



Data Source: Riverside County (2009)

School Districts

- Alvord Unified
- Banning Unified
- Beaumont Unified
- Coachella Valley Unified
- Colton Joint Unified
- Corona-Norco Unified
- Desert Center Unified
- Desert Sands Unified
- Hemet Unified
- Jurupa Unified
- Lake Elsinore Unified
- Menifee Union & Perris Union HIgh
- Moreno Valley Unified
- Murrieta Valley Unified
- Nuview Union & Perris Union High
- Palm Springs Unified
- Palo Verde Valley Unified
- Perris & Perris Union High
- Riverside Unified
- Romoland & Perrris Union High
- San Jacinto Unified
- Temecula Valley Unified
- Val Verde Unified
- Yucaipa-Calimesa Joint Unified
- School Sites
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure 4.17.5

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RIVERSIDE COUNTY PLANNING DEPARTMENT

PUBLIC SCHOOL LOCATIONS

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The legislation also amended CGC Section 65996(b) to prohibit local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act [involving] the planning, use or development of real property." Further, SB 50 established the base amount of allowable developer fees: $1.93 per square foot for residential construction and $0.31 per square foot for commercial. These base amounts are commonly called "Level 1 fees" and are the same caps that were in place at the time SB 50 was enacted. Level 1 fees are subject to inflation adjustment every two years.

In certain circumstances, for residential construction, school districts can impose fees that are higher than Level 1 fees. School districts can impose Level 2 fees, which are equal to 50% of land and construction costs if they: (1) prepare and adopt a school needs analysis for facilities; (2) are determined by the State Allocation Board to be eligible to impose these fees; and (3) meet at least two of the following four conditions:

- At least 30% of the district's students are on a multi-track year-round schedule.
- The district has placed on the ballot within the previous four years a local school bond that received at least 50% of the votes cast.
- The district has passed bonds equal to 30% of its bonding capacity.
- Or, at least 20% of the district's teaching stations are relocatable classrooms.

Additionally, if the State of California's bond funds are exhausted, a school district that is eligible to impose Level 2 fees is authorized to impose even higher fees. Commonly referred to as "Level 3 fees," these fees are equal to 100% of land and construction costs of new schools required as a result of new developments.

2. Existing County General Plan Policies

As stated previously, the General Plan does not contain a Public Services Element. The following Land Use (LU) Element policy is provided in the General Plan to encourage the County to coordinate with public service agencies.

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

C. Thresholds of Significance for Schools

The proposed project would result in a significant impact to schools if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered schools. Or, result in the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for any schools.

D. Effect of GPA No. 960 on the General Plan and on Schools

The proposed update to the General Plan (pursuant to General Plan Amendment No. 960) includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas or increase densities of existing areas. The resultant increase in population would increase the number of students enrolled in existing schools and create the need for new or expanded school facilities.

The tables below summarize projected theoretical student populations, as an indicator of the need for schools and educational facilities and staff, for three scenarios. Again, these calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. In the real world, a number of additional factors that are beyond the scope of this analysis would apply (funding availability, jurisdiction, available staff, etc.). The actual planning, locations and development of schools and the provision of all associated services is under the purview of the respective school districts.

Table 4.17-R shows the student populations associated with the existing (baseline) level of development currently estimated to be present on the portions of the county directly affected by proposed land use-related changes; compared against the full build out of all of the same areas as they would be permitted under the updated General Plan (e.g., pursuant to the changes proposed in GPA No. 960). For the purposes of effects on schools, changes proposed by the project are relevant only if they would result in an ultimate increase in population. Changes that do not adversely affect (increase or reallocate) populations within unincorporated Riverside County are not discussed further here.

The build out scenario for Table 4.17-R (Theoretical Student Generation With and Without the Project) includes regions where the updated General Plan is the same as that which would occur under the existing (current General Plan's) mapped LUDs. As such, these areas do *not* represent new areas of growth attributable to the project, GPA No. 960, but rather simply reflect the anticipated build out of the Riverside County General Plan that would occur with or without the project. Thus, in order to focus on the areas where the proposed project would actually result in *new* development potential (i.e., potential impacts), a second scenario was developed. As shown in Table 4.17-S (Theoretical Student Generation for New Development Potential Areas), this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels in which an LUD was changed (except those being assigned to OS-CH).

The third table, Table 4.17-T (Theoretical Student Generation at General Plan Build Out), shows a comparison between the build out conditions of the General Plan as it currently exists and as it would exist if the proposed project is approved and fully implemented. This third table indicates the relative effects of the project on long-range planning, rather than environmental impacts per se.

Upon build out of Riverside County pursuant to the existing (2008) General Plan, as shown in Table 4.17-T, the County of Riverside as a whole would generate a student population of 435,800. Under the updated General Plan, amended per GPA No. 960, this build out total would decrease to 406,300. This represents roughly 29,500 fewer students than originally anticipated in the General Plan, a decrease of 6.8%. This reduced population and need would be reflected in any of several ways, including through a reduction in the capacity needed within existing schools, by delaying the need for construction of new schools or by reducing the size of new schools constructed. For this reason, on a *comparative* basis, the proposed project would contribute to fewer impacts to the

environment at build out, since fewer schools would need to be constructed to serve the expected student populations.

Further, the proposed project would result in a net decrease in the overall number of students generated across each category – elementary, middle and high school. It can reasonably be projected that students requiring special programs, such as Head Start or continuation school, would similarly increase incrementally in proportion to the overall population growth in a given school district. As a result, fewer new or expanded facilities would be required to accommodate the expected population.

Table 4.17-R: Theoretical Student Generation With and Without the Project

School Type	Generation Factors	Projected Total Students		
		Existing Land Uses[1]	General Plan Build Out, With GPA No. 960[1]	Difference
	Population[2]	***16,520 persons***	***46,370 persons***	*+ 29,840 people*
Elementary School	0.369 students per dwelling unit	**2,160**	**6,120**	+ 3,960 students
Middle School	0.201 students per dwelling unit	**1,180**	**3,330**	+ 2,160 students
High School	0.246 students per dwelling unit	**1,440**	**4,080**	+ 2,640 students
	Total Students	***4,780***	***13,520***	***+ 8,750 students***

Footnotes:
1. These two scenarios encompasses the 111,440-acre area of known spatial project changes.
2. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10. Each school district determines and implements actual needs.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Riverside County, EIR No. 441, 2003, for service standards.

Table 4.17- S: Theoretical Student Generation for New Development Potential Areas

School Type	Generation Factors	Projected Total Students		
		Existing Land Uses[1]	General Plan Build Out, With GPA No. 960[1]	Difference
	Population[2]	***6,590 persons***	***19,610 persons***	*+ 13,020 people*
Elementary School	0.369 students per dwelling unit	**760**	**2,340**	+ 1,580 students
Middle School	0.201 students per dwelling unit	**410**	**1,280**	+ 860 students
High School	0.246 students per dwelling unit	**510**	**1,560**	+ 1,050 students
	Total Students	***1,680***	***5,180***	***+ 3,500 students***

Footnotes:
1. Area analyzed for these two scenarios encompasses 10,690 acres of known spatial project changes that would increase development intensity or density or change an LUD within the Community Development Foundation.
2. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10. Each school district determines and implements actual needs.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Riverside County, EIR No. 441, 2003, for service standards.

Table 4.17-T: Theoretical Student Generation at General Plan Build Out

School Type	Generation Factors	Theoretical Total Students		
		Existing General Plan Build Out *	General Plan Build Out With GPA No. 960*	Difference
	Build Out Population	***1,736,700 persons***	***1,599, 000 persons***	***- 137,800 people***
Elementary School	0.369 students per dwelling unit	**197,100**	**183,800**	- 13,300 students
Middle School	0.201 students per dwelling unit	**107,400**	**100,100**	- 7,300 students
High School	0.246 students per dwelling unit	**131,400**	**121,500**	- 8,900 students
	Student Totals	***435,800***	***406,300***	***- 29,500 students***

* Build out of Riverside County as per the directives and maps in the existing General Plan, with and without the project.

Source: Riverside County Planning Dept., Project application data and analysis, 2010. Riverside County, EIR No. 441, 2003, for service standards.

In terms of actual changes expected from existing baseline conditions, as indicated in Table 4.17-S, when examining student population growth attributable directly to GPA No. 960 changes, the project would introduce roughly 3,500 new students to the schools of Riverside County. This population would arise from numerous individual locations throughout the county, however, rather than be localized to any single school district. As such, for most areas of Riverside County, adverse effects to any single school would be small to negligible. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary facilities and staff. To determine specifically to what extent the individual school districts of Riverside County would be affected by the proposed project, land use-related impacts were analyzed according to their region (by area plan) and by school district. The results of this analysis is shown in Table 4.17-U (Total Project-Related Student Population Changes by School District), below.

In terms of regional effects, as with other public services, the same patterns of growth and future development intensity increases were apparent in the student generation data. Roughly one-third (1,040) of the new students generated would fall within the Elsinore Area Plan due to the two new Rural Village Overlays. The Palo Verde Valley Area Plan would see roughly 810 additional students. Jurupa, Western Coachella Valley and Mead Valley Area Plans would each see between 400-470 students. The San Jacinto Valley Area Plan would see a small increase (130 students) and seven area plans would see increases of between 2-60 students. One region, Eastvale Area Plan, was forecast to lose one student.

In terms of effects on specific school districts, as shown in Table 4.17-U a number of districts would either have no change (0 students gained or lost) or a negative change (for example, due to a higher residential density being replaced with lower density residential or a non-residential use). Four districts would see minor (20 or fewer) or moderate (21 to 100) increases in student populations. However, three districts are forecast to see large increases in student populations: Palm Springs Unified (722 additional students), Palo Verde Unified (534 additional students) and Perris Union High (145 additional students). Since these projected increases are forecast to occur over a roughly 50-year period, none of the minor or moderate increases would result in a significant adverse effect to those districts, including the 'Critically Overcrowded' Riverside Unified School District. Additionally, school impact mitigation fees would be used to accommodate the needs of these students and reduce effects for all of these districts.

Table 4.17-U: Total Project-Related Student Population Changes by School District

Decrease in Number of Students (at project build out)[1]	
Banning Unified (-1)[2]	Jurupa Unified (-123)
Coachella Valley Unified (-570)	Lake Elsinore Unified (-838)
No Change in Number of Students (No Students Gained or Lost)	
Beaumont Unified (0)	Nuview Union (0)
Coachella Valley Unified (0)	San Jacinto Unified (0)
Colton Joint Unified[3] (0)	Val Verde Unified (0)
Menifee Union (0)	
Minor Increase in Number of Students (1 to 20 Additional Students)	
Alvord Unified (+1)	Riverside Unified (+6)
Moreno Valley Unified (+3)	Romoland (+17)
Moderate Increase in Number of Students (21 to 100 Additional Students)	
Corona-Norco Unified (+59)	Murrieta Valley Unified (+25)
Desert Sand Unified (+28)	Perris (+84)
Hemet Unified (+33)	Temecula Valley Unified (+37)
Large Increase in Number of Students (100 or More Additional Students)	
Palm Springs Unified (+722)	Perris Union High (+145)
Palo Verde Unified (+534)	

Footnotes:

1. Comparison of theoretical number of students generated by land use changes proposed under GPA No. 960 compared to theoretical student generation associated with existing land uses for the same parcels of land.

2. Value in parenthesis is total change in number of students. All values rounded to nearest whole number.
3. Included here because the District does include a portion of Riverside County. Only land use change proposed, however, is acquisition/designation of vacant land as Open Space-Conservation.

Source: Riverside County GIS Dept., Analysis of project application and GIS data, 2010.

For the remaining three districts, student population increases could be substantial and require expansion of existing or construction of new additional facilities to serve these new students. As such, environmental impacts would be associated with construction of new school sites/facilities to the extent their location, construction methods and operations affect the surrounding area. Data indicate that each of these Area Plans contain thousands of acres of vacant lands. This vacant land availability means that situating new school sites for these areas could be achieved in a manner that minimizes environmental impacts.

E. Schools – Impacts and Mitigation

The following impacts related to schools that would result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools? Or, would it result in the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for any schools?

Impact 4.17.D – Cause Adverse Environmental Effects Due to the Need for Schools: Future development consistent with GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County resulting in a comparable increase in population, including students requiring educational services. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and the associated population expected to occur within Riverside County over the next 50 years. In terms of actual changes to existing student populations and service levels, localized development increases would incrementally generate additional students creating demand for additional school facilities, services and personnel in specific areas, particularly within the Palm Springs School District, Palo Verde Unified School District and Perris Union High School District. Outside of these three districts, none of the project-related population increases would trigger the need for new or improved facilities. The additional students generated over the next 50 years could readily be accommodated at existing facilities and such districts would not have a significant impact. For the remaining three districts, however, compliance with existing laws (Senate Bill 50, in particular) and the policies of the Riverside County General Plan would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.17.D

New development would introduce additional people to Riverside County who require school services. This would result in the need for additional classroom space, teaching and support staff where increases exceed current capacity. Where increases trigger new school facilities or expansion of existing facilities, environmental impacts could potentially occur.

As shown in Table 4.17-T, above, existing standards indicate that full build out of the existing General Plan would accommodate a population of roughly 1.7 million people within unincorporated Riverside County. Using standard student generation factors, this population is estimated to include a total of roughly 436,000 students

throughout Riverside County. The land use changes associated with GPA No. 960 would reduce expected population of Riverside County by nearly 138,000 people. The total student population would be similarly reduced (by roughly 29,500) to a total of roughly 406,000. Accordingly, environmental impacts associated with construction of new or improved school facilities would be avoided or postponed.

In terms of the project's effects on baseline environmental conditions, as indicated in Table 4.17-R, beyond the growth anticipated in the area under the existing General Plan, GPA No. 960 would result in changes that could introduce 3,500 additional new students to schools in Riverside County. This total, however, represents the net increase for all affected schools across the county. When examined by school district, however, it was found that some districts would have little to no change, some would show decreases in student populations and three show large increases in population. See Table 4.17-U. Specifically, three districts are forecast to see large increases in student populations: Palm Springs Unified (720 additional students), Palo Verde Unified (530 additional students) and Perris Union High (150 additional students). Since these projected increases are forecast to occur over a roughly 50-year period, for all but the three districts mentioned above, the project would not have any significantly adverse effects. This includes the 'Critically Overcrowded' Riverside Unified School District. Also, with the increases occurring incrementally over several decades, the districts would have ample time for long-range planning and provision of necessary school services as need arose.

For the remaining three districts, student population increases could be substantial and require expansion of existing or construction of new additional facilities to serve these new students. As such, environmental impacts would be associated with construction of new school sites/facilities to the extent their location, construction methods and operations affect the surrounding area. Data indicate that each of the Area Plans in which these new school sites would be located contain hundreds of acres of vacant lands. This vacant land availability means that situating new school sites for these areas could be achieved in a manner that minimizes environmental impacts.

2. Regulatory Compliance for Impact 4.17.D

As detailed and explained below, compliance with the following existing laws, programs and General Plan policies would be sufficient to ensure that impacts to schools as a result of GPA No. 960 would be less than significant.

Leroy F. Greene School Facilities Act (SB 50): Development fees are required to be paid pursuant to development Conditions of Approval. Pursuant to this law, the payment of these school fee amounts provided for in CGC Sections 65995, 65995.5 and 65995.7 would constitute full and complete mitigation for school facilities.

Compliance with Existing Riverside County General Plan Policies: General Plan Policy LU 5.2 aids in preventing significant impacts to schools. It directs the County of Riverside to take action to ensure that development does not cause growth to exceed acceptable levels of service. In terms of schools, this is implemented through requirements for development fees to be paid as part of project Conditions of Approval. See Section 4.17.5.B for full text of the policy.

F. Schools – Level of Significance After Mitigation

SB 50 states that the exclusive method of mitigating the impact of school facilities according to CEQA is to pay the maximum school fees and that such fees are "deemed to provide full and complete school facilities mitigation" related to the adequacy of school facilities when considering the approval or the establishment of conditions for the approval of a development project (Government Code 65996(a) and (b)). Because the

Government Code states that compliance with SB 50 would provide full and complete mitigation, no significant impact would occur.

4.17.6 Libraries

A. Libraries – Existing Environmental Setting

The County of Riverside operates a system of ~~32~~ *35* libraries and two book mobiles (one serving Coachella Valley and one serving western Riverside County) to serve unincorporated populations. The names and locations of these Riverside County libraries are presented in Table 4.17-V (County Libraries Serving Riverside County), below. Figure 4.17.6 shows the locations of the public libraries within Riverside County.

Table 4.17-V: County Libraries Serving Riverside County

Library	Location
Anza	57430 Mitchell Road, Anza
Cabazon	*50425 Carmen Avenue, Cabazon*
Calimesa	908 Park, Calimesa
Canyon Lake	31508 Railroad Canyon Road, Canyon Lake
Cathedral City	33-520 Date Palm Drive, Cathedral City
Coachella	1538 7th Street, Coachella
Desert Hot Springs	11691 West Drive
Eastvale	7447 Cleveland Ave., Eastvale
El Cerrito	7581 Rudnell Road, Corona
Glen Avon	9244 Galena Road, Riverside
Highgrove	690 W. Center Street, Highgrove
Home Gardens	3785 Neece Street, Corona
Idyllwild	54185 Pinecrest Ave., Idyllwild
Indio	200 Civic Center Mall, Indio
La Quinta	78-080 Calle Estado #2, La Quinta
Lake Elsinore	400 West Graham Ave., Lake Elsinore
Lakeside	*32593 Riverside Drive, Lake Elsinore*
Lake Tamarisk	43880 Lake Tamarisk Drive, Desert Center
Mecca	65-250A Coahuilla Street, Mecca
Mead Valley	*21580 Oakwood Street, Mead Valley*
Mission Trail*/Wildomar*	34303 Mission Trail, Wildomar
Norco	3954 Old Hamner Ave., Norco
Nuview	29990 Lakeview Road, Nuevo
Palm Desert	73-300 Fred Waring Drive, Palm Desert
Paloma Valley	31375 Bradley Road, Menifee
Perris	163 E. San Jacinto, Perris
Romoland	26000 Briggs Road, Romoland
Robidoux	5840 Mission Blvd., Riverside
San Jacinto	165 W. 7th Street, San Jacinto
Sun City	26982 Cherry Hills Blvd., Sun City
Temecula – Grace Mellman	41000 County Center Drive, Temecula
Temecula – Public	30600 Pauba Road, Temecula
Thousand Palms	72-715 La Canada Way, Thousand Palms
Valle Vista	43975 E. Florida Ave., Hemet
Woodcrest	16625 Krameria Ave., Riverside

Source: Riverside County Library System, http://rivlib.info/riverside-County-library-system/, accessed April, 2011.

In addition, the Riverside County Library System operates an automated network that currently deploys over 350 computer/terminal workstations in the library branches of the Riverside County Library System, Riverside Public Library, Moreno Valley Library, Murrieta Public Library, Murrieta Valley High School and College of the Desert. The network can also be accessed by Riverside County residents via the Internet. The library system manages the library catalog of the 1.3 million items in the library system and the annual checkout of over 3.5 million books, audios and videos. For 2010, the Riverside County Library System reported a total of 681,117 'registered borrowers' utilizing county library services.

According to data published by the County of Riverside in its "Financial Highlights (Fiscal Year 2008-2009)," within Riverside County the County Library System circulated 3,464,550 items (books, videos, etc.) and answered nearly 382,800 reference questions to a patron door-count of over 3,170,400 library visitors. There were also over 5,600 programs offered that were attended by over 127,700 people.

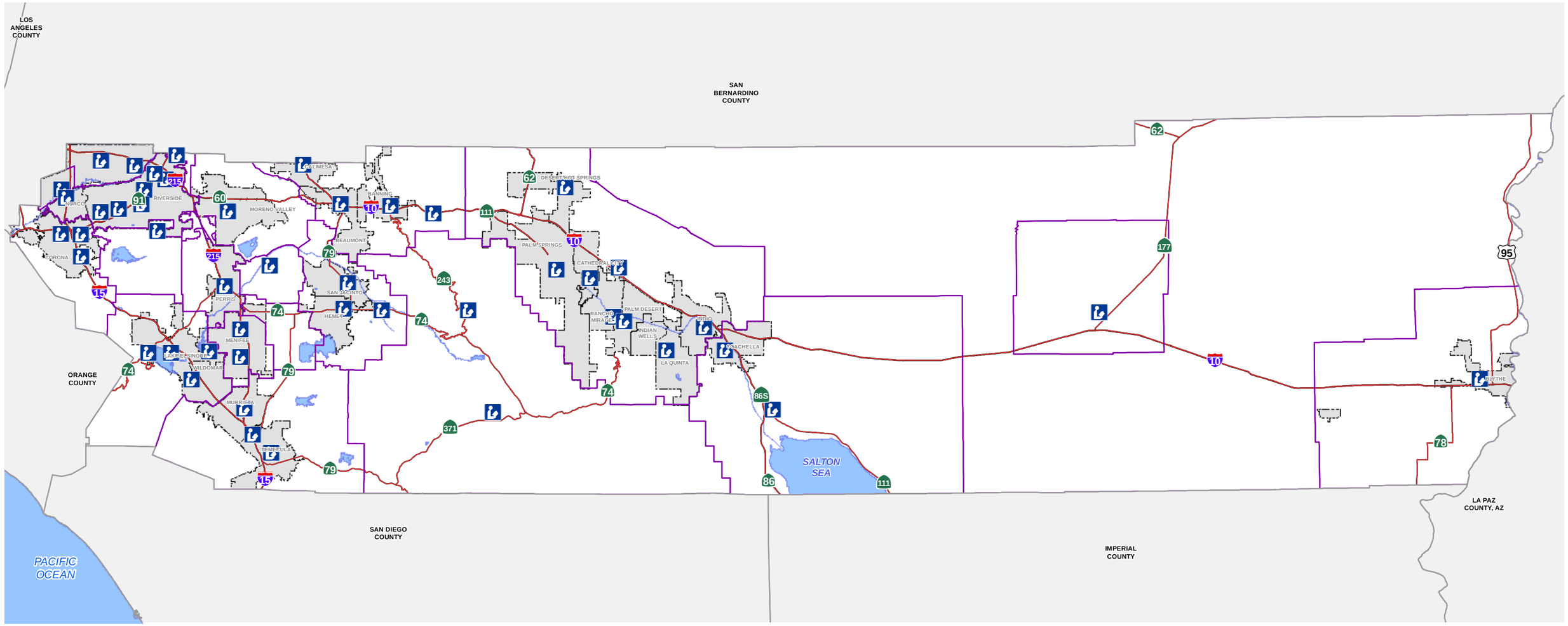
In addition to providing the opportunity to review and/or check-out materials for personal use, the County of Riverside also operates a number of specific programs including adult and family literacy, and after-school and pre-school programs. Riverside County's ability to support the needs of future growth is dependent upon its ability to secure sites for, construct, and stock new libraries on a timely basis. At present, there is no specific funding mechanism for expansion of library facilities.

The Riverside County library system did not indicate that it maintained a specific numerical factor to analyze the needs created by new development. However, the American Library Association suggests that an appropriate service criteria would be availability of convenient library facilities and book reserves at a rate of 0.5 square foot of library space and 2.5 volumes per capita. The County's ability to support the needs of future growth is dependent upon its ability to secure sites for, construct and stock new libraries on a timely basis. At present, there is no specific funding mechanism for expansion of library facilities. Based on 2010 reported registered borrowers (681,117) and current square footage of library facilities available (333,884), at present facilities provide approximately 0.49 square feet of space per registered borrower (not the Riverside County population as a whole).

B. Policies and Regulations Addressing Libraries

Ordinance No. 659 – Development Impact Fee Program: This ordinance establishes the need for addressing impacts caused by new development of residential, commercial and industrial uses. Thus, the ordinance establishes a development impact fee (DIF) program by which new development is charged fees to address the increased need for additional facilities, services and also open space. For each category of land use (single-family residential, multi-family residential, commercial and industrial), DIF charges are determined based on the location of the property to be developed (fees vary by Area Plan), as well as the density/intensity of the proposed use. Residential fees are charged on a per-dwelling unit basis and run from roughly $3,000 to $7,300. For commercial, industrial and surface mining, fees are charged on a per-acre basis and can run from between $20,000 to $35,000 for commercial uses, $10,000 to $18,000 for industrial uses and roughly $4,500 to nearly $9,000 for surface mining. See the ordinance for specific values.

The DIF ordinance does establish fees to be collected for "library books" as $341 per dwelling unit for single-family homes and $286 per dwelling unit for multi-family homes. The ordinance enforces the program by stating that "no building permit shall be issued for any development project except upon the condition that the development impact fees required by this ordinance are paid."



Data Source: Riverside County (2010)

Library Locations

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.17.6

December 16, 2013

Miles

0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

RIVERSIDE COUNTY PLANNING DEPARTMENT

PUBLIC LIBRARY LOCATIONS

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2. Proposed New or Revised County General Plan Policies

The General Plan, although it does not include a Public Services Element, does include a policy addressing the effects of future development on library facilities. This policy would help ensure adequate library facilities as development occurs.

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children)~~, transportation systems and fire/ police/medical services.

C. Thresholds of Significance for Libraries

The proposed project would result in a significant impact on libraries if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities. Or, result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for libraries.

D. Effect of GPA No. 960 on the General Plan and on Libraries

The proposed GPA No. 960 update to the General Plan includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development accommodated by GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. The resultant increase in population would similarly increase the number of people using library services and create the need for new or expanded library facilities and inventory.

Table 4.17-W (Theoretical Library Services Need Projections), below, summarizes estimated library service needs (as indicated by library floor space and book volumes) for three scenarios. The first two scenarios compare existing (i.e., baseline) conditions of actual current (2008) uses of land and derived populations for the same against build out (fully developed) conditions that would occur if the lands in question were developed according to the updated General Plan (i.e., changed per GPA No. 960). Thus, this scenario represents the change associated with the project plus currently planned growth. The second scenario represents a subset of the first. In this one, only areas in which GPA No. 960 would result in an increase or change in density or intensity are included. Deleted are the areas in which development potential would be equal to or less than that currently planned under the existing General Plan. This serves to isolate just the areas in which the project would increase an effect, preventing reductions elsewhere from masking potential environmental effects. Lastly, scenario three shows build out conditions for all of unincorporated Riverside County, not just the areas of foreseeable spatial effects associated with the project, for the existing and proposed updated General Plans. This provides a side-by-side snapshot of how GPA No. 960 would affect the ultimate need for library services in Riverside County over time.

Again, these calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. In the real world, a number of additional factors that are beyond the scope of this analysis would apply (funding availability, jurisdiction, etc.). For the

purposes of effects on libraries, changes proposed by the project are relevant only if they would result in an ultimate increase in population. Changes that do not adversely affect (increase or reallocate) populations within the unincorporated county area are not discussed further here.

Upon build out of Riverside County pursuant to the existing (2008) General Plan, as shown in Table 4.17-W, Riverside County as a whole would require roughly 868,000 square feet of library space and 4.3 million volumes (including existing facilities and resources). Under the updated General Plan, amended per GPA No. 960, this build out total would decrease roughly 8% to just under 800,000 square feet and 4 million volumes. Thus, on a comparative basis, the proposed project would result in fewer impacts on the environment due a reduced need for libraries. Such a reduced need would be reflected in any of several ways, including through a reduction in the capacity needed within existing libraries, by delaying the need for construction of libraries or by reducing the size of new libraries constructed.

In terms of specifically that future development increasing as a result of the project, however, the project would result in just over 13,000 additional new residents in Riverside County. These residents would trigger the need for a total of approximately 6,500 square feet of additional library space and the need for 35,500 additional volumes. This total represents demand across Riverside County, however. The actual increases would be spread throughout the 19 Area Plans of unincorporated Riverside County, plus the remainder area of eastern desert not in an Area Plan. As such, the adverse effects on most individual regions would be small to negligible. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

To examine effects to the individual regions of Riverside County, the library data was further broken down by Area Plan. This analysis indicated that effects would vary regionally, in the same pattern previously described. Approximately 30% of the increased demand would be concentrated in the Elsinore Area Plan region as a result of GPA No. 960, due primarily to future development of the proposed Meadowbrook and Good Hope Rural Village Land Use Overlays. The Mead Valley Area Plan is also affected by these RVOs, but to a lesser degree (900 square feet as opposed to Elsinore's 1,900). The Palo Verde Valley and Jurupa Area Plans would need an additional 1,410 and 1,010 square feet, respectively. The Western Coachella Valley Area Plan would see an increase of roughly 700 square feet and the San Jacinto Valley Area Plan would see 210 square feet. Four other area plans (Temescal Canyon, Southwest, Eastern Coachella Valley and the Harvest Valley/Winchester) would also see lesser increases (120, 90, 80 and 60, respectively). Of the remaining seven regions, three would have 20 square feet or less in additional library floor space needs, three would have no increase and one (Eastvale) would actually see demand decrease very slightly (-7 square feet). The need for additional volumes would increase (or decrease) in the same proportions.

In terms of General Plan changes, the project would only incrementally affect most of Riverside County's Area Plans; in amounts not large enough to trigger the need for an additional library in many county areas. Not surprisingly, the increased demand for library services show up most clearly in the areas being planned for urbanization – the Meadowbrook and Good Hope Rural Village Overlays, in particular. In terms of environmental effects, future development accommodated by GPA No. 960 would contribute incrementally to the need for additional library services throughout Riverside County to ensure adequate levels of service. The environmental impacts and mitigation needed, if any, associated with these additional service needs are discussed in the section that follows, below.

Table 4.17-W: Theoretical Library Services Need Projections

Service Item	Generation Factors[1]	Existing Condition (No Project)	Revised Condition (With Project)	Difference
Scenario 1: Existing Conditions / Updated General Plan Build Out, Full Project Spatial Area[2]				
	Population[1]	***16,520 persons***	***46,370 persons***	***+ 29,840 people***
Library Floor Space	0.5 square feet per person	8,300 sq feet	23,200 sq feet	+ 14,900 sq feet
Volumes	2.5 per person	41,300 vols	115,900 vols	+ 74,600 vols
Scenario 2: Existing Conditions / Updated General Plan Build Out, Areas of New Development Potential Only[3]				
	Population[1]	***6,590 persons***	***19,610 persons***	***+ 13,020 people***
Library Floor Space	0.5 square feet per person	3,300 sq feet	9,800 sq feet	+ 6,500 sq feet
Volumes	2.5 per person	16,500 vols	49,100 vols	+ 35,500 vols
Scenario 3: Build Out of Current General Plan / Updated (per GPA No. 960) General Plan, Countywide[4]				
	Population[5]	***1,736,700 persons***	***1,599,000 persons***	***- 137,800 people***
Library Floor Space	0.5 square feet per person	868,400 sq feet	799,500 sq feet	- 68,900 sq feet
Volumes	2.5 per person	4,341,800 vols	3,997,400 vols	- 344,400 vols

Footnotes:

1. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10 for population in scenarios 1 and 2, and nearest 100 for everything else.
2. Theoretical population estimated for the land uses associated with the 111,440-acre area of known spatial project changes. Existing condition is the current uses of land within these areas. Revised condition is the build out (development) of the same areas pursuant to the General Plan as updated per GPA No. 960.
3. Encompasses just the 10,690 acres proposed for new or increased development intensity or density under GPA No. 960. Eliminates growth effects from areas that would develop per the existing General Plan, isolating just the effects of the proposed project. Existing condition is the current uses of land within the limited area. Revised condition is the build out of the same area per the General Plan as updated per GPA No. 960.
4. Existing condition is the build out of unincorporated Riverside County pursuant to the existing (2008) General Plan. Revised condition is build out of the same pursuant to the General Plan as updated by GPA No. 960.
5. Population data provided by Riverside County Center for Demographic Research, 2010.

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Library service standards from EIR No. 441.

E. Libraries – Impacts and Mitigation

The following impacts to library services that would result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities? Or, would it result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for any library services?

Impact 4.17.E – Cause Adverse Environmental Effects Due to the Need for Library Services: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. Compared to the existing General Plan, the overall net effect of the project is to reduce the amount of dwelling units and the associated population expected to occur within Riverside County over the next 50 years. In terms of actual changes relative to baseline environmental conditions, localized new development would incrementally increase populations creating demand for additional library services – as indicated by floor space and volumes. Because the increases are spread throughout Riverside County and would occur over roughly 50 or more years, the additional 6,500 square feet of library floor space and 35,500 additional volumes needed as a result of new development potential from the project would be met through current long-range library planning and existing development impact mitigation programs (such as Ordinance No. 659). For these reasons the project would not have a significant adverse effect on library services.

1. Analysis of Impact 4.17.E

New development would introduce additional people to Riverside County library services. This would result in additional use of existing facilities and work for existing staff. When demand is great enough in a given region, an additional library would be built. However, in areas where development remained sparse, development of new libraries would be unlikely.

As discussed in Section 4.17.6.D, above, existing standards indicate that full build out of the existing General Plan would accommodate a population of roughly 1.7 million people within unincorporated Riverside County. To serve this population, the Riverside County library system would require an estimated total of 868,000 square feet of library space and roughly 4.3 million volumes. The land use changes associated with GPA No. 960 would reduce expected population of Riverside County by nearly 138,000 people and require 69,000 square feet less library floor space and roughly 344,000 fewer library books. Educational, reference, mobile book delivery and other library service needs would be similarly reduced. Accordingly, environmental impacts associated with construction of new or improved facilities would be avoided or postponed.

At the Area Plan level, however, as shown in Table 4.17-W, GPA No. 960 would allow for additional future development that would increase Riverside County's population by roughly 13,000 people, mostly spread incrementally throughout Riverside County. This increase would require an estimated 6,500 additional square feet of library floor space and roughly 35,500 additional volumes. Overall, because some portions of Riverside County would experience a population decrease or neutral change, many areas of Riverside County would not have any significant adverse impact to library services as a result of future development pursuant to this project.

Some areas would have minor increases. In these areas, future development as a result of the project would not result in significant adverse impacts on library services and facilities. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

The three areas covered by the Elsinore, Jurupa and Palo Verde Valley Area Plans, however, would need larger numbers of volumes (17,000, 5,000 and 7,000, respectively). In these areas in particular, additional library services and volumes would be required to continue to provide adequate levels of service within the communities. The regulatory compliance below outlines measures that would be necessary to provide for the needed additional services in order to ensure impacts to libraries are less than significant. No project-specific mitigation is needed.

It should also be remembered that the build out of the new development leading to this population growth is projected to take roughly 50 years. This is ample time to allow for adequate long-range planning and provision of additional services as need arises. In addition, GPA No. 960 is projected to result in roughly 138,000 fewer people at build out than originally planned for under the current General Plan and would similarly reduce the need for additional library services. This change would be reflected in any of several ways, including through a reduction in the capacity needed within existing libraries, by delaying the need for construction of new libraries or, by reducing the size of new libraries constructed.

2. Regulatory Compliance for Impact 4.17.E

As detailed and explained below, compliance with the following existing Riverside County ordinance and General Plan policies is sufficient to ensure that impacts to libraries as a result of GPA No. 960 would be less than significant.

a. Compliance with Existing Riverside County Policies and Ordinances

Ordinance No. 659 – Development Impact Fees Program: Under this ordinance, all new residential, industrial and commercial development is required to pay development impact fees commensurate with the level of new development proposed in order to offset impacts to existing and future public facilities. For library services, the ordinance establishes a base per-dwelling unit fee for both single- and multi-family homes; $341 and $286 per dwelling unit respectively. The ordinance enforces the program by stating that "no building permit shall be issued for any Development Project except upon the condition that the Development Impact Fees required by this ordinance are paid." These funds are collected and used to provide both library services and construction of new facilities pursuant to the Public Facilities Needs List maintained by the County of Riverside and updated annually.

Riverside County General Plan Policies: Policy LU 5.1 in the Riverside County General Plan aids in the prevention of significant impacts to libraries. It directs the County of Riverside to take action to ensure that development does not cause growth to exceed acceptable levels of service. In terms of libraries, this is implemented through requirements for development fees to be paid as part of project Conditions of Approval. See Section 4.17.6.B for full text of the policy.

b. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measure 4.15.6A was imposed to reduce impacts to libraries to less than significant. This measure remains applicable to this project and would lessen impacts to libraries by setting a performance standard that must be met by new development proposals. This standard is implemented with funds collected pursuant to County Ordinance No. 659, as discussed above.

Existing Mitigation Measure 4.15.6A: Riverside County shall provide a minimum of approximately 0.5 square foot of library space and 2.5 volumes per county resident.

F. Libraries – Level of Significance After Mitigation

With the implementation of the above-listed existing General Plan policies and existing Mitigation Measure 4.15.6A from EIR No. 441, GPA No. 960 would have a less than significant impact on libraries.

4.17.7 Medical Facilities

A. Medical Facilities – Existing Environmental Setting

The County of Riverside operates the Riverside County Regional Medical Center (RCRMC) located in Moreno Valley at 26520 Cactus Avenue. The RCRMC also operates a number of adjunct clinics. The Riverside County Department of Public Health operates ten separate clinics located throughout Riverside County. Additional medical facilities and services, such as private/for profit and municipal facilities, exist within Riverside County that are not addressed in this analysis.

The RCRMC is a 520,000-square foot state-of-the-art tertiary care and level II adult and pediatric facility, licensed for a total of 439 beds. This includes 362 licensed beds in the main acute-care hospital and 77 licensed beds in a separate psychiatric facility (in the Arlington area of Riverside). All of its rooms are single-bed rooms. A Joint

Commission-accredited teaching hospital with a staff of approximately 2,100, the RCRMC can provide 200,000 annual patient visits in its specialty outpatient clinics and upwards of 100,000 annual patient visits to its emergency room/trauma unit. The RCRMC has 12 operating rooms, a helipad located directly adjacent to the Trauma Center and advanced digital radiology services, including magnetic resonance imaging (MRI) and computerized tomography (CT) equipment. There are also adult, pediatric and neonatal intensive care units, a birthing center and complete pulmonary services, including hyperbaric oxygen treatment facilities. The facility also offers a pharmacy, occupational and physical therapy, complete clinical laboratory services and diagnostic services, as well as an infusion center for outpatient intravenous treatment. (Communication from S. Lefebvre)

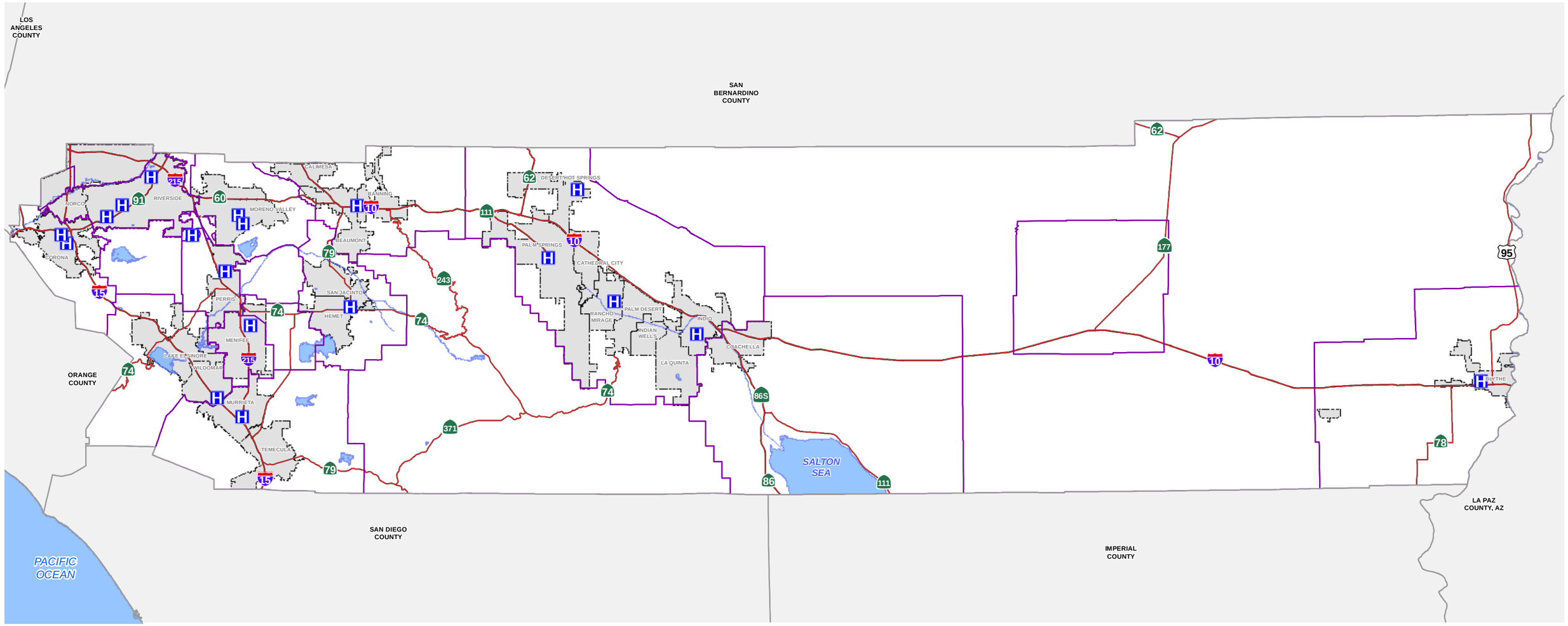
The community-based clinics operated by the Riverside County Department of Public Health provide a wide array of family care services in a locally based setting. The clinic in Mecca operates out of a Riverside County-owned site through an agreement with a non-profit community care provider. See Table 4.17-X (Riverside County Family Care Clinics and Related Facilities) for full list of clinics and locations. The Family Care Centers (FCC) will see any patient regardless of residency or insurance status. Each FCC has at least one family medicine physician on staff and is open from 8:00 a.m. to 5:00 p.m., Monday through Friday. The general services provided by each FCC include:

- Primary care, including ambulatory care for urgent and chronic illnesses for adults and children
- Pediatric and adult immunizations
- Confidential HIV testing
- Tuberculosis testing and screening
- Testing and treatment for sexually-transmitted disease
- Family planning
- Comprehensive perinatal (post-birth) services
- Child health examinations
- Nutrition services

Table 4.17-X: Riverside County Family Care Clinics and Related Facilities

Facility Name	Facility Location	Notes
Banning Family Care Center	3055 W. Ramsey Ave., Banning	
Blythe Family Health Clinic	321 W. Hobsonway, Blythe	Clinic operated under agreement with non-profit provider
Corona Family Care Center	505 S. Buena Vista Ave., Suite #101, Corona	
Hemet Family Care Center	880 North State Street, Hemet	
Indio Family Care Center	47-923 Oasis Street, Indio	
Jurupa Family Care Center	9415 Mission Blvd., Riverside	
Lake Elsinore Family Care Center	2499 E. Lakeshore Drive, Lake Elsinore	Also provides travel immunizations
Mecca Family Health Clinic	91275 66th Avenue, Suite #500, Mecca	Clinic operated under agreement with non-profit provider
Palm Springs Family Care Center	1515 North Sunrise Way, Palm Springs	(Also provides travel immunizations and HIV/AIDS primary care)
Perris Family Care Center (Dr. Robert Bruce Reid Health Clinic)	308 E. San Jacinto Ave., Perris	(Also provides urgent care, travel immunizations, HIV/AIDS primary care and occupational health services)
Riverside Neighborhood Health Center	7140 Indiana Ave., Riverside	
Rubidoux Family Care Center, (Don Schroeder Family Care Center)	5256 Mission Blvd., Riverside	(includes the Rubidoux Dental Office operating 7:30 am to 5 p.m., Mon. - Friday at this same location)
Temecula Neighborhood Healthcare	41715 Winchester Road, Temecula	(Clinic operated under agreement with non-profit provider)

Source: Riverside County GIS Dept., 2011.



Data Source: Riverside County (2010)

Hospital Locations

Highways

Area Plan Boundary

City Boundary

Waterbodies

Figure 4.17.7

December 16, 2013

0 10 20 Miles

RIVERSIDE COUNTY PLANNING DEPARTMENT

MAJOR HOSPITAL LOCATIONS

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Medical services are provided throughout Riverside County by a complex network of both public and private providers. In some cases, both populations of patient are served by the same providers and facilities. For a variety of reasons, full data on all of the medical encounters occurring within Riverside County are not available. However, the County of Riverside has published data on its services. According to Riverside County's "Financial Highlights (Fiscal Year 2008-2009)" report, the Riverside County Community Health Agency provided nearly 125,800 patient visits and performed 466,800 patient services including family planning, primary health care, prenatal care, urgent care, child health and disability prevention. The RCRMC also provided nearly 88,550 treatments and over 9,700 mental health services through its emergency department (emergency room), nearly 129,200 clinic visits and 23,250 admissions with a total of over 118,450 patient-days of in-patient care provided.

According to the 2008 Regional Medical Facility Profile report, in 2005, there were 80,932 licensed hospital beds in California, a rate of 2.2 beds per 1,000 residents. Riverside County had 2,880 licensed beds, a rate of 1.47 beds per 1,000 residents, 33% lower than the California rate. No specific adopted criteria are maintained for determining future needs for public hospital or medical clinics. The Riverside County Department of Public Health reports that Riverside County only has 50% of the needed hospital beds necessary to meet current needs. According to the Department, while the FCCs are sized to meet current needs, approximately one additional clinic of 15,000 to 20,000 square feet (or corresponding increase in size of an existing clinic) would be needed for every 250,000 person increase in population. (Communication from M. Osur)

B. Policies and Regulations Addressing Medical Facilities

Although the Riverside County General Plan does not include a Public Services Element, it does include the following Land Use (LU) Element policy that addresses the effects of future development on medical facilities by ensuring that development does not exceed adequate medical services.

Policy LU 5.1: Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and ~~child~~ day care centers ~~(i.e. infant, toddlers, preschool and school age children)~~, transportation systems, and fire/police/medical services.

C. Thresholds of Significance for Medical Facilities

The proposed project would result in a significant impact on medical facilities if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered medical facilities. Or, result in the need for new or physically altered medical facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any medical facilities.

D. Effect of GPA No. 960 on the General Plan and on Medical Facilities

The proposed update to the General Plan (pursuant to GPA No. 960) includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development consistent with GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. The resultant increase in population would

similarly increase the use of existing medical and health care services and facilities, as well as contribute incrementally to demand for new or expanded services and facilities.

The tables below summarize projected theoretical medical encounters (E.R. visits, inpatient and outpatient needs, etc.) to indicate the need for various types of medical services and facilities. Again, three scenarios are presented and all calculations are all labeled "theoretical" because they use the same basic set of assumptions and factors to allow for valid comparisons between and amongst scenarios. In the real world, a number of additional factors that are beyond the scope of this analysis would apply (funding availability, market conditions, available staff, etc.). The actual planning, locations and development of medical facilities is under the purview of a variety of authorities.

Table 4.17-Y (Theoretical Medical Service Needs With and Without the Project) shows representative medical statistics associated with the existing (baseline) level of development currently estimated to be present on the portions of Riverside County affected by proposed land use-related changes. These are compared against full build out of the same areas as they would be permitted under the updated General Plan (e.g., per the changes proposed in GPA No. 960). For the purposes of effects on medical services, changes proposed by the project are relevant only if they would result in an ultimate increase in population. Changes that do not adversely affect (increase or reallocate) populations within the unincorporated county area are not discussed further here.

Again, in order to focus on the areas where the proposed project would actually result in *new* development potential (i.e., potential impacts), a second scenario was developed. As shown in Table 4.17-Z (Theoretical Medical Needs for Areas of New Development Potential), this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels in which an LUD was changed (other than those being assigned to OS-CH, which has essentially no development potential).

The final table, Table 4.17-AA (Theoretical Medical Service Needs at General Plan Build Out), shows a comparison between the build out conditions of the General Plan as it currently exists and as it would exist if the proposed project is approved and fully implemented. This third table indicates the relative effects of the project on long-range medical planning, rather than environmental impacts per se.

Table 4.17-Y: Theoretical Medical Service Needs With and Without the Project

Staffing Item	Generation Factors (per 1,000 population)	Existing Uses of Land Total Needs[2]	GPA No. 960 Build Out Total Needs[2]	Difference
	Population[1]	***16,520 persons***	***46,370 persons***	***+ 29,840 people***
Hospital Beds	1.9 beds	30 beds	90 beds	+ 60 beds
Hospital Admissions	95 admits	1,570 admits	4,400 admits	+ 2,840 admits
ER Visits	275 visits	4,540 visits	12,750 visits	+ 8,210 visits
Outpatient Visits	275visits	4,540 visits	12,750 visits	+ 8,210 visits
Inpatient Days	493 days	8,150 days	22,860 days	+ 14,710 days
TOTAL MEDICAL ENCOUNTERS[3]		**17,230 encounters**	**48,360 encounters**	**+31,130 encounters**

Footnotes:
1. Theoretical population estimated for the land uses associated with the 111,440-acre area of known spatial project changes. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10.
2. Existing land uses indicate current (baseline) conditions. The second represents medical needs associated with build out (development) of the same areas pursuant to the General Plan as updated per GPA No. 960.
3. Total of patient-contact statistics (outpatient visits, hospital admissions and hospital inpatient days).

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Medical service standards for California from www,StateHealthFacts.org, 2008.

Upon build out of Riverside County pursuant to the existing (2008) General Plan, as shown in Table 4.17-AA, the County of Riverside as a whole would generate roughly 1.8 million medical service encounters per year and need a

total of 3,300 hospital beds (including those presently existing). Under the updated General Plan, as amended per GPA No. 960, this build out total would decrease roughly 8% to just under 1.6 million encounters and 3,000 beds. Thus, on a comparative basis the proposed project would result in fewer impacts on the environment due a reduced need for medical facilities. Such a reduced need would be reflected in any of several ways, including through a reduction in the capacity needed within existing facilities, by delaying the need for construction of additional medical facilities or by reducing the size of new facilities constructed.

Table 4.17- Z: Theoretical Medical Needs for Areas of New Development Potential

Staffing Item	Generation Factors (per 1,000 population)	Existing Uses of Land Total Needs[2]	GPA No. 960 Build Out Total Needs[2]	Difference
	Population[1]	***6,590 persons***	***19,610 persons***	***+ 13,020 people***
Hospital Beds	1.9 beds	13 beds	37 beds	+ 25 beds
Hospital Admissions	95 admits	230 admits	1,860 admits	+ 1,240 admits
ER Visits	275 visits	1,820 visits	5,400 visits	+ 3,580 visits
Outpatient Visits	275visits	1,820 visits	5,400 visits	+ 3,580 visits
Inpatient Days	493 days	3,260 days	9,680 days	+ 6,420 days
TOTAL MEDICAL ENCOUNTERS[3]		**6,890 encounters**	**20,470 encounters**	**+13,570 encounters**

Footnotes:
1. Theoretical population estimated for the land uses associated with the 10,690-acre area of known spatial project changes that would increase development intensity or density or change an LUD within the Community Development Foundation. Populations calculated as per General Plan Appendix E-1 standards. See Section 4.1 (Environmental Assumptions and Methods) for more information. All results rounded to the nearest 10, except beds not rounded.
2. Existing land uses indicate current (baseline) conditions. The second represents medical needs associated with build out (development) of the same areas pursuant to the General Plan as updated per GPA No. 960.
3. Total of patient-contact statistics (outpatient visits, hospital admissions and hospital inpatient days).

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Medical service standards for California from www,StateHealthFacts.org, 2008.

Table 4.17-AA: Theoretical Medical Service Needs at General Plan Build Out

Staffing Item	Generation Factors (per 1,000 population)	Existing General Plan Build Out[2] Total Needs	Updated General Plan Build Out[2] Total Needs	Difference
	Build Out Population[1]	***1,736,700 persons***	***1,599,000 persons***	***-137,800 persons***
Hospital Beds	1.9 beds	3,300 beds	3,000 beds	- 300 beds
Hospital Admissions	95 admits	165,000 admits	151,900 admits	- 13,100 admits
ER Visits	275 visits	477,600 visits	439,700 visits	- 37,900 visits
Outpatient Visits	275 visits	477,600 visits	439,700 visits	- 37,900 visits
Inpatient Days	493 days	856,200 days	788,300 days	- 67,900 days
TOTAL MEDICAL ENCOUNTERS[3]		**1,811,400 encounters**	**1,667,700 encounters**	**- 143,700 encounters**

Footnotes:
1. Population estimates for entire unincorporated Riverside County at General Plan build out (2060). All results rounded to the nearest 100.
2. Build out scenarios for General Plan without and with the changes proposed per GPA No. 960.
3. Total of patient-contact statistics (outpatient visits, hospital admissions and hospital inpatient days).

Source: Riverside County General Plan, 2008. Riverside County Planning Dept., project land use data, 2011. Medical service standards for California from www.StateHealthFacts.org, 2008.

Using the demand factor for additional health clinics issued by the County Department of Public Health (one additional 15,000 to 20,000 square-foot facility for every 200,000 population increase), the additional population (13,020) arising from future development directly attributable to project changes (i.e., Table 4.17-Z) would represent an increment increase of 6.5% of the total need for an additional clinic. However, the total represents demand across Riverside County. The actual increases would be spread throughout the 19 Area Plans of unincorporated Riverside County, plus the remainder area of eastern desert not in an Area Plan. As such, the adverse effects on most individual regions would be small to negligible. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

To examine effects to the individual regions of Riverside County, the medical statistics were further broken down by Area Plan. Analysis indicated that effects would vary regionally, in the same pattern previously described. Approximately 30% of the increased demand would be concentrated in the Elsinore Area Plan region, with Palo Verde Valley (22%), Jurupa (16%), Mead Valley (14%) and Western Coachella Valley (11%) Area Plans accounting for another 8,300 medical encounters (roughly 60% total). The remaining 9% is distributed throughout Riverside County. Generally, the need for additional hospital beds, clinic space and staff would increase (or decrease) in the same proportions.

In terms of General Plan changes, the project would only incrementally affect most of Riverside County's Area Plans; in amounts not large enough to trigger the need for an additional medical clinic, for example, in any single county area. Not surprisingly, however, the increased demand for medical services shows up most clearly in the areas being planned for urbanization – the Meadowbrook and Good Hope Rural Village Overlays, in particular. In terms of environmental effects, future development accommodated by GPA No. 960 would contribute only incrementally to the need for additional medical facilities and staff throughout Riverside County to ensure adequate levels of service. Associated environmental impacts and mitigation associated with these additional needs are discussed below.

E. Medical Facilities – Impacts and Mitigation

Impacts to medical facilities and services that would result from implementation of the proposed project, GPA No. 960, were evaluated for significance and the need for mitigation, as indicated.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered medical facilities? Or, would it result in the need for new or physically altered medical facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any medical facilities?

Impact 4.17.F – Cause Adverse Environmental Effects Due to the Need for Medical Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, resulting in a small overall population increase that would contribute incrementally (by about 6.5%) to the need for an additional community clinic and generating roughly 13,500 medical encounters. However, since the population increase would be spread throughout unincorporated Riverside County and occur over 50 years, associated impacts to medical facilities and services would be negligible. In terms of overall General Plan build out, the project would result in a net decrease of roughly 143,700 Riverside County residents. Thus, for long-range provision of needed medical facilities and services, the project would slightly lower (by roughly 8%) the expected increase in demand for new or expanded medical facilities and services over time. In total, the project would not have a significant adverse effect on medical facilities or services, nor would it cause significant adverse environmental impacts by necessitating construction of new facilities.

1. Analysis of Impact 4.17.F

New development would introduce additional people within Riverside County to medical services. This would result in additional use of existing facilities and work for existing staff. When demand is great enough in a given region, an additional clinic or other medical facility would be built. However, in areas where development remained sparse, development of new facilities would be unlikely.

As discussed in Section 4.17.7.D, above, existing standards indicate that full build out of the existing General Plan would accommodate a population of roughly 1.7 million people within unincorporated Riverside County. To serve this population, the medical system (both county and private) would require an estimated total of 3,300 hospital beds and generate roughly 1.8 million medical service encounters. The land use changes associated with GPA No. 960 would reduce expected population of Riverside County by nearly 138,000 people and require 300 fewer beds and generate 143,700 fewer encounters. Diagnostic, laboratory, surgical, rehabilitation, mental health, pharmacy and other medical service needs would be similarly reduced. Accordingly, environmental impacts associated with construction of new or improved facilities would be avoided or postponed.

At the Area Plan level, however, as shown in Table 4.17-X, GPA No. 960 would allow for additional future development that would increase Riverside County's population by 13,000 people, mostly spread widely throughout Riverside County. This increase would require an additional 25 hospital beds and generate an additional 13,570 medical encounters. Overall, because some portions of Riverside County would experience a population decrease or neutral change, many areas of Riverside County would not have any significant adverse impact to medical services as a result of future development pursuant to this project.

Some areas would have minor increases. In these areas, future development as a result of the project would not result in significant adverse impacts on medical services and facilities. Also, these increases would occur incrementally over the next several decades, allowing ample time for long-range planning and provision of necessary services.

The three areas covered by the Elsinore, Palo Verde Valley and Jurupa Area Plans, however, would need more additional facilities and services (for example, 7, 6 and 4 more hospital beds, respectively). In these areas in particular, additional medical services and facilities would be required to continue to meet the community demand for care.

It should also be remembered that the build out of the new development leading to this population growth is projected to take roughly 50 years. This is ample time to allow for adequate long-range planning and provision of additional services as need arises. In addition, GPA No. 960 is projected to result in roughly 138,000 fewer people at build out than originally planned for under the current General Plan and would similarly reduce the need for additional medical services. This change would be reflected in any of several ways, including through a reduction in the capacity needed within existing facilities, by delaying the need for construction of new facilities or by reducing the size of new medical facilities constructed. In total and based on the 6.5% increase in community demand attributable to project-related new development potential, the project would not have a significant adverse effect on medical facilities or services. No project-specific mitigation is needed.

2. Regulatory Compliance for Impact 4.17.F

The above analysis indicates that this impact would be less than significant and hence no project-specific mitigation is needed. Moreover, the following General Plan policy and existing mitigation measures from prior EIR No. 441 would further reduce or minimize this already insignificant impact.

a. Compliance with Proposed New or Revised Riverside County General Plan Policies

General Plan Policy LU 5.1 would further contribute to ensuring development impacts to medical services and facilities are less than significant. The policy directs the County of Riverside to take action to ensure that development does not cause growth to exceed acceptable levels of service for medical facilities. See Section 4.17.7.B for full text of the policy.

b. Compliance with Existing Mitigation Measures from EIR No. 441

In EIR No. 441, prepared for the 2003 RCIP General Plan, Mitigation Measures 4.15.7A and 4.15.7B were imposed to reduce impacts to medical facilities and services to less than significant. Although the potential impacts of this project are already less than significant, these measures were programmatic in nature and thus remain applicable to this project.

Existing Mitigation Measure 4.15.7A: Riverside County shall perform a periodic medical needs assessment to evaluate the current medical demand and level of medical service provided within each Area Plan. A periodic medical needs assessment shall be conducted every three years.

Existing Mitigation Measure 4.15.7B: Riverside County shall fund the new construction and/or expansion of existing medical facilities according to the level of demand for medical services. The level of demand would be based on and determined by the outcome of the periodic medical needs assessments.

F. Medical Facilities – Level of Significance After Mitigation

The analysis presented above indicates that development consistent with the proposed project, GPA No. 960, would have less than significant impacts on medical services and facilities. In addition, compliance with the above-listed existing General Plan policy and existing Mitigation Measures 4.15.7A and 4.15.7B from EIR No. 441, would further reduce or avoid the insignificant impacts associated with the project.

Section 4.18

Transportation and Circulation

Section 4.18 Transportation and Circulation

4.18.1 Introduction

This section assesses the potential impacts on Riverside County's Transportation and Circulation network that could result from future development and circulation system changes pursuant to the proposed project, General Plan Amendment No. 960 (GPA No. 960).

Given the comprehensive nature of the land use and policy changes, the analysis of transportation and circulation impacts are presented on a countywide basis. This analysis is organized around nine major impact areas, corresponding to the major transportation sub-topics typically addressed in transportation studies. These nine major impact areas are identified below in Table 4.18-A (Major Transportation Impacts).

Table 4.18-A Major Transportation Impacts

Impact Number	Issue	Description
4.18.A	County Roadways	Considers how land use, roadway network and policy changes under GPA No. 960 will affect Riverside County roadways
4.18.B	CMP Network/Policies	Evaluates the effect of land use and transportation changes under GPA No. 960 will affect the CMP network and policies
4.18.C	Air Travel	Assesses how GPA No. 960 will affect existing and proposed air travel facilities
4.18.D	Waterborne or Rail	Assesses how GPA No. 960 will affect existing and proposed waterborne and rail travel
4.18.E	Transportation Safety	Evaluates how GPA No. 960 will affect safety for drivers, transit users, bicycles, and pedestrians
4.18.F	Road Maintenance	Considers the effect upon a need for new or altered maintenance of roads
4.18.G	Effects during Construction	Evaluates the effect upon circulation during the project's construction
4.18.H	Emergency Vehicle Access	Considers how GP960 will effect access by emergency vehicles
4.18.I	Alternative Transportation	Assesses whether GPA No. 960 will affect use of the transportation system by transit users, bicycles, and pedestrians

Due to comments received regarding GPA No. 960 and the original draft of EIR No. 521, certain land use and network modifications have been incorporated into GPA No. 960 and have been evaluated as part of this traffic analysis for this recirculated version of EIR No. 521. These modifications include, in part, the removal of the Villages of Lakeview project land use and circulation network designations from the Lakeview/Nuevo Area Plan. The original General Plan land uses have been substituted in place of the Villages of Lakeview land uses. The circulation network has been modified to remove the circulation plan for the Villages of Lakeview, but does reflect the current status of planning for the MidCounty Parkway with respect to interchange locations. This factor, together with the Lakeview Design Guidelines have resulted in some minor modifications to the original General Plan circulation network, and are now presented in GPA No. 960, as currently proposed.

With these modifications, the traffic model was rerun in order to assess the consequence of these changes for both the GPA No.960 scenario and the 2003 General Plan scenario. The traffic model results generally show a reduction in traffic volumes on the local Arterial network in the immediate Lakeview/Nuevo area, including the Mid-County Parkway. The 2003 General Plan scenario indicates a slight increase in MidCounty Parkway traffic volumes easterly of the Lakeview/Nuevo area. There is also a slight reduction of traffic volume on the I-215 that changed its Volume to Capacity ratio by 1%, but none of the changes are significant enough to make any real difference to the analysis. Several figures in Appendix E have been updated to illustrate the findings of this evaluation. The new figures are dated December 18, 2014. The removal of the Villages at Lakeview project does have the localized impact of reducing forecast traffic volumes, but has no discernable influence on countywide traffic patterns or levels of service. As such, the only change to the previously circulated traffic analysis is to augment the analysis for the Lakeview/Nuevo area to evaluate the currently proposed land use and circulation plans which, in general, reflect the pre-Villages at Lakeview condition.

4.18.2 Baseline Environmental Setting Transportation and Circulation

A. Baseline Data Sources

Pursuant to CEQA, the descriptions of the physical environmental conditions provided in this EIR are as they exist at the time of the issuance of the Notice of Preparation (NOP), that is, April 13, 2009. This environmental setting will constitute the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope of this project, the lengths of time required to survey and assess baseline conditions, and because this is a programmatic EIR, the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). Accordingly, the data set that is representative of the 2009 baseline conditions is used for purposes of assessing impacts, but more recent data is also presented in some instances to provide a fuller and more detailed analysis. In these instances, a discussion of how the more recent data is or is not expected to differ from the baseline conditions is provided. The decision to reflect more recent data, where available, was made to ensure the fullest possible disclosure of potential impacts, and to provide the most robust discussion of potential impacts based on available substantial evidence. It should be noted here that 'substantial evidence' refers to "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact," (PRC Section 21080(e) (1)). Further, 'substantial evidence' does not include 'argument, speculation, unsubstantial opinion or narrative, evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.'

B. Baseline Roadways

Due to the interrelationship of urban and rural activities (employment, housing and services), and the low average density of existing land uses, the private automobile is the dominant mode of travel within Riverside County. Trips by mass transit currently represent less than 2% of all trips made in Riverside County. Public transportation, where service is available, is utilized primarily by a transit-dependent population (senior citizens, students, low-income residents, and the physically disabled) that generally do not have access to automobiles.

Riverside County's industrial and agricultural economies depend on safe and efficient goods movement. The County of Riverside is responsible for maintaining an extensive network of low-volume rural roads in sparsely settled areas to service goods movement and the agricultural industry. Large trucks are the primary means of transporting such goods. In addition, freight rail is an important backbone of the goods movement industry in Riverside County.

Riverside County is linked to Los Angeles and Orange Counties principally by State Route 60 (SR-60, Pomona Freeway), Interstate 10 (I-10, San Bernardino Freeway), SR-91 (Riverside Freeway), and SR-74 (Ortega Highway). Interstate 15 freeway (I-15) and other minor conventional highways provide links to San Diego County. Links to San Bernardino County are provided by I-15 and I-215, as well as by other major and minor local roadways. I-10 freeway provides a connection to destinations in Arizona; I-15 and I-215 provide access through San Bernardino County to Nevada including its primary recreation areas (Lake Mead and Las Vegas). In addition, I-15 provides access south to San Diego and its many tourist and recreational amenities, and to Mexico via I-5 and I-805.

The highway system includes numerous county roadways, as well as roadways within each of the 28 cities in Riverside County. Some of the major roadways in Riverside County include Alessandro Boulevard, Cajalco Road, Center Street, Domenigoni Parkway, Grand Avenue, La Sierra Avenue, Magnolia Avenue, Monterey Avenue, Murrieta Hot Springs Road, Palm Drive, Ramon Road, Ramona Expressway, Rancho California Road, Temescal Canyon Road, Van Buren Boulevard, Washington Street, and others.

Operating conditions on a roadway system are often described using a concept called "Level of Service." ~~The 2010 (5th Edition) of the Highway Capacity Manual (HCM) defines the term Level of Service (LOS) thusly:~~

> ~~*"A quantitative stratification of a performance measure or measures that represent quality of service, measured on an A – F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."*~~

LOS is basically a qualitative characterization of the operational conditions of various freeway, arterial and intersection facilities, as well as alternative modes of transportation. It is a simple means of describing a very complex interrelationship between factors affecting system capacity and travel demand.

"The task of driving involves a progression of continuously changing action/reaction conditions based on an infinite number of variables and ever-changing conditions. During the past century, scientists and engineers have sought methods and systems to describe, evaluate, simulate and predict traffic flows under various conditions. During this time, physicists, psychologists, human behaviorists, statisticians, physiologists and many others have collaborated with traffic engineers to create a more accurate picture of driver behavior and traffic flow."

In analyzing the performance of transportation facilities, it is important to identify the level of analysis needed based upon the scope of the project being evaluated. At times an analysis may seek to describe or evaluate the interaction of individual vehicles in order to determine intersection LOS and recommend appropriate design features such as lane configuration and traffic signal timing. This is a mirco level analysis, often utilized when evaluating proposed intersection improvements or the impact of individual development projects. On the other hand, engineers and planners may need to evaluate a transportation network or system, looking into the distant future to forecast demand and provide a context for recommended capacity enhancements. This is a macro level analysis and reflects an aggregate overall measure of traffic conditions, as in the analysis of the General Plan buildout. LOS parameters have been developed for both types of analysis and for various facility types.

Descriptions of highway traffic flow are generally correlated to the type of access control used on the facility and the level of analytical detail sought in the analysis. Traffic moving on facilities such as freeways, multilane highways and two-lane rural roadways is largely unaffected by intersection controls such as traffic signals and stop signs. Traffic flow under these conditions is broadly referred to "uninterrupted flow." Traffic flow under these conditions is governed by the interaction of adjacent vehicles as drivers accelerate, decelerate and change lanes in response to the movement of other vehicles and the design features of the roadway. In contrast, traffic in an urban setting with multiple intersections and direct driveway access must be periodically stopped to avoid conflicts. This is typically accomplished through the use of traffic control devices, such as stops signs or traffic signals. These regular starting and stopping conditions effectively regulate the characteristics and amount of flow on such roadways. Traffic operating under these conditions is referred to as "interrupted flow."

There are various factors that affect traffic flow; speed, vehicle density, the mix of vehicle types, access controls, terrain, presence of pedestrians and bicyclists, roadway design geometrics, lane widths, number of lanes, plus many more. One of the most significant factors affecting traffic flow is the number of vehicles desiring to use a certain segment of roadway. As the volume of traffic increases, the density of vehicles increases, speed is reduced, a driver's freedom of lane choice is limited. Theoretically, at some point, when the traffic volumes exceed the "capacity" of a facility the system breakdowns and traffic no longer flows. The Highway Capacity Manual defines capacity as "the maximum hourly rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, traffic and control conditions."

The Highway Capacity Manual provides the following definitions of LOS to describe traffic flow characteristics for both uninterrupted flow and interrupted flow type facilities (signalized intersections).

Table 4.18-B (Uninterrupted Traffic Flow Facilities Level of Service) provides a qualitative description of the various levels of service for facilities with uninterrupted flow, basically freeways, facilities where the mainline does not stop for cross traffic. Table 4.18-C (Interrupted Traffic Flow Facilities Level of Service) provides the same type of qualitative description of the various levels of service for facilities that do have interrupted flow. These include conventional state highways and local surface streets that intersect with other highways and streets. For facilities with interrupted flow, the primary constraint is usually the delay experienced at intersections. For both conditions, the HCM provides detailed instruction on how to calculate the level of service based on existing or future operating characteristics.

Table 4.18-B Uninterrupted Traffic Flow Facilities Level of Service

LOS	Definition
A	Describes completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and by driver preferences. Maneuverability within the traffic stream is good. Minor disruptions to flow are easily absorbed without a change in travel speed.
B	Also indicates free flow, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver. Minor disruptions are still easily absorbed, although local deterioration in LOS will be more obvious.
C	The influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles. Minor disruptions can cause serious local deterioration in service, and queues will form behind any significant traffic disruption.
D	The ability to maneuver is severely restricted due to traffic congestion. Travel speed is reduced by the increasing volume. Only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	Represents operations at or near capacity; an unstable level. Vehicles are operating with the minimum spacing for maintaining uniform flow. Disruptions cannot be dissipated readily, often causing queues to form and service to deteriorate to LOS F.
F	Represents forced or breakdown flow. It occurs either when vehicles arrive at a rate greater than the rate at which they are discharged or when the forecast demand exceeds the computed capacity of a planned facility. Although operations at these points – and on sections immediately downstream – appear to be at capacity, queues form behind these break-downs. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Transportation Research Board, Highway Capacity Manual, 5th Ed., 2010, page 11-6

Table 4.18-C Interrupted Traffic Flow Facilities Level of Service

Level of Service	Definition
A	Describes operations with a low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	Describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	Describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent.
F	Describes operations with control delay in excess of 80 seconds per vehicle. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high volume-to-capacity ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Source: Transportation Research Board, Highway Capacity Manual, 5th Ed., 2010, pages 16-7 and 16-8.

Contemporary traffic models have been developed to predict travel patterns based upon forecasts of future socioeconomic and land use development characteristics. That travel demand is then translated into trips which are assigned to various modes of travel. Vehicular trips are then distributed to a coded roadway network based on trip productions vs trip attractions. For example, commercial and employment areas will attract trips generated in residential areas. The traffic volumes that the model assigns to the various roadway links is capacity constrained by the way that the roadway network is coded, i.e. freeway lanes have greater capacity than arterial lanes and arterial lanes have greater capacity than collector lanes. The number of lanes of various classifications of roadways will also affect their capacity. Even so, the traffic model can assign more traffic to a facility than it has the capacity to handle if there are no viable alternative routes available to accommodate the traffic. In such cases, the network is then reevaluated to see where additional capacity can be added.

For the purposes of General Plan analysis, Riverside County has established daily traffic volume range breaks for Circulation Element roadways, which correspond to various levels of service for each facility type. These range breaks, indicating maximum two-way daily volumes for LOS C, D and E, by facility type are presented in Table 4.18-D *Capacity volumes for freeways, expressways and mountain arterials are reflective of facilities with uninterrupted flow, while the capacity values for arterial, major, secondary and collector designations recognize that these facilities are generally more urban in nature and are subject to interrupted flow conditions. It may be noted that the traffic volume values for a two-lane mountain arterial are greater than for a two-lane collector, but that a four-lane mountain arterial has less capacity than a four-lane arterial. This because the arterial in general does have a relatively high degree of access control, while the capacity of the mountain arterial is more constrained due to the effect of topography on horizontal and vertical roadway alignment. Likewise, urban arterials are anticipated to have a high degree of access control, but not to the extent that would be anticipated with a freeway or expressway. Thus, the LOS thresholds for a six-lane expressway are much higher than for a six-lane urban arterial.* ~~(Segment Volume Capacities/ Level of Service for Riverside County Roadways). These figures have been prepared in accordance with transportation professional standards and practices, to represent the level of service standards contained in the 2010 HCM.~~

Table 4.18-D Segment Volume Capacities/Level of Service for Riverside County Roadways

Roadway Classification	Number of Lanes	Maximum Two-Way Average Daily Traffic (ADT) Volume		
		Level of Service C	Level of Service D	Level of Service E
Collector	2	10,400	11,700	13,000
Secondary	4	20,700	23,300	25,900
Major	4	27,300	30,700	34,100
Arterial	4	29,600	33,400	37,000
Mountain Arterial	2	12,900	14,500	16,100
Mountain Arterial	4	25,500	28,700	31,900
Urban Arterial	6	45,000	50,600	56,300
Urban Arterial	8	69,000	78,000	87,000
Expressway	4	53,000	58,000	64,000
Expressway	6	79,000	87,000	95,000
Expressway	8	106,000	119,000	132,000
Freeway	4	80,000	91,000	100,000
Freeway	6	102,000	123,000	132,000
Freeway	8	136,000	164,000	176,000
Freeway	10	169,000	205,000	220,000
Ramp(1)	1	16,000	18,000	20,000

Footnotes:
1. Ramp Capacity is given as a one-way traffic volume.
Source: Riverside County Transportation Department

The values displayed in Table 4.18-D are an updated version to the values found in the 2003 General Plan. The prior figures had not been updated since 2001. The revised values were developed based upon research of values used for neighboring counties, a review of current recommended practices and methodologies as endorsed by the Institute of Transportation Engineers, and field observations of existing operating characteristics.

The LOS volume capacity values for five of the roadway classifications did not change at all. The volume figures for the four-lane Mountain Arterial were reduced by about 14% due to added consideration of the effects of both vertical and horizontal geometric design factors. Four-lane Arterial and six-lane Urban Arterial capacity values increased an average of between 3 and 4 ½ %. This is due in large part to improved traffic control measures such as signal coordination and signal timing, which result in greater through put on the roadway link segments.

The largest increases in capacity are shown for the eight-lane Urban Arterial and Expressway classifications, with increases of 20 to 62 %. These values also reflect enhanced traffic flow due to improved traffic control measures and in addition take into account very restrictive access control on these types of roadways. Observations of similar facilities in Orange County indicate that these values reflect reasonable expectations with respect to LOS.

Capacity volumes for Freeways were also increased, anywhere from 5% for a ten-lane facility to more than 30% for a four-lane facility. These values are largely based on field observations that have seen freeway volumes increase dramatically over the past decade, but have not resulted in the decline in LOS that had previously been anticipated.

These values were used to evaluate the traffic model results and make refinements to the roadway network designations. As these values are part of the technical data used for the purposes of traffic analysis, they are not a policy element of the General Plan and thus are no longer included in the General Plan document. LOS criterion is included in the General Plan Transportation and Circulation policies to provide guidance in the evaluation of traffic impacts as part of the development review process. The following are the current General Plan policies relative to LOS.

Policy C 2.1: *Maintain the following countywide target Levels of Service:*

LOS "C" along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections.

LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities. (AI 3)

Policy C 2.2: *Apply level of service standards to new development via a program establishing traffic study guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development. (AI 3)*

In addition, the following margin notes are included in the current General Plan to further describe LOS and the rationale behind the lower LOS target of "D" in Community Development (Urban) areas, and LOS "E" in designated community centers, in order to support transit-oriented development and walkable communities.

> ***Level of Service***
>
> *A qualitative measure describing the efficiency of traffic flow. Level of Service designations are used to describe the operating characteristics of the street system in terms of the level of congestion or delay experienced by traffic.*
>
> *To achieve the true intent of community center design, Level of Service designations are typically lower (LOS E) to minimize the impacts of accommodating uncongested roadways and to maximize pedestrian use. Higher level of service designations (LOS A, B, C) require wider road widths, and as a result, would create circulation systems that are more accommodating to automobiles than pedestrians.*

Per the current policies, LOS "D" is allowed at the intersection of any General Plan roadways designated as a secondary highway or greater classification within areas designated as Community Development, that is those areas generally designated for urban type growth. Further, the General Plan currently allowed LOS "E" in designated community centers to the extent that it would support transit-oriented development and walkable communities.

GPA No. 960 proposes to revise the current LOS policy. There are several factors which influenced the decision to propose LOS policy changes. One of those factors was a review of the LOS policies of other agencies. It was discovered that most of the neighboring cities and counties, as well as the vast majority of cities within Riverside County generally target LOS D as their benchmark, with exceptions that permit even lower levels of service in certain instances. Imperial County and the eastern region of San Bernardino County along with the Cities of Banning, Calimesa, Lake Elsinore, Murrieta and Wildomar are the only adjacent jurisdictions that currently target LOS "C" for General Plan roadways during peak hours. The City of Banning has a general Plan amendment in process at present that will revise the City's LOS threshold to LOS "D." Table 4.18-E includes a comparison of LOS targets by jurisdiction.

The LOS policy revision as originally proposed has been further modified in response to several comments received from the public, in concert with additional review of the specifics of some of the policies of neighboring jurisdictions. The LOS policy as now proposed no longer calls for a Countywide LOS target, however, LOS "C" will continue to be the target LOS for the vast major of the County unincorporated area, including most of the eastern desert region and the San Jacinto Mountains, those areas that are most rural and adjacent to other jurisdictions that currently have an established LOS target of "C."

In the review of LOS policies for neighboring jurisdictions, it was discovered that San Diego County allows LOS "E" to include areas where the addition of travel lanes to achieve a lower LOS would have a significant adverse impact on environmental and cultural resources such as habitat, wetlands, MSHCP preserves, wildlife movement, stands of mature trees, historic landmarks, or archaeological sites. As adverse impacts to such sensitive resources are also a major concern in Riverside County, similar language was originally recommended in the revised Policy C 2.1. The current proposal has removed this language and instead recognizes that the Board of Supervisors, due to their discretionary powers, may approve a project that fails to meet the LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

While the current policy allows LOS "E" as a matter for staff determination and only in community centers to the extent that it would support transit-oriented development and walkable communities, the approval decision is now elevated to the level of the Board of Supervisors to determine if LOS "E" should be allowed. This does not eliminate input from any other bodies that typically provide feedback or approvals on such matters. In practice, staff would be responsible for recommending whether a project satisfies the criteria for allowing LOS "E," as well as the Planning Commission, but the ultimate decision will rest with the Board of Supervisors.

Roadway construction projects undertaken by the County as lead agency will now need to evaluate project priorities based upon the new LOS targets. As such, it is anticipated that some roadway widening projects will be delayed, reduced in scope or eliminated. For construction projects mitigating traffic impacts to LOS "E" the Board of Supervisors need make findings that the project is consistent with the new LOS policy.

Another reason for the proposed LOS revisions is that the wording of the current policy is often misconstrued. The current policy begins by stating; "Maintain the following countywide target Levels of Service: LOS C along all County maintained roads and conventional state highways." This opening statement is often misconstrued as meaning that LOS "C" is the Countywide target everywhere, but this is not the case. Even in that opening declaration it states; "target Levels of Service," plural. There are various target levels of service at present. LOS "D" is allowed currently in any area with a foundation Land Use Designation of Community Development. This includes all urban or urbanizing areas of the unincorporated County. Many newly incorporated cities have adopted the County General Plan, at least on an interim basis. This would mean that their minimum target LOS is "D" with LOS "E" allowed in community centers as well. The proposed policy revisions do go beyond just clarifying the current policies, but it is hoped that the revised wording will be more easily understood.

~~Current Riverside County LOS policies call for a target minimum LOS C, with exceptions for Community Development Areas where LOS D is generally deemed acceptable, and in community centers promoting Transit Oriented Development and walkable communities where LOS E may be allowed. However, most of the neighboring cities and counties, as well as the vast majority of cities within Riverside County generally target LOS D as their minimum level of service, with exceptions that permit even lower levels of service in certain instances. Table 4.18-E (LOS Comparison by Jurisdiction) presents a comparison of LOS standards by jurisdiction. These policies are in keeping with generally accepted engineering practices within the transportation profession.~~ *The revised policy language as now proposed* ~~As such, GPA No. 960 is proposing revisions to the LOS policies for Riverside County which~~ will bring Riverside County's LOS policy in line with the policies of other local jurisdictions in the region. While allowing marginal increased levels of traffic, this change in policy will serve to support other policies promoting alternative modes of transportation and reduce the need to expand certain street and highway facilities, thus reducing future infrastructure costs and providing a more favorable environment for pedestrians and bicyclists.

Table 4.18-E LOS Comparison by Jurisdiction

~~#~~	~~Jurisdiction~~	~~Target LOS~~ [1]
~~Counties~~		
~~1~~	~~County of Imperial~~	~~C~~
~~2~~	~~County of Los Angeles~~	~~D~~
~~3~~	~~County of Orange~~	~~D~~
~~4~~	~~County of San Bernardino~~	~~D~~
~~5~~	~~County of San Diego~~	~~D~~
~~Cities~~	~~-~~	~~-~~
~~1~~	~~City of Banning~~	~~C/D~~[3]
~~2~~	~~City of Beaumont~~	~~D~~
~~3~~	~~City of Blythe~~	~~--~~
~~4~~	~~City of Calimesa~~	~~C~~
~~5~~	~~City of Canyon Lakes~~	~~--~~
~~6~~	~~City of Cathedral City~~	~~E~~
~~7~~	~~City of Coachella~~	~~--~~
~~8~~	~~City of Corona~~	~~D~~
~~9~~	~~City of Desert Hot Springs~~	~~D~~

10	City of Eastvale	C
11	City of Hemet	D
12	City of Indian Wells	D
13	City of Indio	D
14	City of Jurupa Valley	--
15	City of La Quinta	D
16	City of Lake Elsinore	--
17	City of Menifee	D
18	City of Moreno Valley	C/D[4]
19	City of Murrieta	C/D[5]
20	City of Norco	--
21	City of Palm Desert	D
22	City of Palm Springs	D
23	City of Perris	E
24	City of Rancho Mirage	D
25	City of Riverside	D
26	City of San Jacinto	D
27	City of Temecula	D
28	City of Wildomar	C

Footnotes:
1 Sources are per General Plan of jurisdiction listed.
2 LOS D allowed on rural roads. LOS E on urban roadways.
3 LOS D proposed in General Plan Update.
4 LOS C; although LOS D allowed during peak hours.
5 LOS C for segments; LOS D for intersections.
-- Not available or not identified.
Source: Per General Plan of jurisdiction indicated.

#	Jurisdiction	Target LOS[1]
	COUNTIES	
1	County of Imperial	C
2	County of Los Angeles	D
3	County of Orange	D
4	County of San Bernardino	C/D[2]
5	County of San Diego	D
6	County of Kern	D
7	County of Sacramento	D/E[3]
8	County of Santa Clara	D

#	Jurisdiction	Target LOS[1]
	CITIES	
1	City of Banning	C/D[4]
2	City of Beaumont	D
3	City of Blythe	--
4	City of Calimesa	C
5	City of Canyon Lakes	--
6	City of Cathedral City	E
7	City of Coachella	D
8	City of Corona	D
9	City of Desert Hot Springs	D
10	City of Eastvale	C/D[5]
11	City of Hemet	D
12	City of Indian Wells	D
13	City of Indio	D
14	City of Jurupa Valley	--
15	City of La Quinta	D
16	City of Lake Elsinore	C/D/E[6]
17	City of Menifee	D
18	City of Moreno Valley	C/D[5]
19	City of Murrieta	C/D[7]
20	City of Norco	--
21	City of Palm Desert	D
22	City of Palm Springs	D
23	City of Perris	E
24	City of Rancho Mirage	D
25	City of Riverside	D
26	City of San Jacinto	D
27	City of Temecula	D
28	City of Wildomar	C
29	City of Irvine	D/E[8]
30	City of Ontario	E
31	City of Rancho Cucamonga	D

Footnotes:
1 – Source: Per General Plan of Jurisdiction
2 – LOS C allowed in desert region, LOS D in Western County
3 – LOS D allowed on rural roads. LOS E on urban roadways.
4 – LOS D proposed in General Plan Update
5 – LOS C; although LOS D allowed during peak hours
6 – LOS C, LOS D in urban, LOS E in certain areas
7 – LOS C for segments; LOS D for intersections
8 – LOS D, LOS E allowed in certain areas
-- Not available or not identified

The change in LOS will also serve as a deterrent to incompatible land uses in outlying areas by reducing the potential of infrastructure encroachment on sensitive adjacent land uses.

To assess the performance of the existing roadway system in the County, the LOS on segments of the County's roadway system was determined by cross referencing the values contained in Table 4.18-D with existing daily traffic volumes and facility characteristics. Figures 4.18.1.1 to 4.18.5.21, located in Appendix EIR-4.E, provide specific information related to existing roadway network, traffic flow/volumes, and level of service.

The results indicate that in areas governed by the current LOS C policy, most roadways continue to operate at LOS C or better, with fewer than 100 miles of roadway in this category, vastly scattered throughout Riverside County, that are forecast to operate at LOS D. Table 4.18-F (Roadways Under Current LOS C Target Policy which are Forecast to Operate at LOS D) identifies these facilities by Roadway Classification and number of centerline miles.

Table 4.18-F Roadways Under Current LOS C Target Policy Forecast to Operate at LOS D

Roadway Classification	Sum of Centerline Miles
Collector	12.94
Secondary	5.84
Major	6.3
Arterial	20.90
Urban Arterial	3.97
Freeway/Expressway	9.74
TOTAL	**59.69 miles**

Source: Riverside County Transportation Department

The current Riverside County Roadway System consists of more than 2,100 miles. The centerline miles shown above, which indicate the number of miles of County of Riverside roadway affected by the proposed change in LOS policy, represent less than 3% of the total road system.

Further details of the affected roadways are presented in Appendix EIR-4.F. *Data is grouped by road name and Area Plan, along with indicating the project LOS for both the 2003 General Plan and GPA No. 960.* ~~which groups the data by road name and Area Plan, while indicating the projected LOS for both the 2003 General Plan and GPA No. 960 scenarios.~~

For all other General Plan roads included in the analysis, the majority of Riverside County's roadway and highway system operates at LOS D or better, meaning that motorists on most roadways do not experience substantial delays, even during peak travel hours, and roadway segments are generally operating under capacity.

There are also a number of heavily congested roadway and highway segments within the County of Riverside. Table 4.18-G (Baseline Roadway Levels of Service for Freeways and State Routes) identifies segments of interstate and state routes where the daily traffic volumes indicate LOS E or F conditions. The source for the existing traffic volumes in Table 4.18-G is the 2009 Caltrans publication *Traffic Volumes on California State Highways*. This source is used to reflect baseline conditions on state and interstate routes, since it represents the most recently available uniform and consistent compilation of traffic volumes on state routes. As the information in Table 4.18-G indicates, under existing conditions, there are a number of interstate and state route segments in Riverside County that operate at or over capacity (e.g., LOS E or LOS F). These segments are highlighted.

Using Riverside County's traffic volume range breaks, I-10 is the only major freeway in Riverside County that is not operating at or over capacity for its entire length through the County of Riverside. I-15, I-215 and SR-60, on the other hand, operate at or over capacity on a number of segments through Riverside County. SR-91

operates at LOS F for the entire length between the Orange County line and the SR-91 junction with SR-60/I-215.

Some of the non-freeway state routes also operate at or over capacity. These include:

- SR-62: Indian Avenue to San Bernardino County at LOS F.
- SR-74: through the City of Lake Elsinore at LOS F and a segment west of Hemet at LOS E.
- SR-79: between Benton Road and Simpson Avenue at LOS F; however, Riverside County's widening project on this facility is underway and will bring the LOS to within acceptable levels under existing conditions.
- SR-111: several segments in the Indian Wells/Palm Desert area at LOS E.

All other freeways and state routes have daily traffic volumes that indicate LOS D or better.

Table 4.18-G Baseline Roadway Levels of Service for Freeways and State Routes

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
I-10	San Bernardino County Line-County Line Road	Freeway	6	103,000	D or better
I-10	County Line Road –Calimesa Blvd.	Freeway	6	95,000	D or better
I-10	Calimesa Blvd.-Cherry Valley Blvd.	Freeway	6	98,000	D or better
I-10	Cherry Valley Blvd.-San Timoteo Canyon Road	Freeway	6	90,000	D or better
I-10	San Timoteo Canyon Road-Jct. Rte 60	Freeway	6	89,000	D or better
I-10	Jct. Rte 60 – Jct. Rte 79 South	Freeway	8	126,000	D or better
I-10	Jct. Rte 79 South– Pennsylvania Ave.	Freeway	8	128,000	D or better
I-10	Pennsylvania Ave. – Highland Springs Ave.	Freeway	8	134,000	D or better
I-10	Highland Springs Ave.- Banning, Sunset Avenue	Freeway	8	129,000	D or better
I-10	Sunset Ave.-22nd St.	Freeway	8	126,000	D or better
I-10	22nd St. – Jct. Rte 243(South Eighth St.)	Freeway	8	123,000	D or better
I-10	Jct. Rte 243(South Eighth St.) –Banning, Hargrave St.	Freeway	8	120,000	D or better
I-10	Hargrave St.- East Ramsey St.	Freeway	8	110,000	D or better
I-10	East Ramsey St. – Reservation Road/Fields Road	Freeway	8	113,000	D or better
I-10	Reservation Road/Fields Road – Apache Trail Road	Freeway	8	106,000	D or better
I-10	Apache Trail Road – East Cabazon Interchange, Main Street	Freeway	8	94,000	D or better
I-10	East Cabazon Interchange, Main Street-Verbenia Ave.	Freeway	8	94,000	D or better
I-10	Verbenia Ave.-Jct. Route 111	Freeway	8	94,000	D or better
I-10	Jct Rte 111-Whitewater Interchange	Freeway	8	81,000	D or better
I-10	Whitewater Interchange – Jct. Rte 62 North	Freeway	8	81,000	D or better
I-10	Jct Rte 62 north – Indian Ave.	Freeway	8	79,000	D or better
I-10	Indian Ave.- Palm Dr./Gene Autry Trail	Freeway	8	81,000	D or better
I-10	Palm Dr./Gene Autry Trail-Date Palm Dr.	Freeway	8	88,000	D or better
I-10	Date Palm Dr. – Ramon Road	Freeway	8	94,000	D or better
I-10	Ramon Road – Monterey Ave.	Freeway	6	96,000	D or better
I-10	Monterey Ave.-Cook Street	Freeway	6	97,000	D or better
I-10	Cook Street-Washington Street	Freeway	6	94,000	D or better
I-10	Washington Street – Jefferson St./Indio Blvd.	Freeway	6	83,000	D or better

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
I-10	Jefferson St./Indio Blvd.-Monroe St.	Freeway	6	68,000	D or better
I-10	Monroe St. – Jackson St.	Freeway	6	62,000	D or better
I-10	Jackson St. – North Jct. Rte 111/Auto Center Dr.	Freeway	6	57,000	D or better
I-10	North Jct. Rte 111/Auto Center Dr. – Rte 86 South	Freeway	6	52,000	D or better
I-10	Rte 86 South – Dillon Road	Freeway	4	25,000	D or better
I-10	Dillon Road – Cottonwood Springs Road	Freeway	4	22,500	D or better
I-10	Cottonwood Springs Road – Chiriaco Summit Interchange	Freeway	4	22,500	D or better
I-10	Chiriaco Summit Interchange – Hayfield Road	Freeway	4	23,000	D or better
I-10	Hayfield Road – Eagle Mountain Road	Freeway	4	23,000	D or better
I-10	Eagle Mountain Road – Jct. Rte 177 North	Freeway	4	23,000	D or better
I-10	Jct. Rte 177 North – Corn Springs Road	Freeway	4	21,400	D or better
I-10	Corn Springs Road – Ford Dry Lake	Freeway	4	21,400	D or better
I-10	Ford Dry Lake – Wiley's Well Rest Area	Freeway	4	21,300	D or better
I-10	Wiley's Well Rest Area – Mesa Dr.	Freeway	4	23,500	D or better
I-10	Mesa Dr. – Jct. Rte 78 South	Freeway	4	22,500	D or better
I-10	Jct. Rte 78 South – Lovekin Blvd.	Freeway	4	23,800	D or better
I-10	Lovekin Blvd. – Seventh Ave	Freeway	4	23,800	D or better
I-10	Seventh Ave – Jct. Rte 95 North	Freeway	4	25,000	D or better
I-10	Jct. Rte 95 North – Riviera Dr.	Freeway	4	25,500	D or better
I-10	Riviera Dr. – Arizona State Line	Freeway	4	26,000	D or better
I-15	San Diego County Line-S Jct. Rte 79	Freeway	8	130,000	D or better
I-15	S Jct. Rte 79 – Rancho California Rd.	Freeway	8	150,000	D or better
I-15	Rancho California Rd. – N Jct. Rte 79	Freeway	8	161,000	D or better
I-15	Temecula, Jct. Rte. 79 – Jct. Rte 215 North	Freeway	10	186,000	D or better
I-15	Jct. Rte 215 North – Murrieta Hot Springs Road	Freeway	6	109,000	D or better
I-15	Murrieta Hot Springs Road –California Oaks Rd.	Freeway	6	127,000	E
I-15	California Oaks Road-Clinton Keith Road	Freeway	6	124,000	E
I-15	Clinton Keith Road-Baxter Road	Freeway	6	123,000	D or better
I-15	Baxter Road-Bundy Canyon Road	Freeway	6	118,000	D or better
I-15	Bundy Canyon Road-Railroad Canyon Road	Freeway	6	113,000	D or better
I-15	Railroad Canyon Road-Main Street	Freeway	6	122,000	D or better
I-15	Main Street-Jct. Rte 74	Freeway	6	119,000	D or better
I-15	Jct. Rte 74-Nichols Road	Freeway	6	107,000	D or better
I-15	Nichols Road-Lake Street	Freeway	6	109,000	D or better
I-15	Lake Street-Indian Truck Trail	Freeway	6	115,000	D or better
I-15	Indian Truck Trail-Temescal Canyon Road	Freeway	6	121,000	D or better
I-15	Temescal Canyon Road-Weirick Road	Freeway	6	131,000	E
I-15	Weirick Road-Cajalco Road	Freeway	6	146,000	F
I-15	Cajalco Road-El Cerrito Road	Freeway	6	155,000	F
I-15	El Cerrito Road-Ontario Ave	Freeway	6	160,000	F
I-15	Ontario Ave-Magnolia Ave	Freeway	6	160,000	F
I-15	Magnolia Ave–Jct. Rte 91	Freeway	8	174,000	E
I-15	Jct. Rte 91– Hidden Valley Road	Freeway	8	157,000	D or better
I-15	Hidden Valley Road-2nd Street	Freeway	8	156,000	D or better

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
I-15	2nd St. – 6th St.	Freeway	6	150,000	F
I-15	6th St. – Limonite Ave.	Freeway	6	150,000	F
I-15	Limonite Ave. – Cantu-Galleano Ranch Road	Freeway	6	145,000	F
I-15	Jct. Rte 60-San Bernardino County Line	Freeway	8	214,000	F
SR-60	San Bernardino Co. Line – Milliken Ave.	Freeway	6[5]	187,000	F
SR-60	Milliken Ave. – Jct. Rte. 15	Freeway	6[5]	155,000	F
SR-60	Jct. Rte. 15 – Van Buren Blvd.	Freeway	6	124,000	E
SR-60	Van Buren Blvd. – Etiwanda Ave.	Freeway	6	137,000	F
SR-60	Etiwanda Ave. – Mission Blvd.	Freeway	6	123,000	D or better
SR-60	Mission Blvd. – Pedley Road	Freeway	6	123,000	D or better
SR-60	Pedley Road – Pyrite Street	Freeway	6	121,000	D or better
SR-60	Pyrite Street – Valley Way	Freeway	6	126,000	E
SR-60	Valley Way–Rubidoux Blvd	Freeway	6+2[5]	126,000	D or better
SR-60	Rubidoux Blvd–Crestmore Ave.	Freeway	6+2[5]	131,000	D or better
SR-60	Crestmore Ave.–Main St.	Freeway	6+2[5]	121,000	D or better
SR-60	Main St.–Orange St.	Freeway	6+2[5]	136,000	D or better
SR-60	Orange St.– Jct. Rtes. 91/215	Freeway	6+2[5]	132,000	D or better
SR-60	Jct. Rtes. 91/215 –East Jct. Rte 215	Freeway	6+2[5]	128,000	D or better
SR-60	East Jct. Rte 215-Day street	Freeway	6[5]	126,000	E
SR-60	Day St. –Pigeon Pass Rd	Freeway	4[5]	107,000	F
SR-60	Pigeon Pass Rd. –Heacock St	Freeway	4[5]	97,000	E
SR-60	Perris Boulevard-Nason Street	Freeway	4	78,000	D or better
SR-60	Nason Street-Moreno Beach Boulevard	Freeway	4	72,000	D or better
SR-60	Moreno Beach Boulevard-Redlands Blvd	Freeway	4	60,000	D or better
SR-60	Redlands Blvd. – Theodore Street	Freeway	4	52,000	D or better
SR-60	Theodore street – Gilman Springs Road	Freeway	4	52,000	D or better
SR-60	Gilman Springs Road-Jackrabbit Trail	Freeway	4	44,000	D or better
SR-60	Jackrabbit Trail – Jct. Rte 10	Expressway	4	44,000	D or better
SR-62	Rte 10 – Pierson Blvd	Freeway	4	19,000	D or better
SR-62	Pierson Blvd-Indian Ave	Freeway	4	17,000	D or better
SR-62	Indian Ave-San Bernardino County Line	Mtn. Art.	2	22,000	F
SR-71	Riverside Co. Line – Jct. Rte. 91	Expressway	4[5]	55,000	D or better
SR-74	Orange County Line-Grand Avenue	Mtn. Art.	2	9,800	D or better
SR-74	Grand Ave. –Lake Shore Dr.	Arterial	2[5]	18,500	F
SR-74	Lake Shore Dr. - Gunnerson St./ Strickland Ave.	Arterial	2[5]	24,000	F
SR-74	Gunnerson St./Strickland Ave. - Jct. Rte. 15	Arterial	2[5]	25,500	F
SR-74	Jct. Rte. 15 - Seventh St.	Arterial	4	31,000	D or better
SR-74	Seventh St. - D St.	Arterial	4	26,000	D or better
SR-74	D Street-Jct. Rte 215	Arterial	4	21,500	D or better
SR-74	Jct. Rte 215-Ethanac Road	Arterial	4	25,500	D or better
SR-74	Ethanac Road-Menifee Road	Arterial	4	24,500	D or better
SR-74	Menifee road-Jct. Rte 79 South	Arterial	4	30,500	D or better
SR-74	Jct. Rte 79 South-Warren Road	Arterial	4	33,500	E
SR-74	Warren Road- Lyon Ave	Arterial	4	29,500	D or better

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
SR-74	Lyon Ave. - State St.	Arterial	4[5]	31,500	D or better
SR-74	State St. - Jct. 79 North	Arterial	4[5]	29,500	D or better
SR-74	Jct. Rte 79 North- Yale Street	Major	4[5]	27,500	D or better
SR-74	Yale St-Cornell St.	Major	4[5]	25,500	D or better
SR-74	Cornell St. – Hemet St.	Major	4[5]	25,500	D or better
SR-74	Hemet St.- Mountain St.	Major	4	19,500	D or better
SR-74	Mountain St. – San Bern. Nat. Forest Boundary	Mtn. Art.	2	16,000	E
SR-74	San Bern. Nat. Forest Boundary – Jct. Rte 243 North	Mtn. Art.	2	3,700	D or better
SR-74	Jct. Rte 243 North – Jct. Rte 371 West	Mtn. Art.	2	3,400	D or better
SR-74	Jct. Rte 371 West – Homestead Road	Mtn. Art.	2	3,400	D or better
SR-78	Imperial County Line-32nd Ave/Palo Verde Blvd.	Arterial	2	1,700	D or better
SR-78	32nd Ave/Palo Verde Blvd.-Cranells Blvd/28th Ave	Arterial	2	2,000	D or better
SR-78	Cranells Blvd/28th Ave – 28th Ave/Neighbors Blvd	Arterial	2	1,800	D or better
SR-78	28th Ave/Neighbors Blvd –Broadway Street	Arterial	2	2,900	D or better
SR-78	Broadway street – Jct. Rte 10	Arterial	2	2,900	D or better
SR-78	Jct. Rte 10 – Hobson Way	Arterial	2	2,900	D or better
SR-79S	San Diego County Line - SR-371 (Cahuilla Road)	Mtn. Art.	2	2,200	D or better
SR-79S	SR-371-Sage Road	Mtn. Art.	2	8,300	D or better
SR-79S	West of Sage Road	Mtn. Art.	2	8,800	D or better
SR-79	Murrieta Hot Springs Road – Benton Road	Arterial	4	30,500	D or better
SR-79	Benton Road – Simpson Ave	Arterial	2	23,500	F
SR-79/ Winchester Rd	Simpson Ave- Jct. Route 74	Arterial	2	8,800	D or better
SR-79	Jct. Route 74 – Main Street in San Jacinto	Arterial	4	17,500	D or better
SR-79	Main Street in San Jacinto – Sanderson Avenue	Arterial	4	12,500	D or better
SR-79	Sanderson Avenue - California Ave	Expressway	4	27,800	D or better
SR-79	California Avenue – Beaumont Jct Rte. 10	Arterial	4	24,900	D or better
SR-86	Imperial County Line – 81st Ave	Arterial	4	14,300	D or better
SR-86	81st Ave – 80th Ave	Arterial	4	14,300	D or better
SR-86	80th Ave – Jct. Rte 195 North	Arterial	2	3,000	D or better
SR-86	Jct. Rte 195 North – Polk Street/70th Ave	Arterial	2	3,150	D or better
SR-86	Polk Street/70th Ave – 66th	Arterial	2	4,800	D or better
SR-86	66th Ave – Rte 111 West	Arterial	2	5,900	D or better
SR-91	Orange Co. Line - Green River Dr.	Freeway	8+4[5]	267,000	F
SR-91	Green River Dr. - Jct. Rte. 71 No.	Freeway	8+2[5]	253,000	F
SR-91	Jct. Rte. 71 No. - Serfas Club Dr.	Freeway	8+2[5]	256,000	F
SR-91	Serfas Club Dr. - Corona, Maple St.	Freeway	8+2[5]	257,000	F
SR-91	Corona, Maple St. - Corona, Lincoln Ave.	Freeway	8+2[5]	248,000	F
SR-91	Corona, Lincoln Ave. - Corona, West Grand Blvd.	Freeway	8+2[5]	255,000	F
SR-91	Corona, West Grand Blvd. - Corona, Main St.	Freeway	8+2[5]	247,000	F
SR-91	Corona, Main St. - Jct. Rte. 15	Freeway	10+2[5]	233,000	E
SR-91	Jct. Rte. 15 - McKinley St.	Freeway	8+2[5]	219,000	F
SR-91	McKinley St. - Pierce St.	Freeway	6+2[5]	209,000	F
SR-91	Pierce St. - Magnolia Ave.	Freeway	6+2[5]	182,000	F

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
SR-91	Magnolia Ave. - La Sierra Ave.	Freeway	6+2[5]	193,000	F
SR-91	La Sierra Ave. - Tyler St.	Freeway	6+2[5]	186,000	F
SR-91	Tyler St. - Van Buren Blvd.	Freeway	6+2[5]	186,000	F
SR-91	Van Buren Blvd. - Adams St.	Freeway	6+2[5]	173,000	F
SR-91	Adams St. - Madison St.	Freeway	6+2[5]	172,000	F
SR-91	Madison St. - Arlington Ave.	Freeway	6[5]	168,000	F
SR-91	Arlington Ave. - Central Ave./State St.	Freeway	6[5]	165,000	F
SR-91	Central Ave./State St. - Fourteenth St.	Freeway	6[5]	165,000	F
SR-91	Fourteenth St. - Eighth St.	Freeway	6[5]	161,000	F
SR-91	Eighth St. – La Cadena Dr./Poplar and Spruce St.	Freeway	6[5]	153,000	F
SR-91	La Cadena Dr./Poplar and Spruce St. - Jct. Rte. 60, Jct. Rte. 215 No.	Freeway	6[5]	149,000	F
US-95	Hobson Way – Sixth Ave	Arterial	2	3,500	D or better
US-95	Sixth Ave – Palo Verde Dam Road	Arterial	2	2,400	D or better
US-95	Palo Verde Dam Road – San Bernardino County Line	Arterial	2	2,000	D or better
SR-111	Imperial County Line – Indio Center Dr	Arterial	4[5]	7,500	D or better
SR-111	Indio Center Dr – Towne Ave	Arterial	4[5]	19,600	D or better
SR-111	Towne Ave – Monroe Street	Arterial	4[5]	23,500	D or better
SR-111	Monroe St.– Washington St.	Arterial	4[5]	27,500	D or better
SR-111	Washington St. - Racquet Club Dr.	Arterial	4[5]	27,500	D or better
SR-111	Racquet Club Dr. - Miles/Manitou Ave.	Arterial	4[5]	35,000	E
SR-111	Miles/Manitou Ave. - Cook St.	Arterial	4[5]	34,000	E
SR-111	Cook St. - Indian Wells City Limits	Arterial	4[5]	34,000	E
SR-111	Indian Wells City Limits - Portola Ave.	Arterial	4[5]	31,500	D or better
SR-111	Portola Ave. - Jct. Rte. 74 So.	Arterial	4[5]	34,000	E
SR-111	Jct. Rte. 74 So. - Bob Hope Dr.	Arterial	4[5]	31,500	D or better
SR-111	Bob Hope Dr. - Country Club Dr. (40th Ave.)	Arterial	4[5]	31,500	D or better
SR-111	Country Club Dr.(40th Ave.) - Frank Sinatra Dr.	Arterial	4[5]	28,500	D or better
SR-111	Frank Sinatra Dr. - Date Palm Ave./Broadway	Arterial	4[5]	31,500	D or better
SR-111	Date Palm Ave./Broadway - Golf Club Dr.	Arterial	4[5]	31,500	D or better
SR-111	Golf Club Dr. - Gene Autry Trail	Arterial	4[5]	32,000	D or better
I-215	Jct Rte 15 - Murrieta Hot Springs Road	Freeway	4	83,000	D or better
I-215	Murrieta Hot Springs Road – Los Alamos Road	Freeway	4	91,000	D or better
I-215	Los Alamos Road – Antelope Road	Freeway	4	88,000	D or better
I-215	Antelope Road – Scott Road	Freeway	4	89,000	D or better
I-215	Scott Road – Newport Road	Freeway	4	83,000	D or better
I-215	Newport road –McCall Blvd.	Freeway	4	80,000	D or better
I-215	McCall Blvd. – Ethanac Road	Freeway	4	74,000	D or better
I-215	Ethanac Road – South Jct. Rte 74	Freeway	4	72,000	D or better
I-215	South. Jct. Rte. 74 - North Jct. Rte. 74	Freeway	4	88,000	D or better
I-215	North Jct. Rte. 74 – D Street	Freeway	4	82,000	D or better
I-215	D Street – Nuevo Road	Freeway	6	99,000	D or better
I-215	Nuevo Road – Ramona Expressway	Freeway	6	103,000	D or better
I-215	Ramona Expressway – Oleander Ave	Freeway	6	117,000	D or better
I-215	Oleander Ave – Van Buren Blvd	Freeway	6	124,000	E

Roadway Segment	Limits	Baseline Conditions (2009)			
		Facility Type[1]	No. of Lanes[2]	ADT[3]	LOS[4]
I-215	Van Buren Blvd – Cactus Avenue	Freeway	6	120,000	D or better
I-215	Cactus Avenue – Alessandro Blvd.	Freeway	6	126,000	E
I-215	Alessandro Blvd. – Eucalyptus/Eastridge Ave	Freeway	6	124,000	E
I-215	Eucalyptus/Eastridge Ave – Jct. Rte 60 East	Freeway	6	119,000	D or better
I-215	Jct. Rte. 60 East - Fair Isle Dr.	Freeway	6[5]	168,000	F
I-215	Fair Isle Dr. - Central Ave.	Freeway	6[5]	173,000	F
I-215	Central Ave. - Pennsylvania Ave.	Freeway	6[5]	166,000	F
I-215	Pennsylvania Ave. - University Ave.	Freeway	6[5]	163,000	F
I-215	University Ave. - 3rd/Blaine St.	Freeway	6[5]	157,000	F
I-215	3rd/Blaine St. - Spruce St.	Freeway	8[5]	157,000	D or better
I-215	Spruce St. - Jct. Rte. 60 & 91 West	Freeway	8[5]	157,000	D or better
I-215	Jct. Rte. 60 & 91 West - Columbia Ave.	Freeway	8[5]	143,000	D or better
I-215	Columbia Ave. - Center St.	Freeway	6[5]	139,000	F
I-215	Center St. - San Bernardino Co. Line	Freeway	6[5]	136,000	F
SR-243	Jct. Rte 74 – Country Club Drive	Mtn. Art.	2	3,700	D or better
SR-243	Country Club Dr. – Circle Dr.	Mtn. Art.	2	5,250	D or better
SR-243	Circle Dr. – Pinecrest/Dairy Rds.	Mtn. Art.	2	6,300	D or better
SR-243	Pinecrest/Dairy Rds. –Marion Ridge Dr.	Mtn. Art.	2	4,200	D or better
SR-243	Marion Ridge Dr. – San Gorgonio Ave	Mtn. Art.	2	1,900	D or better
SR-243	San Gorgonio Ave – Lincoln/8th Street	Arterial	2	5,000	D or better
SR-243	Lincoln/8th Street – Jct. Rte 10	Arterial	2	7,000	D or better
SR-371	Jct Rte 79 – Wilson Valley Road	Arterial	2	6,200	D or better
SR-371	Wilson Valley road – Cary Road	Arterial	2	7,300	D or better
SR-371	Cary Road – Contreras Road	Arterial	2	7,100	D or better
SR-371	Contreras Road – Jct. Rte 74	Arterial	2	6,900	D or better

Footnotes:
1. Referenced from RIVTAM Base Year Model.
2. Referenced from RIVTAM Base Year Model.
3. Caltrans, Traffic Counts on State Highways, 2009.
4. Based on County of Riverside traffic volume range breaks for LOS.
5. Exempt from CMP requirements.

Source: Riverside County Transportation Department; other sources per footnotes.

The LOS values shown in Table 4.18-G may differ from the LOS reported in the CMP. This can occur because the CMP is based on a different methodology than this table or because lanes have been added to the facility since the time it was declared to be exempt 1991.

Table 4.18-H (Baseline Roadway Levels of Service for Roadway Segments One Mile or Greater (Arterial Road Network)) is similar to Table 4.18-G and identifies non-State facilities where the daily traffic volumes indicate LOS E or F conditions. For purposes of readability, only the roadway segments that are one mile in length or greater are shown in Table 4.18-H. For a complete list of roadway segments with corresponding LOS refer to Appendix EIR-4.A. The daily traffic volumes are taken from the Riverside County Traffic Analysis Model (RIVTAM) validated base year model. Referencing Table 4.18-G and Table 4.18-H, many segments operate at LOS E or LOS F. The majority of the local, interstate, and state route facilities with LOS worse than LOS D are located in the western portion of Riverside County. In addition, most of the roadway segments that are at or over capacity are on the freeway system and other major arterials. Excluding the freeway system, approximately 32 miles of the Circulation Element roadways operate at LOS E

(approximately 11 miles unincorporated and 20 miles incorporated) and approximately 97 miles operate at LOS F (approximately 28 miles unincorporated and 69 miles incorporated) under baseline conditions.

Table 4.18-H Baseline Roadway Levels of Service for Roadway Segments One Mile or Greater (Arterial Road Network)

Area Plan (or City)	Roadway Segment	Limits	Baseline Data			
			No. of Lanes	Miles	Daily Volume	Level of Service
Cities of Norco & Riverside	Alessandro Blvd	Trautwein Rd to Arlington Ave - Chicago Ave	4	2.21	44,200	F
Cities of Norco & Riverside	Alessandro Blvd	Trautwein Rd to Brown St	4	3.63	38,400	F
Cities of Norco & Riverside	Arlington Ave	Riverside Ave - SR-91 WB Onramp at Arlington Ave to Alessandro Blvd	4	2.07	38,700	F
Cities of Norco & Riverside	Chicago Ave	Alessandro Blvd to Central Ave	4	1.04	36,200	F
Cities of Norco & Riverside	Main St	Strong St to W Center St	4	1.28	36,300	F
Cities of Norco & Riverside	Van Buren Blvd	0.48 Mi. SE of A St to 0.11 Mi. N of SR-91 WB Ramps at Van Buren Blvd	4	2.69	40,300	F
Cities of Norco & Riverside	Van Buren Blvd	Cypress Ave - Jackson St to Jurupa Ave	4	1.28	50,500	F
Cities of Norco & Riverside	Van Buren Blvd	Wood Rd to Barton St	4	1.02	27,600	E
Jurupa	Armstrong Rd	Valley Way to 1.53 Mi. N of Sierra Ave	2	1.53	12,200	E
Jurupa	Limonite Ave	Wineville Ave to 0.1 Mi. E of Beach St	2	2.71	18,400	F
Temescal Canyon	W 6th St	Smith Ave to Merrill St	4	1.33	33800	F
Elsinore	Clinton Keith Rd	Salida Del Sol - Yamas Dr to 0.24 Mi. W of La Estrella St - Nutmeg St	2	1.39	13600	F
Elsinore	Lake St	Nicholas Rd to Temescal Canyon Rd	2	1.16	15600	F
Elsinore	Summerhill Dr	Railroad Canyon Rd to La Strada	2	2.13	13300	F
Lake Mathews / Woodcrest	Van Buren Blvd	0.48 Mi. SE of A St to Washington St	4	2.84	30100	F
Lake Mathews / Woodcrest	Van Buren Blvd	Washington St to 0.79 Mi. W of Wood Rd	4	1.58	31300	F
March	Van Buren Blvd	Orange Terrace Pkwy to I-215 SB Ramp at Van Buren Blvd	4	1.88	27600	E
Mead Valley	Goetz Rd	McLaughlin Rd to Ellis Ave	2	2.51	12400	E
Mead Valley	N Perris Blvd	E San Jacinto Ave to Placentia St	2	2.47	16100	F
Mead Valley	N Perris Blvd	Placentia St to Oleander Ave	2	2.48	18400	F
Southwest	Clinton Keith Rd	0.05 Mi. E of I-215 NB Ramps at Clinton Keith Rd to 0.49 Mi. E of Meadowlark Ln - Whitewood Rd	2	1.11	12400	E
Reche Canyon / Badlands	Gilman Springs Rd	2.89 Mi. SE of Bold Style Ave to 0.34 Mi. NW of Bold Style Ave	2	4.25	14600	F
Reche Canyon / Badlands	Heacock St	Cardinal Ave to Gentian Ave	2	1.5	12000	E
Reche Canyon / Badlands	Perris Blvd	Oleander Ave to Cactus Ave	2	3.49	17700	F
Reche Canyon / Badlands	Reche Canyon Rd	2.36 Mi. W of Reche Canyon Rd Cutoff to Reche Canyon Rd Cutoff	2	2.36	14900	F
Reche Canyon / Badlands	Reche Vista Dr	Perris Blvd to Reche Canyon Rd Cutoff	2	1.67	11700	E
Reche Canyon / Badlands	Redlands Blvd	Locust Ave to San Timoteo Canyon Rd	2	2.54	18600	F
~~Lakeview / Nuevo~~	~~10th St~~	~~Reservoir Ave to Lakeview Ave~~	~~2~~	~~3.31~~	~~14100~~	~~F~~

Area Plan (or City)	Roadway Segment	Limits	Baseline Data			
			No. of Lanes	Miles	Daily Volume	Level of Service
Lakeview / Nuevo	Ramona Expy/Mid County Pkwy	Mid County Pkwy WB Offramp at Ramona Expy to Mid County Pkwy WB Onramp at ~~Town Center Blvd~~*B St*	2	1.98	11700	E
Harvest Valley / Winchester	Domenigoni Pkwy	1.14 Mi. E of Patterson Ave to Patterson Ave	4	1.65	28000	E
The Pass	San Timoteo Canyon Rd	0.23 Mi. NW of Live Oak Canyon Rd to Redlands Blvd	2	1.22	17900	F
San Jacinto Valley	N Sanderson Ave	Cottonwood Ave to SR-79 NB Ramps at Sanderson Ave	2	2.36	17600	F
San Jacinto Valley	SR-79/Ramona Expwy	0.35 Mi. SE of Byrd St to N State St	2	1.6	15200	F
Western Coachella Valley	52nd Ave	Madison St to Monroe St	2	1.01	17000	F
Western Coachella Valley	E Palm Cyn Dr	La Verne Way - S Sunrise Way to Golf Club Dr	4	2.56	27400	E
Western Coachella Valley	Monroe St	0.5 Mi. N of 62nd Ave to 0.5 Mi. N of 60th Ave	2	1.02	12600	E
Western Coachella Valley	N Indian Cyn Dr	18th Ave to Pierson Blvd	2	3.02	15100	F
Western Coachella Valley	N Indian Cyn Dr	N Sunrise Way to 18th Ave	2	3.25	18200	F
Western Coachella Valley	SR-111	Deep Canyon Rd to El Dorado Dr	4	1.5	39300	F
Western Coachella Valley	SR-111	El Dorado Dr to Washington St	4	2.6	42900	F
Western Coachella Valley	Washington St	SR-111 to 0.45 Mi. N of Fred Waring Dr	4	1.59	34300	F
Eastern Coachella Valley	Johnson St	60th Ave to 62nd Ave	2	1	12600	E

Source: RIVTAM validated base year model, 2007.

C. Park and Ride Facilities

Park and Ride facilities provide resources that encourage increased vehicle occupancy, which reduces the number of vehicles using roadways and highways in Riverside County. In western Riverside County, Park and Ride facilities are operated by Caltrans, the Riverside County Transportation Commission (RCTC), and private commercial developments. Park and Ride facilities that are operated by Caltrans typically are located within the right-of-way of state highways and are owned and maintained by Caltrans. As of 2009, there were nine Park and Ride facilities providing 1,024 spaces operated by Caltrans in western Riverside County. RCTC Park and Ride facilities are typically located on private parking lots under a one-year lease agreement and may include all spaces or just a designated portion of the spaces of the parking lot. RCTC ensures that the Park and Ride facilities that they lease are paved, well lit and maintained facilities that are within one mile of a state highway. As of 2009, there were twelve Park and Ride facilities providing 859 spaces operated by RCTC. Other private commercial developments, such as large malls along state routes, have been required to provide a portion of their parking lot for Park and Ride usage as a condition of approval for the development from the approving local jurisdiction. As of 2009, there were four privately operated Park and Ride facilities providing 320 spaces in western Riverside County. There were a total of 25 Park and Ride facilities providing 2,203 spaces in western Riverside County as of 2009. The locations of these Park and Ride facilities are shown on Figure 4.18.6 within Appendix EIR-4.E.

RCTC's website (http://www.rctc.org/commuters/ie511) provides commuters with the location of Park and Ride facilities in western Riverside County as well as other useful commuter information, such as real-time

traffic conditions, bus and rail line information, and carpool lane locations. RCTC monitors the usage of the Park and Ride facilities that it leases once every quarter to actively evaluate the capacity and demand for their Park and Ride facilities. RCTC also monitors the usage of Caltrans and privately operated Park and Ride facilities once per year and provides this information to the Park and Ride operator if a contact is known. All of the above 2009 data was provided by RCTC from their Park and Ride monitoring data. The demand for Park and Ride facilities is influenced by numerous economic factors, and it has shown an increase in demand during recent years as employees have experienced income reductions and increasing gas prices. Generally the demand for Park and Ride facilities is expected to increase as highway traffic continues to increase.

Currently, there are no Park and Ride locations established in the Coachella Valley area of Riverside County. Caltrans and other agencies involved in traffic management for the desert region have not detected traffic patterns that indicate that there is sufficient demand to warrant the creation of Park and Ride facilities in the Coachella Valley at this time. Caltrans conducts annual monitoring of traffic patterns in the desert region and will consider creating Park and Ride facilities for that region if sufficient demand develops.

D. Existing Public Transit Systems

Fixed-route transit services and demand response (dial-a-ride) transit services are provided by the Riverside Transit Agency (RTA) in the western portion of Riverside County and by the SunLine Transit Agency (SunLine) in the Coachella Valley. The most recent information available as of December 2010 is used to describe the base conditions for RTA. RTA operates 36 fixed bus routes, eight commuter bus routes, and demand responsive services within a 2,500-square mile area of western Riverside County. RTA's fixed routes have been designed to establish transportation connections between all the cities and unincorporated communities in western Riverside County and to make commuter connections with transit services in neighboring counties. RTA participates with OmniTrans in San Bernardino County to provide express bus service between downtown Riverside and downtown San Bernardino, connecting with express service to Ontario. RTA also coordinates with OCTA in Orange County and Metrolink to provide connecting service, and operates service between Murrieta/Temecula and the Oceanside Transit Center in San Diego County. As of December 2010, RTA operates 97 full-size compressed natural gas (CNG) buses, 97 dial-a-ride vans, 74 fixed-route vans, and ten trolleys. In Fiscal Year 2010, approximately 7.9 million passengers boarded vehicles operated by RTA. An average of 26,535 passengers boarded RTA vehicles on weekdays, and an average of 10,764 passengers on weekend days. All RTA vehicles are wheelchair accessible, and all full-size buses are equipped with bike racks.

SunLine provides public transit services for the Coachella Valley area, covering approximately 1,120 square miles and home for about 435,000 residents. As of *2014* ~~September 2010 (most recent data at the time of EIR preparation)~~, SunLine operates *14* ~~13~~ fixed routes, with 524 stop locations, serving about 3.6 million passengers annually.

The agency also operates the SunDial System, which provides curb-to-curb demand responsive (dial-a-ride) service for members of the community requiring such assistance. As of December 2010 (most recent data at the time of EIR preparation), SunLine has a fleet of 125 vehicles, including buses and SunDial vans. In 2010 SunLine received an award from the U.S. Environmental Protection Agency (US EPA) for its leadership in using buses with clean air technology.

In addition to fixed route and demand-responsive services provided by RTA and SunLine, specialized public transportation services are also available through services operated by four municipal operators - the City of Riverside, City of Corona, City of Banning, and City of Beaumont. Additionally, RCTC supports a number of specialized transportation programs including shared ride and vanpool services, social service dial-a-ride, and specialized services for seniors and persons with disabilities.

Greyhound Bus Lines provides private transportation services that link the principal population centers of the County of Riverside with other regions. This includes east-west service connecting Blythe, Indio, Palm Springs, Banning/Beaumont and Riverside (via San Bernardino). The service continues westward to downtown Los Angeles and intermediate stops. North-south service connects Riverside with Temecula, continuing southward to San Diego.

RTA, SunLine, OmniTrans in San Bernardino County, the Orange County Transportation Authority (OCTA), and each of the city transit service providers coordinate their respective schedules and transfer stops to provide for an enhanced level of transit service. RTA's main terminal in Riverside is located between University Avenue and Mission Inn Avenue, one block west of Market Avenue. RTA also provides connections to selected Metrolink stations for both inbound and outbound trains. Existing bus routes are shown in Figure 4.18.7 of Appendix EIR-4.E.

E. Existing Waterways / Waterborne Travel

Unlike other parts of the United States, Riverside County does not have navigable waterways providing for significant transport of people and goods between destinations. Water travel is limited to recreational uses in designated regional and local recreational areas.

F. Existing Passenger Rail

Two types of rail passenger services are available in Riverside County: Intercity service provided by AMTRAK and commuter rail service operated by Metrolink.

Along rail routes between the West Coast and points east, AMTRAK serves Riverside County at two train stations plus several locations where AMTRAK provides bus links to train stations. In the Coachella Valley, the Palm Springs AMTRAK station provides access to AMTRAK's Texas Eagle and Sunset Limited Services, which provide connections to points west including Los Angeles and to points east including Tucson, Arizona and El Paso, Texas. The downtown Riverside Metrolink/AMTRAK station serves the western portion of Riverside County as a stop along AMTRAK's Southwest Chief Service. The Southwest Chief provides connections to Los Angeles and points east including Flagstaff, Albuquerque, St. Louis and Chicago.

Three Metrolink commuter rail lines serve western Riverside County and provide connections to destinations in Los Angeles, Orange, San Bernardino and Ventura Counties. The Riverside Line is operated between the downtown Riverside station and Union Station in Los Angeles, via Ontario and Pomona. En route, trains stop at the Pedley station along with others in San Bernardino and Los Angeles Counties. The 91 Line is also operated between downtown Riverside and Union Station, via Fullerton and Norwalk, with stops at Riverside-La Sierra, Corona-North Main, and West Corona, along with others in Orange and Los Angeles Counties, The Inland Empire Line is operated between San Bernardino and Oceanside in San Diego County, via Riverside, and Irvine. En route, trains stop at Riverside-La Sierra, Corona-North Main, and West Corona, along with others in Orange County. Service is available seven days a week. As of December 2010 (most recent data at the time of EIR preparation), five commuter rail stations serve Riverside County: Riverside-Downtown, Pedley, Riverside-La Sierra, Corona – North Main and West Corona. Existing passenger rail routes are presented on Figure 4.18.8 in the Appendix EIR-4.E.

G. Aviation Services

There are approximately 60 airports in the Southern California region. The majority of passenger air traffic is handled by seven commercial airports in Southern California: Los Angeles International, San Diego International, Ontario International, Palm Springs International, John Wayne/Orange County, Bob

Hope/Burbank and Long Beach Airport. Palm Springs International Airport, located within the City of Palm Springs, is the only airport within Riverside County providing passenger air service; however, Ontario International Airport in San Bernardino County is located close to the northwesterly boundary of Riverside County and provides a convenient travel option for residents of western Riverside County. The County of Riverside owns and operates five public use general aviation airports: French Valley, Hemet-Ryan, Jacqueline Cochran Regional, Chiriaco Summit and Blythe. Four of these airports are located in unincorporated Riverside County; Hemet-Ryan Airport is located within the City of Hemet. Bermuda Dunes Executive Airport, a privately-owned public-use general aviation airport, is located in the unincorporated community of Bermuda Dunes in the Coachella Valley. Four additional public use general aviation airports (not under County of Riverside ownership or management) are located in Riverside County cities: Banning Municipal, Corona Municipal, Palm Springs International, and Riverside Municipal. There are also two privately-owned public-use airports in the cities of Jurupa Valley and Perris: Flabob and Perris Valley. The March Joint Air Reserve Base/Inland Port Airport is located in Riverside County along Interstate 215 northerly of the City of Perris. This is a joint use facility. In addition to its military functions, the facility is permitted to accommodate up to 21,000 civilian airport operations per year. This airport has provided regional air cargo service in the recent past and may be expected to do so in the future. Additionally, development of general aviation facilities at this airport is envisioned in the near future.

The Riverside County Airport Land Use Commission (RCALUC) adopts and implements Airport Land Use Compatibility Plans (ALUCPs) establishing criteria for acceptable land uses in the vicinity of airports (known as Airport Influence Areas) that are intended to protect and promote the safety and welfare of the residents of the airport vicinity and users of the airports while ensuring the continued operation of the airports. The RCALUC is composed of appointees that represent the Riverside County Board of Supervisors; cities in the County of Riverside, as elected by a City Selection Committee; airport managers, and the public within the vicinity of the airports. State law (Public Utilities Code) provides that local agencies such as cities and counties with land within Airport Influence Areas must submit their General Plans to ALUCs for a determination as to whether the General Plan is consistent with applicable adopted ALUCPs. If the General Plan is determined to be consistent, only certain types of projects or cases (general plan amendments, ordinance amendments, specific plans and specific plan amendments) are required to subsequently be submitted to the ALUC for consistency determinations. However, if the General Plan has not been determined to be consistent with the applicable ALUCP, all proposed land uses within that Airport Influence Area must be submitted to the RCALUC for review and a determination of consistency or inconsistency with the applicable ALUCP. A determination of consistency may be subject to conditions of approval recommended by RCALUC for application to the project by the local agency.

The March Joint Powers Authority (March JPA) is the federally-designated reuse authority for the March Joint Air Reserve Base/Inland Port Airport. Within its boundaries, land use authority has been transferred from the County of Riverside to the March JPA.

All airports operating within Riverside County are subject to oversight by the Federal Aviation Administration (FAA) and the Division of Aeronautics of the California Department of Transportation. The five Riverside County-owned public airports are operated by the Riverside County Economic Development Agency. The four city-owned airports are operated by departments of the respective cities in which they are located. The three privately-owned public use airports are operated by private commercial owners. The March Inland Port Airport Authority is responsible for development and operation of the March Inland Port Airport as a governing body under the governing umbrella of the March Joint Powers Authority. Existing airport locations are presented on Figure 4.18.10 in Appendix EIR-4.E.

H. Existing Goods Movement

1. Truck Travel

The 2010 *Highway Capacity Manual* defines a truck as a heavy vehicle engaged primarily in the transport of goods and materials or in the delivery of services other than public transportation. The HCM also defines a heavy vehicle as a vehicle with more than four wheels touching the pavement during normal operation. Primary generators of truck traffic in Riverside County are agricultural and industrial uses. Since agriculture is transitioning to an urban land use pattern in many portions of Riverside County, overall truck traffic volume generated by agricultural uses is expected to decline in the future. However, relocation and replacement of individual agricultural processing plants and other new industries can significantly alter both regional and localized patterns and concentrations of truck traffic in cities and established communities in the County of Riverside. As healthy industrial growth is expected within Riverside County, the scale of industrial-related truck traffic will continue to increase. Overall, truck trips are expected to increase as the County of Riverside approaches build out. Currently, trucks comprise at least 15% of the daily traffic volume on some of the primary goods movement corridors in Riverside County: I-15 from Temecula to Ontario, SR-60 westward from I-215 and I-10 in the Coachella Valley and San Gorgonio Pass areas.

Because of the operational characteristics of trucks, their net effect on traffic flow is two to three times that of an equivalent number of passenger cars on level terrain, and could be considerably more than that on long upgrades, such as I-215/SR-60 eastbound in the Box Springs (Riverside) area and I-10 westbound west of Palm Springs. Traffic engineers describe the effect of trucks in terms of passenger car equivalents or PCEs. Thus, a roadway with 15% of the traffic as trucks could be regarded as having 30 to 45% of its capacity consumed by trucks in terms of PCEs. In most cases, the truck percentage in the peak commuting periods is lower (usually no more than 4 to 6%), as the passenger car volume is higher and some trucks tend to avoid those hours because of the slower speeds. Table 4.18-I (Daily Truck Volumes on Freeways in Riverside County (Bi-Directional)) lists the daily truck volumes for selected facilities and locations in Riverside County. Appendix EIR-4.C presents truck traffic volumes on all state facilities in Riverside County.

Table 4.18- I Daily Truck Volumes on Freeways in Riverside County (Bi-Directional)

Location	Daily Truck Volume
I-10, Junction Route 111	13,800
I-10, Banning	12,300
SR-60, East of Moreno Valley	5,800
SR-60, East of I-15	19,100
I-15, at SR-79	15,100
I-15 at SR-60	39,100
SR-91 at Main St	23,200
SR-91 at 14th St	8,600
I-215, Perris	7,500
I-215/SR-60, Spruce St	13,000

Source: Caltrans, 2009 Annual Average Daily Truck Traffic on the California Highway System, 2010.

2. Rail Freight

The Union Pacific (UP) and the Burlington Northern Santa Fe (BNSF) Railroads provide freight service in Riverside County, connecting the County of Riverside with major markets in California and the nation. Freight terminals and service to specific industries are located throughout Riverside County. The Southern California Association of Governments (SCAG) Regional Transportation Plan estimates train volume on the UP line between Colton and Indio to be 26 daily. An estimated 28 to 50 daily trains move on the Riverside-to-Atwood portion of the BNSF line.

It is likely that the predominant mode for freight movements in the County of Riverside will continue to be by truck in the foreseeable future. This is certainly the trend expected for raw agricultural commodities moving to packing and processing facilities. For long-distance trips (i.e., outside the 800-mile threshold), SCAG has estimated that trains will carry approximately 50% of the freight into the region, by tonnage.

4.18.3 Regulations and Programs for Transportation and Circulation

A. Federal Regulations

Federal rules and regulations govern many facets of the County's transportation and circulation system, including: transportation planning and programming; funding; design, construction and operation of facilities; and others. The County of Riverside complies with all applicable rules and regulations of the Federal Highway Administration (FHA), the Urban Mass Transportation Administration, the Federal Railroad Administration, the Federal Aviation Administration and other federal agencies. In addition, the County of Riverside coordinates with federal resource agencies, where needed, in the environmental clearance process for transportation facilities.

B. State Regulations

As it complies with federal rules and regulations, the County of Riverside also complies with applicable State of California rules and regulations and coordinates with state resource agencies.

1. Complete Streets Act (AB 1358)

The California Complete Streets Act of 2008 was signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 required circulation elements to address the transportation system from a multi-modal perspective. The bill states that streets, roads and highways must "meet the needs of all users…in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, this bill requires a circulation element to plan for all modes of transportation where appropriate – including walking, biking, car travel, and transit.

The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors and the disabled. For further clarity, AB 1358 tasks the Governor's Office of Planning and Research to release guidelines for compliance with this legislation by January 1, 2014.

2. Global Warming Solutions Act (Assembly Bill 32)

With the passage of the Global Warming Solution Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resource Board (ARB), which is coordinating the response to comply with AB 32, is currently on schedule to meet this deadline.

In 2007, ARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, ARB defined its 1990 baseline level of emissions, and by 2011 it completed its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, came into effect January 1, 2012. The cap and trade program controls pollution by a governing agency selling permits on the amount of pollutants a firm can emit. A firm's pollutants cannot exceed the

limit. Firms requiring the need to increase their emissions must purchase permits from other firms requiring fewer permits.

3. Sustainable Communities and Climate Protection Act (Senate Bill 375)

On December 11, 2008, the ARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of SB 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

There are five major components to SB 375. First, SB 375 will address regional GHG emission targets. ARB's Regional Targets Advisory Committee will guide the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the State of California. These targets, which MPOs may propose themselves, will be updated every eight years in conjunction with the revision schedule of housing and transportation elements.

Second, MPOs will be required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the Regional Transportation Plan (RTP) must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.

Third, SB 375 requires that regional housing elements and transportation plans be synchronized on eight-year schedules. In addition, Regional Housing Needs Assessment (RHNA) allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years.

Fourth, SB 375 provides CEQA streamlining incentives for preferred development types. Residential or mixed-use projects qualify if they conform to the SCS. Transit oriented developments (TODs) also qualify if they: 1) are at least 50% residential; 2) meet density requirements; and, 3) are within one-half mile of a transit stop. The degree of CEQA streamlining is based on the degree of compliance with these development preferences.

Finally, MPOs must use transportation and air emission modeling techniques consistent with guidelines prepared by the California Transportation Commission (CTC). Regional Transportation Planning Agencies, cities, and counties are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

4. State Transportation Improvement Program

The State Transportation Improvement Program (STIP) is a multi-year capital improvement program for transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources. STIP programming generally occurs every two years. The programming cycle begins with the release of a proposed fund estimate in July of odd-numbered years, followed by California Transportation Commission (CTC) adoption of the fund estimate in August (odd years). The fund estimate serves to identify the amount of new funds available for the programming of transportation projects. Once the fund estimate is adopted, Caltrans and the regional planning agencies prepare transportation improvement plans for submittal to the CTC by December 15th (odd years). Caltrans prepares the Interregional Transportation Improvement Program (ITIP) and regional agencies prepare the Regional Transportation Improvement Plans (RTIPs). Public hearings are held in January (even years) in both northern and southern California. The STIP is adopted by the CTC by April (even years).

5. Senate Bill 743: Amending CEQA with Respect to Evaluating Transportation Impacts

Senate Bill 743, amending CEQA with respect to how transportation impacts are to be evaluated, was signed by Governor Brown on September 27, 2013. Since then, the California Office of Planning and Research (OPR) has been developing new guidelines which would eliminate the use of LOS measures in evaluating transportation impacts in CEQA documents in favor of a methodology which focuses on vehicle miles of travel (VMT). The following is quoted from the OPR website as to why alternative methodologies to LOS analyses are needed.

> *"Level of service has been applied in ways that discourage both infill development and construction of infrastructure for transit, cycling, and walking. Urban infill projects, for example, often rate poorly in traffic studies because they increase population and potential traffic in a given area. However, evidence shows that the residents and consumers who live, work, and shop in these areas are less likely to rely on cars for their transportation needs.*
>
> *Focus on LOS also discourages planning for projects that support alternatives to driving such as public transit, bicycle lanes, and pedestrian safety features. Dedicating road lanes for bicycles or buses might exceed LOS thresholds by removing a lane of auto traffic, potentially leading to delay or congestion.*
>
> *When employed in isolation, LOS can lead to ad hoc roadway expansions that deteriorate conditions on the network as a whole.*
>
> *Use of level of service in the CEQA context has been criticized for several reasons. First, it focuses on a social impact (driver delay), not an environmental impact. Second, roadway widening is the typical mitigation for projects that lower LOS. However, wider roads can result in adverse environmental, public health, and fiscal impacts. Wider roads are more expensive to maintain and enable driving at faster speeds, which leads to more pollution, noise, and higher risks to bicyclists and pedestrians. A presentation summarizing these issues is available.*

These concerns, among others, have led some local governments to accept low LOS ratings or to move away from level of service entirely as a measure of transportation impacts."

The OPR critique of using LOS as the primary means of analyzing transportation impacts is persuasive. The OPR supports the lowering of LOS targets as means to achieve land use patterns that support transit usage and other alternative means of transportation, such as walking and bicycling. Toward this end, there are several policies within the General Plan aimed at encouraging transit and other alternative travel modes.

The draft guidelines from OPR, which are still in the process of review, call for an analysis of VMT as a preferred measure of transportation impacts instead of LOS. At the time of this writing, OPR has not yet provided a methodology which can be implemented in order to conduct a VMT analysis to determine if a project has transportation impacts under CEQA. The goal of changing analysis methods from LOS to VMT is to encourage alternate modes of travel, such as walking, bicycling and public transit.

The LOS policy changes presented in GPA No. 960/EIR No. 521, while not written from the standpoint of VMT, are supportive of the new analysis methods for transportation impacts, and are intended to be compliant with the new VMT standards required by OPR once upon their release . As the OPR VMT guidelines move toward final approval, there is nothing at this time in the current General Plan LOS Policies as proposal that would pose a significant conflict with the current draft OPR guidelines.

The County of Riverside will continue to support and promote alternative travel modes, and actively participate in the planning of public transit facilities, as well as enhancements to public roadways aimed at improving safety and comfort for bicyclists and pedestrians. The County has a keen interest in preserving and enhancing the high standard of living that most County residents enjoy for future generations. This can be accomplished by implementing the many policies in the new General Plan, as currently proposed, which call for ongoing cooperative and collaborative planning efforts with the various transportation planning agencies in the region; SCAG (Regional Transportation Plan/Sustainable Communities Strategy), RTA and Sunline (Short Range Transit Plans), RCTC (Mobilty 21 and Congestion Management Program), WRCOG and CVAG (TUMF programs and updates), Caltrans (Cooperation and coordination on freeway, conventional highway and interchange improvements and planning) cities and counties (Various issues of mutual concern, from local design standards to regional transportation corridors).

When OPR finalizes statewide policies and procedures for the use of VMT as the means to measure transportation impacts in CEQA documents, the County will respond affirmatively to implement these. At this time, it is not believed that these forthcoming policies and procedures will necessitate amendments to the Riverside County General Plan.

C. Regional Regulations

1. SCAG 2012 Regional Transportation Plan/Sustainable Communities Strategy

The Regional Transportation Plan (RTP) is developed, maintained, and updated by SCAG, Southern California's state-designated MPO. SCAG encompasses six Southern California counties: Los Angeles, Orange, Riverside, San Bernardino, Ventura and Imperial, as well as the cities within these counties. On April 4, 2012, SCAG's Regional Council adopted the 2012-2035 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future with the primary goal of increasing mobility for the region's residents and visitors, while also emphasizing sustainability and integrated planning. The vision of the RTP/SCS encompasses three principles that collectively work as the key to the region's future: mobility, economy, and sustainability.

The 2012–2035 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. As such, the 2012–2035 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2035 time frame and clear steps to move toward this objective. The RTP/SCS provides a blueprint for improving quality of life for the region's residents by providing more choices for where they will live, work and play, and how they will move around.

The RTP/SCS contains a host of improvements to the region's multimodal transportation system. These improvements include closures of critical gaps in the network that hinder access to certain parts of the region, as well as the strategic expansion of the transportation system where there is room to grow, in order to provide the region with the mobility it needs. The RTP/SCS also contains a financial plan that identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, state and federal sources along with funding sources that are reasonably available over the time horizon of the RTP/SCS.

In addition to numerous roadway improvements identified in Riverside County, Metrolink commuter rail service is planned to be extended by the construction of the Perris Valley Line (PVL). PVL is a 24-mile extension that will connect the Downtown Riverside Metrolink Station with a new South Perris station. Additionally, there will be three other new stations located at Hunter Park Area, Moreno Valley/March Field and Perris. The Environmental Impact Report for the PVL, which will extend service to Perris, was certified by the RCTC on July 25, 2011. The earliest that construction is anticipated to start is 2014. Long-term plans call for an extension of the Riverside Transit Corridor, in accordance with performance standards, along the San Jacinto branch line to the cities of Hemet and San Jacinto.

Within the RTP, the SCS demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by the ARB. The SCS outlines a plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. The SCS focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation and transportation demand management measures. Finally, the RTP/SCS fully integrates the two subregional SCSs prepared by the Gateway Cities and Orange County Council of Governments.

2. Western Riverside County Association of Governments Transportation Uniform Mitigation Fee

Implemented in 2003, the Transportation Uniform Mitigation Fee (TUMF) is the largest multi-jurisdictional fee program in the nation. Under the TUMF, western Riverside County is divided into five zones. The TUMF is structured so that 48.7% of funds generated in each zone go back to that zone to be programmed for projects. Another 48.7% is allocated to regional inter-zone projects programmed by RCTC, and 2.6% is allocated for regional transit projects programmed by the Riverside Transit Agency.

3. Coachella Valley Association of Governments TUMF

A regional fee program for the Coachella Valley Association of Governments (CVAG), first implemented in 1989, has been periodically updated since then. This fee program collects funds from development projects and funds local and regional improvements throughout the Coachella Valley.

4. Riverside County Congestion Management Program

The passage of Proposition 111 in June 1990 established a process for each metropolitan county in California, including Riverside, to prepare a Congestion Management Plan (CMP). The CMP, which was prepared by RCTC in consultation with the County of Riverside and its cities, is an effort to align land use, transportation and air quality management efforts, to promote reasonable growth management programs that effectively use statewide transportation funds, while ensuring that new development pays its fair share of needed transportation improvements.

The focus of the CMP is the development of an Enhanced Traffic Monitoring System in which real-time traffic count data can be accessed by RCTC to evaluate the condition of the Congestion Management System (CMS) as well as meet other monitoring requirements at the state and federal levels. Per the adopted Level of Service target of "E," when a CMS segment falls to "F," a deficiency plan is required. Preparation of a deficiency plan will be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency will also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including Transportation Demand Management (TDM) strategies and transit alternatives and a schedule of mitigating the deficiency. To ensure that the CMS is appropriately monitored to reduce the occurrence of CMP deficiencies, it is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on the CMS.

D. County Regulations

Ordinances specifically applicable to the circulation system are presented below.

Ordinance No. 413 – Vehicle Parking: Ordinance No. 413 establishes regulations to vehicle parking on Riverside County roadways.

Ordinance No. 452 – Speed Limits: Ordinance No. 452 pertains to prima facie speed limits on Riverside County roadways and establishes or amends prima facie speed limits on certain Riverside County roads.

Ordinance No. 460 – Subdivision of Land: Ordinance No. 460, in conjunction with the Subdivision Map Act, establishes regulations for the division of land and describes procedures. The ordinance also includes the provisions for the establishment of Road and Bridge Benefit Districts and associated fees.

Ordinance No. 461 – Road Improvement Standards and Specifications: Ordinance No. 461 adopts Road Improvement Standards and Specifications.

Ordinance No. 499 – Encroachments in County Highways: Ordinance No. 499, subject to the control of the Board of Supervisors, delegates to the Riverside County Transportation Director the administration of the use of county highways, including county roads, for excavations and encroachments; construction, operation and maintenance of utility facilities; planting, maintenance and removal of trees; and the issuance, modification, and revocation of permits for such uses.

Ordinance No. 659 – Development Mitigation Fee for Residential Development (DIF Program): Ordinance No. 659 establishes a development impact fee (DIF) for the development of infrastructure, including County roadways and the installation of traffic signals.

Ordinance No. 671 – Consolidated Fees for Land Use and Related Functions: Ordinance No. 671 establishes a consolidated fee program for land use and related functions. This is a deposit-based fee (DBF) program and provides for unused fees to be refunded to the applicant.

Ordinance No. 673 – Establishing a Transportation Uniform Mitigation Fee (TUMF Program): Ordinance No. 673 establishes a TUMF program for the Coachella Valley. The fees are collected by the County of Riverside and administered by CVAG to make roadway improvements in the Coachella Valley. TUMF funds are intended for use solely for the engineering, construction, and right-of-way acquisition for regional facilities. TUMF funds may not be used to defray operational and maintenance expenses. Regional facilities are designated by CVAG and updated periodically. They include streets, arterials and road improvements as defined in the ordinance. CVAG prioritizes projects annually based on established prioritization criteria.

Ordinance No. 748 – Mitigation of Traffic Congestion Through Signalization: Ordinance No. 748 establishes a fee program for the installation of traffic signals based on a priority list. The fee would also have a component for the installation of traffic signal interconnect, and a component for the application of intelligent transportation systems technologies.

Ordinance No. 824 – Western Riverside County Transportation Uniform Mitigation Fee (TUMF) Program: Ordinance No. 824 establishes a TUMF program for the western portion of Riverside County. The fees are collected by the County of Riverside and administered by the Western Riverside Association of Governments (WRCOG) to make roadway improvements in the WRCOG area. TUMF funds are intended for use solely for the engineering, construction and right-of-way acquisition for regional facilities. TUMF funds may not be used to defray operational and maintenance expenses. Facilities eligible for TUMF are designated by WRCOG and updated periodically. They include streets, arterials and road improvements as defined in the ordinance.

Ordinance No. 859 – Establishing Water-Efficient Landscaping Requirements: Ordinance No. 859 establishes water-efficient landscape requirements.

The Riverside County ordinances cited above and all other Riverside County ordinances are available for viewing on the Riverside County Clerk of the Board website.

E. Proposed New or Revised County General Plan Policies

Several changes are proposed to the current General Plan Policies in regards to transportation and circulation. Many of the changes are purely editorial in nature, reworded to better reflect the intent and purpose of the policy. Some have been revised to reflect changes in terminology as proposed to other elements of the General Plan. Others have been revised due to changes in state or federal rules and regulations. This section details 104 changes and additions to transportation and circulation policies of the General Plan. Most of these changes are not substantive in nature. There are, however, seven policy changes that are significant and warrant further explanation.

1. Significant Policy Changes

Policy C 2.1: : This revision in policy *removes reference to a* ~~changes the~~ countywide target level of service *and instead defines target levels of service by Area Plan.* ~~from C to D.~~ *LOS C is retained as the target LOS for much of the Riverside County unincorporated area, including the Mount San Jacinto Mountains and the outlying desert regions in the eastern portion of the County. Any lands not included in an Area Plan also fall under the LOS C target.* At present, LOS D may be allowed in Community Development areas~~,~~. *The revised policy allows LOS D as the minimum LOS in all of the urbanizing Area Plans of Western Riverside County and the Western Coachella Valley.* ~~and in Community Centers promoting transit-oriented development (TOD) and walkable communities where~~ LOS E ~~may~~ *continues to* be allowed *by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed*. These areas represent the more urbanized areas of the unincorporated County of Riverside. This change in policy would expand where LOS D is deemed to be acceptable. This change in policy is proposed in order to bring Riverside County in line with other surrounding jurisdictions and the *majority of the* incorporated cities within Riverside County, and is in keeping with generally accepted engineering practices within the transportation profession. This change in policy does not in and of itself have any effect on traffic volumes or LOS, but it does alter Riverside County's response to increased traffic and congestion.

The likely result*s of the LOS policy as currently proposed* will be narrower improvement widths in order to mitigate traffic impacts due to the lower threshold of significance. *The reduction in pavement width is generally considered to have positive environmental effects, rather than negative, as the footprint of disturbance required for construction is reduced.* This will provide cost saving not only in terms of construction costs, but also in ongoing maintenance costs. The reduction in improvement width will also serve to support Riverside County's policy of supporting alternative modes of transportation such as bicycle and pedestrian travel by providing a more favorable environment for these activities. It will also serve to make the use of public transit a more attractive option as well.

The policy changes are not expected to have significant adverse impacts; in fact our analysis indicates that fewer than 100 miles of roadway currently covered by the LOS "C" criteria are projected to operate at LOS "D."

The policies do not dictate that any roadways operate at LOS "D" or "E," they merely guide how the County reacts to the traffic that is present or that is anticipated as a result of specific development proposals. It is expected that several roadways will not need to be widened as significantly as would otherwise be required or that the widening can be delayed. Also, the reduction in pavement width also provides a substantial cost saving not only in terms of construction costs, but also in ongoing maintenance costs.

Not every intersection or roadway segment will operate at LOS "D" or "E." As is the situation today, there are many roadways operating at LOS "A," B" and "C" in areas which would currently allow LOS "D" and "E." That will continue to be true under the new policies.

Likewise, the shift from LOS "C" to LOS "D" will not automatically result in the maximum amount of additional delay at intersections. The difference in delay when analyzing interrupted flow or intersections analysis can cause average delay per vehicle to increase by as much as 20 seconds. However, the resulting average delay per vehicle can also be as little as 1 second per vehicle. The policy goes to on to state criteria by which the Board of Supervisors, by virtue of their discretionary powers, may approve a project that fails to meet these minimum LOS targets.

The detailed language for this policy change is presented in Section 2, Circulation Policy Amendments.

~~***Policy C 2.8:*** This is a new policy which states an existing practice of the Riverside County Transportation Department, which is to maintain a LOS threshold table and to periodically update that table. This table is used to determine LOS at a macro level based on forecast link traffic volumes. The methodology used to develop these figures is constantly evolving as new data and research becomes available. Thus, it is important that the Department have the ability to update these figures based upon the latest facts, without need for a General Plan Amendment or other legislative action. The result will be to verify that the most up-to-date information is available to aide in the decision-making process relative to traffic and circulation issues. The latest update of this table is presented in the proposed General Plan (GPA No. 960), Figure C- 3 (Segment/Volume Capacity/Level of Service for Riverside County Roadways). The detailed language for this policy change is presented in Section 2, Circulation Policy Amendments.~~

The original NEW Policy 2.8 has been removed in its entirety. An additional NEW Policy 2.8 has now been inserted in its place. This policy calls for coordination with Caltrans, RCTC and adjacent local jurisdictions in conformance with the Riverside County Congestion Management Program to determine the appropriate LOS threshold for determining significance when reviewing development proposals that directly impact nearby State Highway facilities or city streets. The intent of this policy is to further clarify how traffic impacts are evaluated when it comes to roadways facilities that are not under County jurisdiction.

Policy C 3.3: This policy revision is proposed to clarify how to transition from one roadway classification standard to another, and how the lane geometrics and right of way required to make those transitions are to be handled. The result may be minor additional improvement width and right-of-way in order to accommodate these transition standards. The detailed language for this policy change is presented in Section 2, Circulation Policy Amendments.

Policy C 7.6: The current policy supports the development of an internal East-West CETAP Corridor with a new Orange County CETAP connection. The CETAP Corridor project falls under the authority of the RCTC. The RCTC has placed planning efforts for this future facility on hold and is currently exploring a wide variety of highway and transit options in order to increase capacity to accommodate the travel demand between Riverside and Orange County. It is also proposed that this corridor be removed from the Circulation Element, Figure C-1 of the proposed General Plan (GPA No. 960). The policy as revised continues to support major capacity enhancements to SR-91.

Policy C 9.2: This is a revision to an existing policy generally supporting the efforts of transit operators to increase transit usage. The revised policy specifically mentions support for efforts to expand and enhance Metrolink services, as well as the implementation of bus rapid Transit (BRT) services, and to make other express and local bus service improvements. The detailed language for this policy change is presented in Section 2, Circulation Policy Amendments.

Policy C 11.6: This policy to encourage transit-only lanes on freeways and to consider the development of preferential/priority treatment measures to expedite bus movements is deleted in its entirety. Instead, Policy C 9.2, as discussed above, specifically promotes the implementation of BRT services and other transit improvements which accomplishes the same objective.

Policy C 21.8: This policy which advocates the installation of one way streets and reversible lanes is deleted in its entirety. This is not an option which the Transportation Department wishes to endorse on a countywide level, however, such strategies could still be considered on a case-by-case basis.

2. Circulation Policy Amendments

The following section provides detailed mark-ups of the changes for each of the policies being modified. Only those policies that are being revised, removed or new policies added are shown. All other transportation and circulation policies are to remain in effect.

Policy C 1.3: Support the development of transit connections *between Riverside County and regional activity centers in other counties as well as transit connections* that link the community centers located throughout the county and as identified in the Land Use Element and in the individual ~~area plans~~ *Area Plans*.

Policy C 1.6: Cooperate with *and where appropriate lead* local, regional, state, and federal agencies to establish an efficient circulation system.

NEW **Policy C 1.8:** *Ensure that all development applications comply with the California Complete Streets Act of 2008 as set forth in California Government Code Sections 65040.2 and 65302.*

Policy C 2.1: ~~Maintain the following countywide target Levels of Service: LOS CD along all County maintained roads designated in the Circulation Element and conventional along state highways,. As an exception, LOS D may be allowed in Community Development areas, only at intersections along all County-maintained roads and along of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways, and at or freeway ramp intersections.~~

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan (Figure C-1) which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, and Palo Verde Valley.

LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Temescal Canyon, Lake Mathews/Woodcrest, Elsinore, Mead Valley, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, and Western Coachella Valley.

LOS E may be allowed *by the Board of Supervisors with*in designated a*reas where* ~~community centers to the extent that it would support~~ transit-oriented development and walkable communities *are proposed.* ~~and on roadways where the addition of travel lanes would have a significant adverse impact on environmental and cultural resources such as habitat, wetlands, Multiple Species Habitat Conservation Plan (MSHCP) preserves, wildlife movement, stands of mature trees, historic landmarks, or archaeological sites.~~

~~Other levels of service may be allowed by the Board of Supervisors for a plan, program or project for which an environmental impact report, or equivalent, has been completed, based on the Board's policy decision about the balancing of congestion management considerations in relation to the benefits, impacts and costs of future plans, programs and projects.~~

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

Policy C 2.2: *Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation* ~~and. a~~ *A*pply level of service ~~standards~~ *targets* to new development ~~via a program establishing~~ *per the Riverside County* ~~traffic study guidelines~~ *Traffic Impact Analysis Preparation Guidelines* to evaluate traffic impacts and identify appropriate mitigation measures for new development.

Policy C 2.3: Traffic studies prepared for development entitlements (tracts, ~~plot plans,~~ public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the ~~A~~"significance" of such impacts in compliance with CEQA *and Riverside County Congestion Management Program requirements.*

Policy C 2.4: The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service ~~standards~~ *targets*.

Policy C 2.6: Accelerate the construction of transportation infrastructure in the Highway 79 *corridor between Temecula, Hemet, San Jacinto, and Banning* ~~Policy Area (Figure C-2)~~. The County *of Riverside* shall require that all new development projects demonstrate adequate transportation infrastructure capacity to accommodate the added traffic growth. The County *of Riverside* shall coordinate with cities ~~adjacent to the policy area~~ *in the Highway 79 corridor* to accelerate the usable revenue flow of existing funding programs, thus ~~assuring that~~ *expediting the development of the* transportation infrastructure ~~is in place when needed~~.

Policy C 2.7: ~~Establish~~ *Maintain* a program to reduce overall trip generation in the Highway 79 Policy Area ([General Plan] Figure C-2) by creating a trip cap on residential development within this policy area which would result in a net reduction in overall trip generation of 70,000 vehicle trip per day from that which would be anticipated from the General Plan Land Use designations as currently recommended. The policy would generally require all new residential developments proposals within the Highway 79 Policy Area to reduce trip generation proportionally, and require that residential projects demonstrate adequate transportation infrastructure capacity to accommodate the added growth.

~~NEW Policy C 2.8: To ensure that Riverside County's traffic volume range breaks for the various facility types used to determine LOS (Figure C-3) stay current, review and update the thresholds periodically.~~

NEW Policy C 2.8: *Riverside County shall coordinate with Caltrans, RCTC and adjacent local jurisdictions in conformance with the Riverside County Congestion Management Program to determine the appropriate LOS threshold for determining significance when reviewing development proposals that directly impact nearby State Highway facilities or city streets.*

Policy C 3.1: Design, construct, and maintain *Riverside* County roadways as specified in the *Riverside* County Road Improvement Standards and Specifications. *The standards shown in [General Plan]* Figure C-4 *may be modified by Specific Plans, Community Guidelines, or as approved by the Director of Transportation if alternative roadway standards are desirable to improved sustainability for the area.*

Policy C 3.3: Implement design guidelines that identify intersection improvements consistent with the ~~following~~ lane geometrics *in [General Plan] Table C-2 unless additional lanes are needed to maintain consistency with Policy 2.2.* ~~in the Circulation Element.~~ *Where roadway classifications change on a continuous alignment, the standards of the higher classification will normally be transitioned on a portion of the roadway that has the lower classification, particularly where*

the change takes place at roadway intersections. This may result in additional right of way or lanes being required above the standards shown in [General Plan] Figure C-4 *for the segment with the lower classification to accommodate the transition.*

Policy C 3.4: Allow roundabouts or other innovative design solutions *such as triple left turn lanes, continuous flow intersections, or other capacity improvements,* when a thorough traffic impact assessment has been conducted demonstrating that such an intersection design alternative would manage traffic flow, and improve safety, if it is physically and economically feasible.

Policy C 3.6: Require private developers to be primarily responsible for the improvement of streets and highways ~~service~~ *that serve as* access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.

Policy C 3.14: Design curves and grades to permit safe movement of vehicular traffic at the road's design speed. Design speed should be consistent with and complement the character of the adjacent area.

Policy C 3.15: Provide adequate sight distances for safe vehicular movement at a road's design speed and at all intersections.

Policy C 3.17: Ensure dedications are made, where necessary, for additional rights-of-way or easements outside the road right*s*-of-way ~~that are~~ needed to establish slope stability*, or* drainage and *related* structures. These dedications shall be made by land dividers or developers to the responsible agency during the land division and land use review process.

Policy C 3.24: Provide a street network with quick and efficient routes for emergency vehicles, meeting necessary street widths, turn-around radius, *secondary access,* and other factors as determined by the Transportation Department in consultation with the Fire Department and other emergency service providers.

Policy C 4.3: Assure *and facilitate* pedestrian access from developments to existing and future transit routes and terminal facilities through project design.

Policy C 4.7: *Make reasonable accommodation for* ~~Encourage~~ safe pedestrian walkways that comply with the Americans with Disabilities Act (ADA) requirements within commercial, office, industrial, mixed use, residential, and recreational developments.

~~**Policy C 4.8:** Encourage, where feasible, the construction of overpasses or undercrossings where trails intersect arterials, urban arterials, expressways, or freeways.~~ [Relocated to policy C 15.6]

Policy C *4.8* (Previously C 4.9): Coordinate with all transit operators to ensure that *ADA compliant* pedestrian facilities are provided along and/or near all transit routes, whenever feasible. New land developments may be required to provide pedestrian facilities due to existing or future planned transit routes even if demand for pedestrian facility ~~is~~ *may* not *be* otherwise warranted.

Policy C *4.9* (Previously C 4.10): Review all existing roadways without pedestrian facilities when they are considered for improvements ~~(whether maintenance or upgrade)~~ to determine if new pedestrian facilities are warranted. New roadways should also be assessed for pedestrian facilities.

Policy C 6.3: Limit access points and intersections of streets and highways based upon the road's General Plan classification and function. *Require that* access points ~~must~~ be ~~located a sufficient distance away from major intersections to allow for safe, efficient operation~~ *located so that they comply with Riverside County's minimum*

intersection spacing standards. Under special circumstances the Transportation Department may consider exceptions to this requirement.

Policy C 6.6: Consider access implications associated with adjacent development and circulation plans.~~,~~ ~~and~~ Promote efficient and safe access ~~improvements on~~ *for* airport facilities.

Policy C 7.1: Work with incorporated cities to mitigate the cumulative impacts of incorporated and unincorporated development on the countywide transportation system.

Policy C 7.3: Incorporate the Regional Transportation Plan *of the Southern California Association of Governments (SCAG) and*~~,~~ the Riverside County Congestion Management Program~~, and the Riverside County Short- and Long-Range Transit Plans~~ into the Circulation Element, and, ~~encourage~~ *with* the active participation of Caltrans, ~~in working~~ *work to expedite* the design *and implementation* of state highway capital improvement projects.

Policy C 7.6: Support ~~the development of a new internal East-West CETAP Corridor in conjunction with a new Orange County CETAP connection. Such corridor(s) would be constructed simultaneously to avoid further congestion on the I-15 Freeway. Or, in the alternative, the East-West Corridor would be constructed simultaneously with~~ major capacity enhancements on ~~the~~ State Route 91, between ~~Pierce St~~ *the counties of Riverside* and ~~the~~ Orange ~~County line, and the capacity improvement of the 15 (north) to westbound 91 overpass.~~

Policy C 7.7: Support the analysis of the feasibility of ~~a~~ *developing* Pigeon Pass Road *and Reche Canyon Road as four-lane facilities to link the Moreno Valley area and San Bernardino County.* ~~extension as part of the Moreno Valley to San Bernardino County CETAP Corridor.~~

Policy C 7.8: Collaborate with all incorporated cities and all adjacent counties to implement and integrate right-of-way requirements and improvement standards for General Plan roads that cross jurisdictional boundaries. Detailed procedures have been developed and include the following:

a. For development under ~~the~~ *Riverside* County jurisdiction but within the sphere of influence (SOI) of a city having roadway standards different from ~~the~~ *Riverside* County, city and *Riverside* County staff will cooperate and agree on a reasonable choice of design standards for the particular circumstances involved, and negotiate logical transitions from city to *Riverside* County standards.

b. In general, for such development under *Riverside* County jurisdiction but within the SOI of an incorporated jurisdiction, city standards should apply if the staffs concur that annexation to the City will logically occur in the short to intermediate range future. Where annexation seems doubtful into the long term future, *Riverside* County standards should apply.

c. Transition areas at meeting points of roadways designed to differing city and *Riverside* County standards or differing functional classifications should be individually designed to facilitate satisfactory operational and safety performance. Further, *Riverside* ~~the~~ County should update the road standards to reflect the intent of this policy and standards agreed upon by the County *of Riverside* and other local agencies.

Policy C 7.9: Review development applications in cooperation with RCTC and as appropriate, to identify the precise location of CETAP corridors and act to preserve such areas from any permanent encroachments, pending dedication or acquisition. *Coordinate with RCTC to evaluate and update the CETAP corridors periodically as conditions warrant.*

Policy C 8.3: Use annexations, ~~re~~development agreements, revenue-sharing agreements, tax allocation agreements and the CEQA process as tools to ensure that new development pays a fair share of costs to provide local and regional transportation improvements and to mitigate cumulative traffic impacts.

Policy C 8.4: Prepare a multi-year Transportation Improvement Program (TIP) that establishes improvement priorities and scheduling for transportation project construction over a period of ~~5 to 7~~ *two or more* years. The TIP will be reviewed and updated annually.

Policy C 8.7: Review and update the County *of Riverside* Road and Bridge Benefit District fee structure ~~for~~ *and* development impact fees ~~annually~~ *periodically* to ensure that capacity expansion projects are developed and constructed in a timely manner.

Policy C 8.8: Seek all available means to finance improvements, including state and federal grants, to ~~ensure that a non-motorized system is implemented~~ *offset the local cost of system improvements where appropriate.*

Policy C 9.1: Support all operator efforts to maximize revenue sources for short and long range transit needs that utilize all funding mechanisms available including federal grants, state enabling legislation, and farebox revenue. This can be accomplished through the Riverside County Transportation Commission (RCTC) and development of the Short and Long Range Transit Plans *by the Riverside Transit Agency (RTA) and SunLine Transit.*

Policy C 9.2: Support *the expansion and enhancement of Metrolink service and* transit operators' programs to ~~foster~~ *increase* transit usage *to implement bus rapid transit (BRT) services, and to make other express and local bus service improvements.*

Policy C 11.1: *Where appropriate,* ~~R~~*r*eserve right-of-way to accommodate ~~for~~ designated transit service.

~~**Policy C. 11.6:** Encourage the designation of exclusive transit only lanes on freeways. Where appropriate, consider the development of preferential/priority treatment measures to expedite bus movements.~~

Policy C *11.6* (Previously C 11.7): Promote development of transit centers and park-n-rides for use by all transit operators, including development of multi-modal facilities.

Policy C 12.2: Support the development of high-speed transit linkages, *bus rapid transit (BRT)* or express routes, between community centers and other major nodes of activity.

Policy C 13.3: Support implementation of the San Jacinto Branch Line to serve ~~planned industrial development~~ *commuter uses.*

Policy C 13.4: Construct new grade separations or reconstruct existing grade separations as necessary for the smooth flow of traffic within ~~the~~ *Riverside* County consistent with plans developed by *RCTC*, WRCOG and CVAG.

Policy C 13.5: Provide additional *railroad* grade crossing improvements as determined by the California Public Utilities Commission and the County *of Riverside.*

Policy C 14.1: Promote coordinated long-range planning between ~~the~~ *Riverside* County, airport authorities, businesses and the public to meet the County *of Riverside* and the region's aviation needs.

Policy C 14.2: Apply a variety of land use planning techniques to maintain the viability of ~~the~~ *Riverside* County's airports. ~~(See Land Use Policy LU 14.6)~~

Policy C 15.1: Implement *a two-tiered system of trails,* and later expand *it into* an effective non-motorized transportation system.

Policy C 15.2: Seek financing to implement an effective non-motorized transportation system. This funding can include such *potential sources* ~~things~~ as state and federal grants, *Riverside County transportation funds, "in-lieu" fees, special assessments,* ~~redevelopment agency funds,~~ *parking meter revenues, other public and non-profit organization funds, developer contributions, and other sources*.

Policy C 15.3: Develop a trail system which connects *Riverside* County parks and recreation areas while providing links to open space areas, equestrian communities, local municipalities, and regional recreational facilities (including other regional trail systems), *and ensure that the system contains a variety of trail loops of varying classifications and degrees of difficulty and length*.

Policy C 15.4: *Periodically* ~~R~~*r*eview and update the *Trails and Bikeways Plan ([General Plan] Figure C-7* ~~Regional Trail Map~~ in accordance with the review procedures and schedule of the General Plan, in order to *ensure* ~~assure~~ *its* compatibility with the other ~~elements~~ *components* of the *Riverside* County General Plan, and with the similar plans of *agencies, such as* Western Riverside County Council of Governments *(WRCOG)*, Coachella Valley Association of Governments *(CVAG)*, Riverside County Transportation Commission *(RCTC)*, *Regional Conservation Authority, Riverside County Habitat Conservation Agency* and all jurisdictions within and abutting Riverside County. *This shall include consistency with the WRCOG and CVAG non-motorized planning documents.*

Policy C 15.5: Compliance with the Americans with Disabilities Act (ADA) standards will be assured so as to make ~~the~~ trails ~~system~~ user-friendly*, as much as reasonably feasible*.

Policy C *15.6* (Previously C 4.8): *Provide,* ~~Encourage,~~ where feasible, the construction of overpasses or undercrossings where trails intersect arterials, urban arterials, expressways, or freeways.

Policy C 16.1: Implement the *Riverside* County trail system as depicted in the Bikeways and Trails Plan, *[General Plan]* Figure C-*7*.

Policy C 16.2: Develop a multi-purpose ~~recreational~~ trail network with support facilities which provide a linkage with regional facilities, *and require trailheads and staging areas that are equipped with adequate parking, bicycle parking, restrooms, informative signage, interpretive displays, maps, and rules of appropriate usage and conduct on trails accessed from such facilities.*

Policy C 16.3: Require that trail alignments either provide access to or link scenic corridors, schools, parks*, bus stops, transit terminals, park and ride commuter lots,* ~~and other natural areas~~ *and other areas of concentrated public activity, where feasible.*

~~a. Require that all development proposals located along a planned trail or trails provide access to, the trails system.~~ [Relocated to C 16.4]

~~i) Ensure that existing and new gated communities, do not preclude trails from traversing through their boundaries.~~ [Relocated to C 16.4]

~~b. Require that existing and proposed trails within Riverside County connect with those in other neighboring jurisdictions.~~ [Relocated to C 16.4]

NEW **Policy C 16.4:** *Require that all development proposals located along a planned trail or trails provide access to, dedicate trail easements or right-of-way, and construct their fair share portion of the trails system. Evaluate the locations of existing and proposed trails within and adjacent to each development proposal and ensure that the appropriate easements are established to preserve planned trail alignments and trail heads.*

a. Require that all specific plans and other large-scale development proposals include trail networks as part of their circulation systems.

b. Ensure that new gated communities, and where feasible, existing gated communities, do not preclude trails accessible to the general public from traversing through their boundaries.

c. Provide buffers between streets and trails, and between adjacent residences and trails.

d. Make use of already available or already disturbed land where possible for trail alignments.

e. Require that existing and proposed trails within Riverside County connect with those in other neighboring city, county, state, and federal jurisdictional areas.

Policy C *16.5* (Previously C 16.4): Identify all existing rights-of-way which have been obtained for trail purposes through the land development process. ~~d.~~ Once the above task has been accomplished, analyze the existing rights of-way and determine the most expedient method for connecting the parts.

Policy C *16.6* (Previously C 16.5): Examine the use of public access utility easements for trail linkages to the regional trails system and/or other open space areas*, as feasible*. These potential corridors include*, but are not limited to,* the rights-of-way for:

a. water mains;

b. water storage project aqueducts;

c. irrigation canals;

d. flood control;

e. sewer lines; ~~and~~

f. fiber optic cable lines,

g. gas lines,

h. electrical lines, and

i. fire roads, railroads, and bridges.

Policy C *16.7* (Previously C 16.6): Adhere to the following trail-development guidelines when siting a trail:

a. ~~Permit urban trails to be located in or along transportation rights-of-way in fee, utility corridors, and irrigation and flood control waterways so as to mix uses, separate traffic and noise, and provide more services at less cost in one corridor.~~ *Require, where feasible, trails in urban areas to be located either outside of road rights-of-way or within road rights-of-way with the additional dedication right-of-way or easements in fee title to the County of Riverside requiring dual use of utility corridors, irrigation and flood control channels so as to mix uses, separate traffic and noise, and provide more trail services at less cost.*

b. Secure separate rights-of-way for non-motorized trails when physically, financially and legally feasible. Where a separate right-of-way is not feasible, maintain recreation trails within the County *of Riverside or Flood Control* right-of-way, *where feasible*.

c. *Develop and implement* ~~Use~~ trail design standards which will minimize maintenance due to erosion or vandalism.

d. Maximize visibility and physical access to trails from streets and other public lands.

e. Provide a trail surface material that is firm and unyielding to minimize erosion and injuries.

~~d~~*f.* When a trail is to be ~~reserved~~ *obtained* through the development approval process, base the precise trail alignments on the physical characteristics of the property, assuring connectivity through adjoining properties.

~~e~~g. Consider the use of abandoned rail lines as multipurpose rail-trails *corridors through the "Rails-to-Trails" program.* ~~for multi-purpose trails.~~

~~f~~*h.* Place all recreation trails ~~a~~ safe distance*s* from the edge*s* of active aggregate mining operations and separate them by physical barriers, *such as fences, berms, and/or other effective separation measures.* ~~i~~ Avoid placing a trail where it will cross an active *mined materials* haul route.

~~g~~*i.* Install warning signs indicating the presence of a trail at locations where regional or community trails cross public roads with high amounts of traffic. *Design and build trail crossings at intersections with proper signs, signals, pavement markings, crossing islands, and curb extensions to ensure safe crossings by users. Install trail crossing signs signal lights (as appropriate) at the intersections of trail crossings with public roads to ensure safe crossings by users.*

~~h~~*j.* *Design and construct trails that properly account for* ~~Take into consideration~~ such issues as sensitive habitat areas, *cultural resources,* flood*ing* potential~~s~~, access to neighborhoods and open space, safety, alternate land uses, and usefulness for both transportation and recreation. ~~when designing and constructing trails.~~

~~i~~*k.* Coordinate with other agencies and/or organizations (such as the U.S. Fish and Wildlife Service*, National Park Service, Bureau of Land Management, U. S. Army Corp of Engineers, U. S. Bureau of Reclamation,* and the *California* Department of Transportation) to encourage the development of multi-purpose trails. Potential joint uses may include historic*, cultural resources,* and environmental interpretation, access to fishing areas and other recreational uses, opportunities for education, and access for the disabled.

~~j~~*l.* Work with landowners to address concerns about privacy, liability, security, and trail maintenance.

m. Regional Urban and Rural, and Regional Open Space trails should be designed so as to be compatible with the community contexts in which the trails are being sited.

n. Driveway crossings by trails should be designed and surfaced in a manner compatible with multipurpose trails usage. Except for local, neighborhood-serving trails that are not intended as primary community linkages, select routes for trails that minimize driveway crossings.

o. Benches, fencing, water fountains, trees and shading, landscape buffers, rest stops, restrooms, and other trail-related amenities shall be provided where appropriate.

p. All trails along roadways shall be appropriately signed to identify safety hazards, and shall incorporate equestrian crossing signals, mileage markers, and other safety features, as appropriate.

q. Information about Riverside County's trail system shall be provided at the Riverside County Park and Open Space District and online in order to make the public aware of Riverside County's trail system.

r. Trails shall not be sited along sound walls, project boundary walls, and other walls that effectively obstruct visibility beyond the edge of a trail.

s. All trail surfacing shall be appropriate to an array of users of the trail. Soft-surfaced trails shall have smooth, firm, slip-resistant surfacing so as to minimize foot and ankle injuries.

t. Use already available or disturbed land for trails wherever possible for new or extended trails.

u. Use pervious pavement or bio-swales along paved trails to assist in maintaining water quality.

Policy C *16.8* (Previously C 16.7): Require the installation (where appropriate *and pursuant to County of Riverside standards) of the appropriate styles of fencing along trail alignments that separate trails from road right-of-ways (ROWs), or where trails are located within road ROWs, that provide adequate separation from road traffic, in order to adequately provide for public safety. Examples of such fence types include simulated wood post and rail fencing constructed of PVC material, wood round post and rail, and wood-textured concrete post and rail fencing.* ~~a simulated split rail fence with 2 to 3 rails constructed of white PVC material separating road rights of way from adjacent trail easements.~~

Policy C 17.1: Develop Class I Bike Paths, Class II Bike Lanes and Class I Bike Paths/Regional Trails (Combo Trails) as shown in the Trails Plan (*[General Plan]* Figure C-*7*), to the design standards as outlined in the California Department of Transportation Highway Design Manual, *adopted County Design Guidelines (for communities that have them), the Riverside County Regional Park and Open Space Trails Standards Manual,* and other *Riverside* County guidelines.

Policy C 17.3: Ensure that the bikeway system incorporates the following:

a. Interconnection *throughout and between* ~~of~~ cities and unincorporated communities.

b. ~~Provision of~~ *Appropriate* lanes to specific destinations such as state or county parks.~~;~~

c. ~~Provision for~~ *Appropriate opportunities for recreational bicycle riding and* bicycle touring.~~; and~~

d. ~~Encouragement of~~ *Opportunities for* bicycle commuting~~.~~ *and golf cart commuting within a community, as appropriate for the terrain, traffic levels and proximity to surrounding destinations.*

e. Bikeways connecting to all urban transit centers and systems (bus stops and Metrolink stations) in the vicinity.

f. Bicycle parking at transit stops and park-and-ride lots.

Policy C 17.4: Ensure that alternative modes of motorized transportation, such as buses, trains, *taxi cabs,* etc., plan and provide for transportation of recreational and commuting bicyclists and bicycles on public transportation systems. *Coordinate with all transit operators to ensure that bicycle facilities are provided along and/or near all transit routes, whenever feasible. New land developments shall be required to provide bicycle facilities to existing or future planned transit routes.*

Policy C 18.1: *TRAIL* ACQUISITION

a. Promote public/private partnerships for trail acquisition.

b. Seek ways to build a trail system affordably, and seek partners in doing so within a reasonable time frame, possibly in stages, to serve all trail communities, and upgrade the system of linkages/destinations.

~~b~~*c.* Determine which public and/or private agencies have *existing* easements or ~~existing~~, unused rights-of-way, which potentially could be incorporated as trail linkages throughout Riverside County. Such agencies may include the Riverside County Flood Control *and Water Conservation* District, *regional and local park districts and transportation agencies, cities, federal or state land management entities,* various utility companies/ districts, and railroad companies. ~~, leverage – u~~*Use* roads, dirt roads, *and other easements* as trails routes.~~,~~ *to f*~~F~~oster partnerships~~, get~~ *which serve to facilitate* the *siting, building and management of* trails ~~built and managed, etc~~.

~~c~~*d.* Evaluate the potential use of private-landowner tax credits for acquiring necessary trail easements and/or rights-of-way. A system such as this would allow a landowner to dedicate an easement for trail purposes in exchange for having that portion of the property assessed as open-space instead of a higher land-use category.

e. Seek to connect existing cul-de-sacs to each other, and to trail networks. In rare occasions, this may entail purchasing homes at the ends of streets, constructing the connections, and reselling the homes.

f. Wherever possible and to the extent consistent with overall trail system objectives, use trail designs and locations that minimize construction and maintenance costs.

Policy C 18.2: *TRAIL MANAGEMENT AND* MAINTENANCE

a. Implement maintenance options such as the use of volunteers, associations, or private landowner maintenance agreements, and/or adopt-a-trail programs sponsored by various groups.

b. Implement methods to discourage unauthorized use of trails by motorized vehicles, which may cause trail deterioration, create an unsafe environment, and/or disrupt the enjoyment of the trails by legitimate trail users. These methods may include the installation of gates and motorcycle barriers, posting signs prohibiting unauthorized activities, or implementing educational programs to encourage the proper use of trails.

c. Research the potential for, and consider establishing a countywide trail management entity that will facilitate the acquisition of adequate funds for trail maintenance.

d. Research the potential for, and consider establishing a separate agency within ~~the~~ *Riverside* County to manage and maintain ~~the~~ *Riverside* County's trails system.

e. Use trail designs that remove or limit injury/safety liability concerns.

f. Use trail designs that minimize trail maintenance costs.

Policy C 18.3: *TRAIL* FUNDING

a. Solicit all possible sources of funding to plan, acquire, and construct recreational trails. Sources can include, but not be limited to, development mitigation fees, private foundation grants~~, and/or~~ funds~~/~~ *or assessments* from local, regional, state, ~~and~~ *or* federal government entities.

b. Persuade local communities to finance their own community trail systems through the use of special tax *assessment* districts. If applicable, these districts should also provide adequate regulation for the keeping of horses.

~~**Policy C 19.2:** Wind turbine generators have proven to be a unique tourist attraction.~~

Policy C 20.1: Ensure preservation of trees identified as superior examples of native vegetation within road rights-of-way through development proposals review process. *Where the County of Riverside deems preservation to be infeasible, relocation and/or replacement shall be evaluated by a qualified arborist to ensure that impacts are mitigated.*

Policy C 20.3: Locate roadways outside identified flood plains whenever possible.

NEW **Policy C 20.4:** *New crossings of watercourses by local roads shall occur at the minimum frequency necessary to provide for adequate neighborhood and community circulation and fire protection. Wherever feasible, new crossings shall occur using bridging systems that pass over entire watercourses and associated floodplains and riparian vegetation in single spans. Dip or culvert crossings shall be avoided, but, where their use is unavoidable, they shall be designed to minimize impacts on watercourses.*

NEW **Policy C 20.5:** *In order to protect the watershed, water supply, groundwater recharge, and wildlife values of watercourses, the County of Riverside will avoid siting utility infrastructure and associated grading, fire clearance, and other disturbances within or adjacent to watercourses, if there are feasible alternatives available, and discourage special districts and other governmental jurisdictions outside of Riverside County's authority, from doing so. Where such watershed utility siting locations cannot be avoided, the impacts on watercourses shall be minimized.*

Policy C *20.6* (Previously C 20.4): Control dust and mitigate other environmental impacts during all stages of roadway construction.

Policy C *20.7* (Previously C 20.5): Protect all streets and highways located within identified blow sand areas from blowsand hazards to the extent practicable.

Policy C *20.8* (Previously C 20.6): Protect *Riverside* County residents from transportation generated noise hazards. Increased setbacks, walls, landscaped berms, other sound absorbing barriers, or a combination thereof shall be provided along freeways, expressways, and four-lane highways in order to protect adjacent noise-sensitive land uses from traffic-generated noise impacts. Additionally, noise generators such as commercial, manufacturing, and/or industrial activities shall use these techniques to mitigate exterior noise levels to no more than 60 decibels.

Policy C *20.9* (Previously C 20.7): Incorporate specific requirements of the Western Riverside County Multiple Species Habitat Conservation Plan and the Coachella Valley Multiple Species Habitat Conservation Plan into transportation plans and development proposals.

Policy C *20.10* (Previously C 20.8): Avoid, where practicable, disturbance of existing communities and biotic resource areas when identifying alignments for new roadways, or for improvements to existing roadways and other transportation system improvements.

Policy C *20.11* (Previously C 20.9): Implement the Circulation Plan in a manner consistent with federal, state, and local environmental quality standards and regulations.

Policy C *20.12* (Previously C 20.10): Review ~~and monitor~~ proposals for expansion of pipelines for the transport of suitable products and materials~~, and require mitigation of environmental impacts. In particular, require mitigation of~~. *Any project proponent of such a pipeline shall mitigate impacts, particularly* the potential for hazardous chemical or gas leakage and explosion~~.~~*, in accordance with local, state and federal regulations.*

Policy C *20.13* (Previously C 20.11): Incorporate specific requirements of the General Plan Air Quality Element into transportation plans and development proposals where applicable.

Policy C *20.14* (Previously C 20.12): Encourage the use of alternative non-motorized transportation and the use of non-polluting vehicles.

Policy C *20.15* (Previously C 20.13): Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting the groundwater supply.

Policy C 21.1: Encourage the installation and use of HOV lanes. Such lanes should be continuous, linking major population centers with employment centers. If HOV lanes are used, consider making them available for mixed flow traffic during non-peak periods where warranted and feasible. *Consider and implement, where feasible and needed, direct HOV connections between freeways and arterial to freeway exclusive HOV ingress/egress ramps.*

~~**Policy C 21.2:** Consider the use of HOV lanes when any widening project is undertaken on urban arterials and expressways.~~

Policy C *21.2* (Previously C 21.3): Consider creating HOV lanes by adding additional travel lanes instead of removing existing mixed-flow traffic lanes.

Policy C *21.3* (Previously C 21.4): Give priority to TSM *(transportation systems management)* strategies to improve level of service, particularly in areas that are fully developed.

Policy C *21.4* (Previously C 21.5): Construct and improve traffic signals at appropriate intersections. Whenever possible, traffic signals should be spaced and operated as part of coordinated systems to optimize traffic operation *and reduce congestion*.

Policy C *21.5* (Previously C 21.6): Consider roadway expansion at public expense to relieve congestion only after the determination has been made that TSM *(transportation systems management)* measures will not be effective.

Policy C *21.6* (Previously C 21.7): Install special turning lanes whenever necessary to relieve congestion and improve safety.

~~**Policy C 21.8:** Install one-way streets and exclusive or reversible lanes where applicable.~~

Policy C *21.7* (Previously C 21.9): Encourage development of bus-only lanes and signal synchronization so that transit can help to alleviate congestion.

~~**Policy C 23.4:** Support provisions to physically separate heavily traveled rail lines from heavily traveled streets and roads.~~

Policy C *23.4* (Previously C 23.5): Create grade separations that locate arterials under or over rail lines that carry substantial amounts of freight from the ports along critical routes such as the Los Angeles-Orangethorpe-Riverside rail freight corridor.

~~**Policy C 23.6:** Address alternatives for intermodal shipment for industries affected by abandonment of rail facilities.~~

***NEW* Policy C 23.5:** *Support provisions to physically separate heavily traveled rail lines from heavily traveled streets and roads.*

Policy C *23.6* (Previously C 23.7): Encourage the efficient movement of goods by rail through development of efficient intermodal freight facilities and a shift of a portion of the goods previously moved by trucks onto the rail freight system.

Policy C *23.7* (Previously C 23.8): Identify street and highway improvement and maintenance projects that will improve goods movements and implement projects that are economically feasible.

NEW **Policy C 23.8:** *Restrict truck through-traffic in residential areas and on streets with specific facilities that have high density of people/users; through planning and design of developments, direct truck traffic to major transportation corridors.*

~~**Policy C 23.9:** Study commercial truck movements and operations in the County and establish truck routes away from noise-sensitive areas where feasible.~~

~~**C 23.10:** Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and truck through-traffic to designated routes; and distribute maps of approved truck routes to County traffic officers~~

Policy C *23.9* (Previously C 23.11): Encourage the construction of truck-only lanes*, climbing lanes or turnouts* where appropriate.

Policy C 25.1: Promote and encourage efficient provisions of utilities such as water, wastewater, and electricity that support ~~the~~ Riverside County's Land Use Element at build out.

Policy C 25.2: Locate new and relocated utilities underground when possible *and feasible*. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

4.18.4 Thresholds of Significance for Transportation and Circulation

The Riverside County Environmental Assessment which complies with the State CEQA Guidelines identifies that a proposed project would result in a significant impact to the circulation system if it would:

A. Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

B. Conflict with an applicable congestion management program, including, but not limited to level of service targets and travel demand measures, or other targets established by the county congestion management agency for designated roads and highways.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

D. Alter waterborne, rail or air traffic.

E. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

F. Cause an effect upon, or a need for a new or altered maintenance of roads.

G. Cause an effect upon circulation during the project's construction.

H. Result in inadequate emergency access or access to nearby uses.

I. Conflict with adopted policies, plans or programs regarding public transit, bikeways or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities.

4.18.5 Analysis of Project Impacts and Determination of Significant Impacts

The analysis of project impacts and determination of significance considers nine main issues including:

- County roadways
- Regional roadways
- Air travel
- Waterborne or rail
- Transportation safety
- Road maintenance
- Effects during construction
- Emergency vehicle access
- Alternative transportation modes

A. Would the project have a substantial adverse impact on traffic conditions for County roadways?

Impact 4.18.A – Conflict with an Applicable Plan, Ordinance or Policy Establishing a Measure of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel and Relevant Components of the Circulation System, Including, but Not Limited to Intersections, Streets, Highways and Freeways, Pedestrian and Bicycle Paths and Mass Transit: GPA No. 960 proposes to revise the LOS threshold for determining adverse impacts to Riverside County roadways. At present, the countywide threshold for significance is LOS C, with LOS D and E allowed in certain instances. When a roadway facility is projected to operate at a deficient LOS, this situation is often remedied by upgrading the facility designation to a higher classification, thus providing more capacity. By lowering the LOS threshold, fewer facilities would need to be upgraded in order to meet the new proposed LOS target. However, even with the lower LOS threshold and upgrades in roadway classifications, several roadways are still projected to operate at a deficient LOS. In addition, a number of roadways that would operate at an acceptable LOS if their classification were upgraded, cannot be upgraded due to physical or environmental constraints.

Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County relative to existing conditions, and increase travel demand within Riverside County. Compliance with existing laws, rules, regulations and policies, both existing and proposed, together with revisions to the Circulation Element for Riverside County will reduce impacts to the maximum extent feasible and practical; however, even with these measures impacts to the Riverside County roadway system will be significant and unavoidable.

1. Analysis of Impact 4.18.A

For Riverside County roadway facilities, GPA No. 960 is identified as having a significant and adverse effect on traffic conditions if the following criteria are met: a roadway segment is projected to operate at LOS E or F.

The analysis utilized long-range traffic forecasting data provided by sub-regional traffic model known by the acronym RIVTAM. RIVTAM was developed by the County of Riverside Transportation Department (RCTD), with the cooperation of WRCOG, CVAG, RCTC, SCAG and Caltrans, which completed the development of RIVTAM in May 2009. RIVTAM is a TransCAD model, based on SCAG's Regional Transportation Model that it used in developing the 2035 Regional Transportation Plan (2008 RTP). TransCAD is the name of a commercially available software package used for transportation system modeling by many agencies in the United States and abroad.

SCAG's Regional Transportation Model encompasses a large geographic area that consists of the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. Because of the size of the area, the SCAG model lacks the degree of detail that is often necessary for transportation planning at the county and local jurisdiction levels. RIVTAM incorporates a great deal of detail in Riverside County, while maintaining consistency with the SCAG Regional Model.

RIVTAM has been validated to a finer level of detail than the SCAG Regional Model. The SCAG model has been validated for 2003 as the base year. Model validation is the process whereby model generated traffic volumes for individual roadways are compared to actual ground counts on those roadways. For RIVTAM, the validation base year is set at 2007. Traffic counts were made at over 300 locations late in 2007 and early 2008. These counts, supplemented by counts available from Caltrans and local jurisdictions, were used in the RIVTAM validation process. The SCAG Regional Model validation within Riverside County addressed five traffic flow corridors and about 50 individual segments in these corridors. For RIVTAM, about 46 traffic flow corridors and about 350 individual roadway segments within these corridors were analyzed.

The Traffic Analysis Zone (TAZ) system in RIVTAM is more detailed than the SCAG Regional Model. Within Riverside County, the SCAG model has 478 Traffic Analysis Zones (TAZ's). These 478 TAZs were subdivided into 1,814 in RIVTAM. This finer level of TAZ disaggregation, coupled with a finer roadway network, yields better traffic forecasts on individual roadway segments.

RIVTAM has a more detailed roadway network than the SCAG Regional Model. RIVTAM added 570 centerline miles of roadways to the network in the SCAG Regional Model. RIVTAM incorporates all facilities in the Riverside County General Plan, classified as Secondary and above. In addition some Collectors are included, as necessary, to insure that all TAZs are connected to the network of General Plan roadways.

RIVTAM is consistent with the SCAG Regional Model in all technical and procedural aspects. RIVTAM does not alter any of the SCAG Regional Model assumptions and parameters. Data inputs for areas outside of Riverside County are identical to the SCAG Regional Model. Within Riverside County, more refined data is incorporated as described above.

RIVTAM is the product of a cooperative multi-agency effort. Staff of the participating agencies met at the policy and technical levels on over 30 occasions to review work products, provide direction to the project consultant, and to discuss a variety of matters. The agencies also collaborated by providing applicable data, reports and other information.

Additional information on the specifics of the RIVTAM model and the validation of the model is summarized in the *Final Report – Riverside County Transportation Analysis Model (RIVTAM) Model Development & Validation Report and Users Guide* (February 2009) which is available in Appendix EIR-4.D.

In order to forecast future traffic conditions at the theoretical build out of Riverside County, including a cumulative analysis of build out of the cities within Riverside County, socioeconomic data (SED) were developed to represent the land use plans of Riverside County and cities. SED is used as major input to the RIVTAM traffic forecasting model. RIVTAM, like the SCAG model, uses 52 socioeconomic variables as model inputs. Those variables include primary data such as population, households, school enrollments, household income, workers, and employment (or jobs). Land use was converted to SED using the General Plan's Appendix E-1: Socioeconomic Build Out Projections, Assumptions and Methodology. With this input, it is possible to forecast future traffic volumes on a system wide macro level. Traffic models are a valuable tool in evaluating future travel demand and afford decision makers the ability to compare the effects of various scenarios.

a. Methods of Analysis

The analysis of Impact 4.18.A considers the changes proposed by GPA No. 960 in terms of five items:

a. Regulatory Compliance

b. Trip Generation

c. Vehicle Miles Traveled (VMT)

d. Vehicle Hours Traveled (VHT)

e. Levels of Service (LOS)

For items *b* through *e* above, several analysis scenarios were completed to provide information to disclosure of the impacts associated with GPA No. 960. These scenarios are summarized below:

- **Baseline Conditions** – Existing conditions as described earlier in this chapter.

- **Baseline-Plus Project Conditions** – Existing land use and roadway network for all locations outside of Riverside County boundaries (e.g., within the cities), and build out of GPA No. 960 land use and roadway network for all Riverside County facilities. This scenario demonstrates the impacts associated with changes proposed by GPA No. 960 in relation to existing conditions not under Riverside County jurisdiction.

- **Existing General Plan** – Represents build out of the 2003 General Plan (adopted) and build out of areas and roadways not under Riverside County jurisdiction. This scenario was developed for comparison purposes to see not only how the changes proposed in GPA No. 960 affect the roadway network, but also includes the cumulative impacts of all of the incorporated cities as well. While this scenario reflects the 2003 General Plan land use, it does not include the internal East-West CETAP Corridor with the Orange County extension in the roadway network, as RCTC has placed planning this facility on hold while they explore other options. This scenario is not used for impact

determination, but it provides valuable information for the decision makers to understand the differences between the Existing General Plan and GPA No. 960. Since it is not used for impact determination, operational characteristics of this scenario are only provided in the summary comparisons of the analysis results.

- **GPA No. 960** – Represents build out of GPA No. 960 plus build out of all area land use and circulation improvements not under Riverside County jurisdiction. This cumulative analysis when compared to the Existing General Plan clearly indicates the impacts associated with changes associated with GPA No. 960.

For purposes of this assessment, GPA No. 960 includes the following major modifications compared to the Existing General Plan Conditions:

Changes to the General Plan Circulation Element are categorized as follows:

- **Roadway Additions:** Additions to the existing Circulation Element are proposed due to changes in incorporated areas, due to approved Specific Plans in the unincorporated areas, for reasons of providing network continuity, for consistency with regional planning efforts, and in response to the findings of studies addressing specific areas.

- **Roadway Deletions:** Deletions to the existing Circulation Element are proposed due to changes in incorporated areas; the approval of Specific Plans in unincorporated areas; findings of studies addressing specific areas demonstrating that a roadway segment would not be needed; unavailability of right-of-way (ROW) and/or expectation of extreme difficulty in acquiring ROW; and other constraints, such as environmental sensitivity. The most significant of these deletions is the internal East-West CETAP Corridor with an extension into Orange County. The RCTC has placed planning efforts for this future facility on hold and is currently exploring a wide variety of highway and transit options in order to increase capacity to accommodate the travel demand between Riverside County and Orange County.

- **Roadway Re-alignments:** Roadway re-alignments are proposed for purposes of avoiding steep grades, to avoid disrupting adjacent communities, or to take advantage of availability of ROW.

- **Re-classification:** Changes in classification, to downgrade or upgrade, are proposed due to changes in incorporated areas, in response to the findings of studies addressing specific areas, due to unavailability of ROW and/or expectation of extreme difficulty in acquiring additional ROW.

- **Miscellaneous Graphic Changes:** Miscellaneous administrative changes are proposed for such matters as graphically marking the location of crossings of flood control channels, railroad grade separations, improvement of graphic representations, addition of street names, and other miscellaneous changes. This category of changes would not have traffic impacts.

- **Policies:** A series of proposed policy changes within the Circulation Element have been identified and are described earlier in this chapter.

Figures 4.18.1.1 to 4.18.31.21 contained in Appendix EIR-4.E present information related to the analysis scenarios described above, including roadway network assumptions, Metrolink and BRT/expressbus assumptions, traffic flow and levels of service. . The differences between the existing Circulation Element and the proposed Circulation Element are detailed in Figures 4.18.23.1 to 4.18.23.21 in Appendix EIR-4.E.

Trip Generation

Table 4.18-J (Population, Household, Employment and Trip Generation Comparison) summarizes the population, household, employment, and trip generation estimates for each of the scenarios described above. The information was developed using the land use estimates for each scenario, and by summing the inbound and outbound vehicle trips to/from each zone within the RIVTAM model.

Table 4.18-J Population, Household, Employment and Trip Generation Comparison

	Baseline	Baseline + Project	Existing General Plan	GPA No. 960
Population	2,030,649	3,141,125	~~4,795,157~~*4,754,888*	~~4,775,846~~*4,735,577*
Households	653,858	974,093	~~1,489,444~~*1,476,900*	~~1,483,735~~*1,471,191*
Employment	731,232	1,132,510	~~2,114,052~~*2,118,938*	~~2,055,489~~*2,060,375*
Trip Generation	8,180,157	10,526,266	~~17,918,938~~*17,833,993*	~~17,669,642~~*17,591,508*

Source: Riverside County Staff. SED data and trip generation based on information from the RIVTAM model. 2012.

As shown in the table above, all analysis scenarios will generate additional population and, therefore, additional vehicle trips compared to the baseline scenario. Key summaries of the data are summarized below:

- Growth in GPA No. 960 only (e.g., Baseline-Plus Project Conditions) increases trip generation in Riverside County by 29% compared to Baseline Conditions.
- The Existing General Plan (including build out of the cities) would increase to total number of vehicle trips by ~~119~~*118*% compared to Baseline Conditions.
- GPA No. 960 (including growth in the cities) would increase countywide trip generation by ~~116~~*115*%. This represents a ~~3~~*1*% reduction in total trips compared to the Existing General Plan.

Thus, GPA No. 960 results in in a slight reduction in growth from the current General Plan, which translates into a slight reduction in travel demand in terms of trips generated. This reduction is attributable to reductions in households and employment when compared to the Existing General Plan.

Vehicle Miles Traveled

Vehicle Miles Traveled (VMT) is determined by multiplying each roadway's segment mileage by the number of vehicles that traveled on the segment on an average weekday, or Average Daily Trip (ADT). This measure is influenced by the total number of vehicles using a roadway and the distances the vehicles have to travel between their points of origin and destination.

Daily VMT is influenced by several factors including the number of daily trips generated, system circuity and system congestion. If the number of trips is increased and there are no changes in the circulation system, VMT will increase. VMT can be reduced if system circuity is decreased by creating more direct connections between points where trips want to go. System congestion can cause VMT to increase. When system roadways are congested beyond their capacities, excess trips will seek out alternative paths on more circuitous paths. Daily VMT is shown in Table 4.18-K (VMT Summary) for all analysis scenarios.

Table 4.18-K Vehicle Miles Traveled (VMT) Summary

	Baseline	Baseline + Project	Existing General Plan	GPA No. 960
Population	2,030,649	3,141,125	~~4,795,157~~*4,754,888*	~~4,775,846~~*4,735,577*
VMT	54,527,493	78,913,568	~~155,196,166~~*147,032,566*	~~146,483,727~~*137,403,000*
VMT Per Person	26.85	25.12	~~32.37~~*30.92*	~~30.67~~*29.02*

Source: Riverside County Staff. VMT based on information from the RIVTAM model.

Recent legislative developments are currently focusing attention on alternative measures to determine transportation impacts. Senate Bill 743, amending CEQA with respect to how transportation impacts are to be evaluated, was signed by Governor Brown on September 27, 2013. Since then the California Office of Planning and Research (OPR) has been developing new guidelines which would eliminate the use of LOS measures in evaluating transportation impacts in CEQA documents in favor of a methodology which focuses on vehicle miles of travel (VMT).

The draft guidelines from OPR, which are still in the process of review, call for an analysis of VMT as a preferred measure of transportation impacts. At the time of this writing, OPR has not yet provided a methodology which can be implements to use VMT to determine if a project has transportation impacts under CEQA.

It is, however, relevant to note ~~The results indicate~~ that the Baseline-Plus Project scenario produces the smallest VMT per person, even lower than the baseline level, and the lowest increase in overall VMT. However, the Baseline-Plus Project scenario does not address the cumulative impacts of growth within the incorporated cities. As such, it is a purely hypothetical scenario. The Existing General Plan and GPA No. 960 scenarios both provide analysis which includes cumulative city growth. The GPA No. 960 scenario provides better than a ~~5~~*6*% reduction in both VMT per person and overall VMT as compared to the Existing General Plan. This measure of transportation system performance indicates that there are transportation benefits from GPA No. 960 associated with reduced Daily VMT when compared to the Existing General Plan Conditions.

Vehicle Hours Traveled

Daily Vehicle Hours Traveled (VHT) is the sum of time of the ADT spent traversing a roadway. The RIVTAM traffic model tracks the time required to travel over each segment as it analyzes trips, and accounts for the effect of traffic slowing due to traffic congestion on the amount of time it takes to cross a segment.

Factors that influence VHT include the number of trips generated, roadway capacity on routes of travel and operating speeds at free flow and congested conditions. As roadways become more congested due to additional traffic, traffic speeds decrease, causing travel time to increase. VHT is an excellent measure of the efficiency of the circulation system which can indicate if roadway capacity is allocated where there is travel demand.

Table 4.18-L (VHT and Average Travel Speed Summary) shows the total vehicle hours of travel (VHT) and average speeds under the analysis scenarios. These measures are good indicators for a general comparison of the overall amount of travel and quality of travel (average speed).

Table 4.18-L Vehicle Hours Traveled (VHT) and Average Travel Speed Summary

	Baseline	Baseline + Project	Existing General Plan	GPA No. 960
VHT	1,957,669	2,883,439	~~8,161,713~~*7,782,465*	~~7,064,338~~*6,685,158*
Average Speed (MPH)	~~25.00~~*27.85*	~~25.00~~*27.37*	~~23.25~~*18.89*	~~23.93~~*20.55*

Source: Riverside County Staff. VHT and average speed based on information from the RIVTAM model.

The results indicate that VHT for the GPA No. 960 Conditions would result in approximately ~~13~~*14*% less travel time countywide compared to the Existing General Plan. However, as additional population is added to Riverside County, VHT will increase countywide compared to Baseline Conditions.

Looking at the average travel speed, the scenario that performs the worst is the Existing General Plan as it has the lowest average travel speed. Although GPA No. 960 does decrease average vehicle speed relative to the Baseline and Baseline-Plus Project scenarios, it provides a higher average vehicle speed relative to the Existing General Plan, and reduces the Baseline ~~and Baseline-Plus Project~~ average speed of ~~25~~*27.85* miles per hour by only ~~4.3~~*26.2*%.

Vehicle Levels of Service

The RIVTAM model was used to project future operating conditions under each of the analysis scenarios summarized above. The results are summarized below for the Baseline-Plus Project, Existing General Plan, and GPA No. 960 Conditions.

The following results summarize only facilities that are operating at unacceptable levels. EIR Appendices 4-A and 4-B provide the complete list of facility operations.

b. Results for Baseline-Plus Project Conditions

The results of the Baseline-Plus Project Conditions are summarized in Table 4.18-M (Baseline and Baseline-Plus Project (County Growth) Freeway and State Route Segment LOS) for freeway segments and in Table 4.18-N (Baseline and Baseline-Plus Project Roadway Comparison for Segments One Mile or Longer (Arterial Road Network)) for roadway segments. The table also summarizes Baseline Conditions for comparison.

Table 4.18-M Baseline and Baseline-Plus Project (County Growth) Freeway and State Route Segment LOS

Roadway Segment	Limits	Baseline Data				Baseline-Plus Project	
		Facility Type	No. of Lanes	Daily Volumes	Level of Service	Daily Volumes	Level of Service
I-10	San Bernardino Co Line-County Line Rd	Freeway	6	103,000	D or Better	153,000	F
I-10	County Line Rd - Calimesa Blvd	Freeway	6	95,000	D or Better	145,000	F
I-10	Calimesa Blvd - Singleton Rd	Freeway	6	98,000	D or Better	149,600	F
I-10	Singleton Rd - Cherry Valley Blvd	Freeway	6	98,000	D or Better	149,200	F
I-10	Cherry Valley Blvd-San Timoteo Cyn Rd	Freeway	6	90,000	D or Better	139,000	F
I-10	San Timoteo Canyon Rd - Jct Rte 60	Freeway	6	89,000	D or Better	139,900	F
I-10	Jct Rte 60 - Jct Rte 79 South	Freeway	8	126,000	D or Better	205,600	F
I-10	Jct Rte 79 S- Pennsylvania Ave	Freeway	8	128,000	D or Better	209,000	F
I-10	Pennsylvania Ave - Highland Springs Ave	Freeway	8	134,000	D or Better	215,300	F
I-10	Highland Springs Ave- Banning, Sunset Ave	Freeway	8	129,000	D or Better	209,800	F
I-10	Sunset Ave-22nd St	Freeway	8	126,000	D or Better	206,300	F
I-10	22nd St - Jct Rte 243 (S Eighth St)	Freeway	8	123,000	D or Better	204,300	F
I-10	Jct Rte 243 (S Eighth St) -Banning, Hargrave St	Freeway	8	120,000	D or Better	202,400	F
I-10	Hargrave St- East Ramsey St	Freeway	8	110,000	D or Better	196,400	F
I-10	East Ramsey St - Reservation Rd/ Fields Rd	Freeway	8	113,000	D or Better	201,700	F
I-10	Reservation Rd/Fields Rd - Apache Trail Rd	Freeway	8	106,000	D or Better	197,700	F
I-10	Apache Trail Rd - Morongo Pkwy	Freeway	8	94,000	D or Better	183,000	F
I-10	Morongo Pkwy - E Cabazon Interchange, Main Street	Freeway	8	94,000	D or Better	183,000	F
I-10	E Cabazon Interchange, Main Street-Verbenia Ave	Freeway	8	94,000	D or Better	184,900	F
I-10	Verbenia Ave-Elm St	Freeway	8	94,000	D or Better	187,800	F

Roadway Segment	Limits	Baseline Data				Baseline-Plus Project	
		Facility Type	No. of Lanes	Daily Volumes	Level of Service	Daily Volumes	Level of Service
I-10	Elm St-Jct Route 111	Freeway	8	94,000	D or Better	187,800	F
I-10	Haugen-Lehmann Way-Jct Rte 111	Freeway	8	94,000	D or Better	190,000	F
I-10	Jct Rte 111-Whitewater Interchange	Freeway	8	81,000	D or Better	169,200	E
I-10	Whitewater Interchange - Jct Rte 62 N	Freeway	8	81,000	D or Better	166,500	E
I-10	Palm Dr/Gene Autry Trail-Landau Blvd	Freeway	8	88,000	D or Better	172,500	E
I-10	Landau Blvd-Date Palm Dr	Freeway	8	88,000	D or Better	172,500	E
I-10	Date Palm Dr - Da Vall Dr	Freeway	8	94,000	D or Better	172,100	E
I-10	Da Vall Dr - Bob Hope Dr	Freeway	8	94,000	D or Better	172,100	E
I-10	Ramon Rd - Monterey Ave	Freeway	6	96,000	D or Better	166,700	F
I-10	Monterey Ave-Portola Ave	Freeway	6	97,000	D or Better	166,200	F
I-10	Portola Ave-Cook Street	Freeway	6	97,000	D or Better	166,200	F
I-10	Cook Street-Washington Street	Freeway	6	94,000	D or Better	162,600	F
I-10	Washington St - Jefferson St/Indio Blvd	Freeway	6	83,000	D or Better	152,100	F
I-10	Jefferson St/Indio Blvd-Monroe St	Freeway	6	68,000	D or Better	132,200	F
I-10	Jefferson St/Indio Blvd-Monroe St	Freeway	6	68,000	D or Better	132,200	F
I-10	Monroe St - Jackson St	Freeway	6	62,000	D or Better	129,300	E
I-15	Murrieta Hot Springs Rd -Los Alamos Rd	Freeway	6	127,000	E	127,200	E
I-15	Los Alamos Rd -California Oaks Rd	Freeway	6	127,000	E	127,700	E
I-15	California Oaks Rd-Clinton Keith Rd	Freeway	6	124,000	E	127,800	E
I-15	Clinton Keith Rd-Baxter Rd	Freeway	6	123,000	D or Better	129,000	E
I-15	Baxter Rd-Bundy Canyon Rd	Freeway	6	118,000	D or Better	124,200	E
I-15	Railroad Canyon Rd-Bancroft Way, Franklin St	Freeway	6	122,000	D or Better	138,300	F
I-15	Bancroft Way, Franklin St-Main St	Freeway	6	122,000	D or Better	138,300	F
I-15	Main Street-Jct Rte 74	Freeway	6	119,000	D or Better	134,000	F
I-15	Jct Rte 74-Nichols Rd	Freeway	6	107,000	D or Better	127,900	E
I-15	Nichols Rd-Lake Street	Freeway	6	109,000	D or Better	131,200	E
I-15	Lake Street-Horsethief Canyon Rd	Freeway	6	115,000	D or Better	132,500	F
I-15	Horsethief Canyon Rd-Indian Truck Trail	Freeway	6	115,000	D or Better	132,500	F
I-15	Indian Truck Trail-Temescal Canyon Rd	Freeway	6	121,000	D or Better	142,100	F
I-15	Temescal Canyon Rd-Weirick Rd	Freeway	6	131,000	E	160,500	F
I-15	Weirick Rd-Cajalco Rd	Freeway	6	146,000	F	181,200	F
I-15	Cajalco Rd-El Cerrito Rd	Freeway	6	155,000	F	191,000	F
I-15	El Cerrito Rd-Ontario Ave	Freeway	6	160,000	F	193,400	F
I-15	Ontario Ave-Magnolia Ave	Freeway	6	160,000	F	193,300	F
I-15	Magnolia Ave-Jct Rte 91	Freeway	8	174,000	E	203,200	F
I-15	Jct Rte 91- Hidden Valley Rd	Freeway	8	157,000	D or Better	166,700	E
I-15	Hidden Valley Rd-2nd Street	Freeway	8	156,000	D or Better	164,300	E
I-15	2nd St -4th St	Freeway	6	150,000	F	157,400	F
I-15	4th St -6th St	Freeway	6	150,000	F	157,400	F
I-15	6th St - Schleisman Rd	Freeway	6	150,000	F	157,300	F
I-15	Schleisman Rd - Limonite Ave	Freeway	6	150,000	F	157,300	F
I-15	Limonite Ave – Cantu-Galleano Ranch Rd	Freeway	6	145,000	F	151,300	F
I-15	Jct Rte 60-San Bernardino Co Line	Freeway	8	214,000	F	218,300	F
SR 60	Milliken Ave - Jct Rte 15	Freeway	6	155,000	F	174,000	F
SR 60	Jct Rte 15 - Van Buren Blvd	Freeway	6	124,000	E	146,800	F
SR 60	Van Buren Blvd - Etiwanda Ave	Freeway	6	137,000	F	159,700	F
SR 60	Etiwanda Ave - Mission Blvd	Freeway	6	123,000	D or Better	145,600	F
SR 60	Mission Blvd - Pedley Rd	Freeway	6	123,000	D or Better	146,800	F
SR 60	Pedley Rd - Pyrite Street	Freeway	6	121,000	D or Better	145,700	F

Roadway Segment	Limits	Baseline Data				Baseline-Plus Project	
		Facility Type	No. of Lanes	Daily Volumes	Level of Service	Daily Volumes	Level of Service
SR 60	Pyrite Street - Valley Way	Freeway	6	126,000	E	150,800	F
SR 60	Valley Way-Pacific Ave	Freeway	6+2	126,000	D or Better	154,100	E
SR 60	Pacific Ave-Rubidoux Blvd	Freeway	6+2	126,000	D or Better	154,100	E
SR 60	Rubidoux Blvd - Crestmore Ave	Freeway	6+2	131,000	D or Better	159,600	E
SR 60	Market St - Main St	Freeway	6+2	136,000	D or Better	165,300	E
SR 60	Main St - Orange St	Freeway	6+2	136,000	D or Better	165,000	E
SR 60	Orange St - Jct Rtes 91/215	Freeway	6+2	132,000	D or Better	161,300	E
SR 60	Jct Rtes 91/215 - East Jct Rte 215	Freeway	6+2	128,000	D or Better	160,300	E
SR 60	East Jct Rte 215 - Day street	Freeway	6	126,000	E	140,200	F
SR 60	Day St - Pigeon Pass Rd	Freeway	4	107,000	F	121,400	F
SR 60	Pigeon Pass Rd - Heacock St	Freeway	4	97,000	E	115,500	F
SR 60	Perris Blvd - Nason Street	Freeway	4	78,000	D or Better	104,300	F
SR 60	Nason St - Moreno Beach Blvd	Freeway	4	72,000	D or Better	100,600	F
SR 60	Moreno Beach Blvd -Redlands Blvd	Freeway	4	60,000	D or Better	92,600	E
SR 60	Jackrabbit Trail - Potrero Blvd	Expressway	4	44,000	D or Better	77,700	F
SR 60	Jackrabbit Trail - Jct Rte 10	Expressway	4	44,000	D or Better	77,700	F
SR 62	Indian Ave-San Bernardino Co Line	Mtn Art	2	22,000	F	27,100	F
SR 74	Grand Ave -Lake Shore Dr	Arterial	2	18,500	F	23,500	F
SR 74	Lake Shore Dr - Gunnerson St/ Strickland Ave	Arterial	2	24,000	F	24,800	F
SR 74	Gunnerson St/Strickland Ave - Jct Rte 15	Arterial	2	25,500	F	26,500	F
SR 74	Jct Rte 15 - Seventh St	Arterial	4	31,000	D or Better	45,600	F
SR 74	Seventh St - D St	Arterial	4	26,000	D or Better	41,900	F
SR 74	Jct Rte 215-Ethanac Rd	Arterial	4	25,500	D or Better	43,500	F
SR 74	Ethanac Rd-Menifee Rd	Arterial	4	24,500	D or Better	44,100	F
SR 74	Menifee road-Winchester Rd	Arterial	4	30,500	D or Better	56,400	F
SR 74	Winchester Rd-Jct Realigned Rte 79 S	Arterial	4	33,500	E	49,300	F
SR 74	Jct Realigned Rte 79 South-Warren Rd	Arterial	4	33,500	E	49,900	F
SR 74	Warren Rd- Lyon Ave	Arterial	4	29,500	D or Better	36,300	E
SR 74	Lyon Ave - State St	Arterial	4	31,500	D or Better	37,100	F
SR 74	State St - Jct 79 N	Arterial	4	29,500	D or Better	35,800	E
SR 74	Jct Rte 79 N - Yale Street	Major	4	27,500	D or Better	33,300	E
SR 74	Yale St-Cornell St	Major	4	25,500	D or Better	31,300	E
SR 74	Cornell St - Hemet St	Major	4	25,500	D or Better	33,600	E
SR 74	Hemet St- Mountain St	Major	4	19,500	D or Better	31,900	E
SR 74	Mountain St - San Bern Nat'l Forest Boundary	Mtn Art	2	16,000	E	28,700	F
SR 74	Jct Rte 371 West - Homestead Rd	Mtn Art	2	3,400	D or Better	16,900	F
SR 79	SR-371 - Sage Rd	Mtn Art	2	8,300	D or Better	16,600	F
SR 79	West of Sage Rd	Mtn Art	2	8,800	D or Better	17,800	F
SR 79	Murrieta Hot Springs Rd - Benton Rd	Arterial	4	30,500	D or Better	38,900	F
SR 79	Benton Rd - Simpson Ave	Arterial	2	23,500	F	31,000	F
SR 79	Simpson Ave - Jct Route 74	Arterial	2	8,800	D or Better	19,500	F
SR 79	California Ave - Beaumont Jct Rte 10	Arterial	4	24,900	D or Better	33,700	E
SR 86	66th Ave - Rte 111 West	Arterial	2	5,900	D or Better	30,500	F
SR 91	Orange Co Line - Green River Dr	Freeway	8+4	267,000	F	294,000	F
SR 91	Green River Dr - Jct Rte 71 No	Freeway	8+2	253,000	F	279,700	F
SR 91	Jct Rte 71 No - Serfas Club Dr	Freeway	8+2	256,000	F	285,400	F
SR 91	Serfas Club Dr - Corona, Maple St	Freeway	8+2	257,000	F	282,600	F
SR 91	Corona, Maple St - Corona, Lincoln Ave	Freeway	8+2	248,000	F	274,100	F
SR 91	Corona, Lincoln Ave - Corona, W Grand Blvd	Freeway	8+2	255,000	F	277,400	F

Roadway Segment	Limits	Baseline Data				Baseline-Plus Project	
		Facility Type	No. of Lanes	Daily Volumes	Level of Service	Daily Volumes	Level of Service
SR 91	Corona, W Grand Blvd - Corona, Main St	Freeway	8+2	247,000	F	269,500	F
SR 91	Corona, Main St - Jct Rte 15	Freeway	10+2	233,000	E	256,500	E
SR 91	Jct Rte 15 - McKinley St	Freeway	8+2	219,000	F	244,100	F
SR 91	McKinley St - Pierce St	Freeway	6+2	209,000	F	232,000	F
SR 91	Pierce St - Magnolia Ave	Freeway	6+2	182,000	F	205,300	F
SR 91	Magnolia Ave - La Sierra Ave	Freeway	6+2	193,000	F	214,300	F
SR 91	La Sierra Ave - Tyler St	Freeway	6+2	186,000	F	204,900	F
SR 91	Tyler St - Van Buren Blvd	Freeway	6+2	186,000	F	203,900	F
SR 91	Van Buren Blvd - Adams St	Freeway	6+2	173,000	F	187,800	F
SR 91	Adams St - Madison St	Freeway	6+2	172,000	F	187,000	F
SR 91	Madison St - Arlington Ave	Freeway	6	168,000	F	181,500	F
SR 91	Arlington Ave - Central Ave/State St	Freeway	6	165,000	F	176,200	F
SR 91	Central Ave/State St - Fourteenth St	Freeway	6	165,000	F	173,600	F
SR 91	Fourteenth St - Eighth St	Freeway	6	161,000	F	168,500	F
SR 91	Eighth St – La Cadena Dr/Poplar St & Spruce St	Freeway	6	153,000	F	159,800	F
SR 91	La Cadena Dr/Poplar St & Spruce St - Jct Rte 60, Jct Rte 215 No	Freeway	6	149,000	F	155,800	F
SR-111	Monroe St - Washington St	Arterial	4	27,500	D or Better	38,800	F
SR-111	Racquet Club Dr- Miles/Manitou Ave	Arterial	4	35,000	E	40,500	F
SR-111	Miles/Manitou Ave - Cook St	Arterial	4	34,000	E	37,700	F
SR-111	Cook St - Indian Wells City Limits	Arterial	4	34,000	E	39,200	F
SR-111	Indian Wells City Limits - Portola Ave	Arterial	4	31,500	D or Better	37,000	E
SR-111	Portola Ave - Jct Rte 74 S	Arterial	4	34,000	E	37,100	F
SR-111	Jct Rte 74 S - Bob Hope Dr	Arterial	4	31,500	D or Better	38,400	F
SR-111	Bob Hope Dr - Country Club Dr (40th Ave)	Arterial	4	31,500	D or Better	38,500	F
SR-111	Country Club Dr (40th Ave) - Frank Sinatra Dr	Arterial	4	28,500	D or Better	35,100	E
SR-111	Frank Sinatra Dr - Date Palm Ave/ Broadway	Arterial	4	31,500	D or Better	40,100	F
SR-111	Date Palm Ave/Broadway -Golf Club Dr	Arterial	4	31,500	D or Better	38,600	F
SR-111	Golf Club Dr - Gene Autry Trail	Arterial	4	32,000	D or Better	38,600	F
I-215	Murrieta Hot Springs Rd-Los Alamos Rd	Freeway	4	91,000	D or Better	95,700	E
I-215	Los Alamos Rd - Antelope Rd	Freeway	4	88,000	D or Better	94,100	E
I-215	Antelope Rd - Keller Rd	Freeway	4	89,000	D or Better	97,900	E
I-215	Keller Rd - Scott Rd	Freeway	4	89,000	D or Better	97,900	E
I-215	Scott Rd - Garbani Rd	Freeway	4	83,000	D or Better	96,000	E
I-215	Garbani Rd - Newport Rd	Freeway	4	83,000	D or Better	96,000	E
I-215	Newport Road - McCall Blvd	Freeway	4	80,000	D or Better	99,400	E
I-215	McCall Blvd - Ethanac Rd	Freeway	4	74,000	D or Better	92,700	E
I-215	Ethanac Rd - South Jct Rte 74	Freeway	4	72,000	D or Better	91,100	E
I-215	S Jct Rte 74 - Evans Rd	Freeway	4	88,000	D or Better	113,100	F
I-215	Evans Rd - N Jct Rte 74	Freeway	4	88,000	D or Better	113,100	F
I-215	North Jct Rte 74 - D Street	Freeway	4	82,000	D or Better	109,300	F
I-215	D Street - Nuevo Rd	Freeway	6	99,000	D or Better	131,600	E
I-215	Nuevo Rd - Mid County Pkwy	Freeway	6	103,000	D or Better	133,100	F
I-215	Mid County Pkwy - Ramona Expressway	Freeway	6	103,000	D or Better	133,100	F
I-215	Ramona Expressway - Oleander Ave	Freeway	6	117,000	D or Better	154,000	F
I-215	Oleander Ave - Van Buren Blvd	Freeway	6	124,000	E	163,600	F
I-215	Van Buren Blvd - Cactus Ave	Freeway	6	120,000	D or Better	157,200	F
I-215	Cactus Ave - Alessandro Blvd	Freeway	6	126,000	E	161,900	F
I-215	Alessandro Blvd - Eucalyptus/Eastridge Ave	Freeway	6	124,000	E	155,900	F

Roadway Segment	Limits	Baseline Data				Baseline-Plus Project	
		Facility Type	No. of Lanes	Daily Volumes	Level of Service	Daily Volumes	Level of Service
I-215	Eucalyptus/Eastridge Ave - Jct Rte 60 E	Freeway	6	119,000	D or Better	145,900	F
I-215	Jct Rte 60 E - Fair Isle Dr	Freeway	6	168,000	F	207,600	F
I-215	Fair Isle Dr - Central Ave	Freeway	6	173,000	F	212,500	F
I-215	Central Ave - El Cerrito Dr	Freeway	6	166,000	F	203,700	F
I-215	El Cerrito Dr - Martin Luther King Blvd	Freeway	6	166,000	F	200,100	F
I-215	Martin Luther King Blvd-University Ave	Freeway	6	163,000	F	195,500	F
I-215	University Ave - 3rd/Blaine St	Freeway	6	157,000	F	186,900	F
I-215	3rd/Blaine St - Spruce St	Freeway	8	157,000	D or Better	187,800	F
I-215	Spruce St - Jct Rte 60 & 91 West	Freeway	8	157,000	D or Better	187,800	F
I-215	Columbia Ave - Center St	Freeway	6	139,000	F	140,800	F
I-215	Center St - San Bernardino Co Line	Freeway	6	136,000	F	135,700	F
SR-371	Wilson Valley Rd - Cary Rd	Arterial	2	7,300	D or Better	17,000	E
SR-371	Contreras Rd - Jct Rte 74	Arterial	2	6,900	D or Better	17,900	E
Cajalco Rd	Alexander St - Brown St	Secondary	2	17,400	D or Better	22,700	F
Ethanac Rd	Barnett Rd - Sherman Rd	Secondary	2	5,500	D or Better	15,800	F
Mid County Pkwy	Future Ramona Expway Interchange - Reservoir Ave	Major	2	20,700	D or Better	34,300	F
Mid County Pkwy	Reservoir Ave - Warren Rd, Future SR-79	Major	2	20,700	D or Better	34,100	F
Ramona Expy	I-215 NB Ramps at Ramona Expway/ Cajalco Expway - N Webster Ave	Major	4	19,900	D or Better	35,200	F
Van Buren Blvd	Jurupa Ave - Limonite Ave	Arterial	4	55,800	D or Better	59,200	F

Footnote: Shaded cells indicate impact
Source: Riverside County staff.

Table 4.18-N Baseline and Baseline-Plus Project Roadway Comparison for Segments One Mile or Longer (Arterial Road Network)

Area Plan (or City)	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service
Cities of Riverside and Norco	Alessandro Blvd	Trautwein Rd to Arlington Ave - Chicago Ave	2.21	4	44,200	F	4	Existing	7,500	51,700	F
Cities of Riverside and Norco	Alessandro Blvd	Trautwein Rd to Brown St	3.63	4	38,400	F	4	Existing	(11,200)	27,200	E
Cities of Riverside and Norco	Arlington Ave	Riverside Ave - SR-91 WB Onramp at Arlington Ave to Alessandro Blvd	2.07	4	38,700	F	4	Existing	4,400	43,100	F
Cities of Riverside and Norco	Chicago Ave	Alessandro Blvd to Central Ave	1.04	4	36,200	F	4	Existing	4,400	40,600	F
Cities of Riverside and Norco	Main St	Strong St to W Center St	1.28	4	36,300	F	4	Existing	2,100	38,400	F
Cities of Riverside and Norco	Trautwein Rd	Orange Terrace Pkwy to 0.2 Mi. N of Mission Grove Pkwy S	1.34	4	26,200	D or better	4	Existing	4,700	30,900	F
Cities of Riverside and Norco	Van Buren Blvd	0.48 Mi. SE of A St to 0.11 Mi. N of SR-91 WB Ramps at Van Buren Blvd	2.69	4	40,300	F	4	Existing	8,000	48,300	F

Area Plan (or City)	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service
Cities of Riverside and Norco	Van Buren Blvd	Cypress Ave - Jackson St to Jurupa Ave	1.28	4	50,500	F	4	Existing	1,600	52,100	F
Cities of Riverside and Norco	Van Buren Blvd	Wood Rd to Barton St	1.02	4	27,600	E	4	Existing	7,000	34,600	F
Cities of Riverside and Norco	Victoria Ave	0.67 Mi. S of Cridge St to 14th St	1.04	2	11,200	D or better	2	Existing	500	11,700	E
Cities of Riverside and Norco	Watkins Dr	0.28 Mi. N of I-215 NB Onramp at Central Ave/ Watkins Dr to W Linden St	1.17	2	11,300	D or better	2	Existing	1,000	12,300	E
Jurupa	Armstrong Rd	Valley Way to 1.53 Mi. N of Sierra Ave	1.53	2	12,200	E	2	Existing	0	12,200	E
Jurupa	Limonite Ave	Wineville Ave to 0.1 Mi. E of Beach St	2.71	2	18,400	F	2	Existing	900	19,300	F
Jurupa	Van Buren Blvd	Mission Blvd to Van Buren Blvd SB Onramp at Limonite Ave	4.37	4	40,000	D or better	4	Existing	32,500	72,500	F
Temescal Canyon	E Ontario Ave	Kellogg Ave to I-15 SB Ramps at Ontario Ave	1.35	4	24,200	D or better	4	Existing	6,000	30,200	F
Temescal Canyon	W 6th St	Smith Ave to Merrill St	1.33	4	33,800	F	4	Existing	1,900	35,700	F
Temescal Canyon	W Ontario Ave	Kirkwood Dr to S Lincoln Ave	1.78	2	16,800	D or better	2	Existing	(400)	16,400	F
Elsinore	Bundy Canyon Rd	1.32 Mi. E of I-15 NB Off-ramp at Bundy Canyon Rd to Orange St	1.53	2	8,600	D or better	2	Existing	3,400	12,000	E
Elsinore	Clinton Keith Rd	Salida Del Sol - Yamas Dr to 0.24 Mi. W of La Estrella St - Nutmeg St	1.39	2	13,600	F	2	Existing	2,500	16,100	F
Elsinore	Lake St	Nicholas Rd to Grand Ave	1.37	2	14,500	D or better	2	Existing	1,700	16,200	F
Elsinore	Lake St	Nicholas Rd to Temescal Canyon Rd	1.16	2	15,600	F	2	Existing	2,200	17,800	F
Elsinore	Railroad Canyon Rd	I-15 NB Ramps at Diamond Dr/Railroad Cyn Rd to 0.19 Mi. E of Canyon Lake Dr N	3.70	4	25,200	D or better	4	Existing	8,400	33,600	F
Elsinore	Summerhill Dr	Railroad Cyn Rd to La Strada	2.13	2	13,300	F	2	Existing	(300)	13,000	F
Lake Mathews / Woodcrest	Cajalco Rd	El Sobrante Rd to 0.25 Mi. W of Alexander St	3.34	2	11,500	D or better	2	Existing	6,200	17,700	F
Lake Mathews / Woodcrest	Mockingbird Canyon Rd	Markham St to Van Buren Blvd	2.46	4	16,000	D or better	4	Secondary	9,300	25,300	E
Mead Valley	Case Rd	Goetz Rd to Mapes Rd	1.96	2	9,200	D or better	2	Existing	5,900	15,100	F
Mead Valley	E San Jacinto Ave	Mc Canna St - Redlands Ave to Dunlap Dr	1.38	2	6,000	D or better	2	Existing	12,300	18,300	F
Mead Valley	Goetz Rd	McLaughlin Rd to Ellis Ave	2.51	2	12,400	E	2	Existing	2,300	14,700	F

Area Plan (or City)	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service
Mead Valley	Markham St	Seaton Ave to Day St	1.01	2	9,000	D or better	2	Mountain Arterial	7,300	16,300	F
Mead Valley	N Perris Blvd	E San Jacinto Ave to Placentia St	2.47	2	16,100	F	2	Existing	4,600	20,700	F
Mead Valley	N Perris Blvd	Placentia St to Oleander Ave	2.48	2	18,400	F	2	Existing	3,400	21,800	F
Mead Valley	N Webster Ave	Ramona Expy to Oleander Ave	1.00	2	11,300	D or better	2	Existing	3,600	14,900	F
Mead Valley	Ramona Expy	Evans Rd to N Webster Ave	2.02	4	21,800	D or better	4	Existing	11,200	33,000	F
Sun City / Menifee Valley	Bundy Canyon Rd	Cottonwood Canyon Rd to Murrieta Rd	1.01	2	8,800	D or better	2	Existing	4,800	13,600	F
Sun City / Menifee Valley	Newport Rd	Murrieta Rd to Domenigoni Pkwy	3.24	4	22,500	D or better	4	Existing	15,200	37,700	F
Southwest Area	Clinton Keith Rd	0.05 Mi. E of I-215 NB Ramps at Clinton Keith Rd to 0.49 Mi. E of Meadowlark Ln - Whitewood Rd	1.11	2	12,400	E	2	Existing	8,300	20,700	F
Southwest Area	Clinton Keith Rd	La Estrella St - Nutmeg St to I-215 SB Ramps at Clinton Keith Rd	1.67	4	22,100	D or better	4	Existing	5,400	27,500	E
Southwest Area	Murrieta Hot Springs Rd	I-215 NB Onramp at Murrieta Hot Springs Rd to Margarita Rd	1.40	4	24,100	D or better	4	Existing	10,000	34,100	F
Southwest Area	Ynez Rd	0.15 Mi. S of Ynez Rd to Jedediah Smith Rd	1.05	2	14,300	D or better	2	Existing	1,700	16,000	F
Reche Cyn / Badlands	Perris Blvd	Oleander Ave to Cactus Ave	3.49	2	17,700	F	2	Existing	3,100	20,800	F
Reche Cyn / Badlands	Pigeon Pass Rd	Hidden Springs Dr to 0.39 Mi. N of Ironwood Ave	1.11	2	14,900	D or better	2	Existing	500	15,400	F
Reche Cyn / Badlands	Redlands Blvd	Locust Ave to Cactus Ave	3.25	2	11,400	D or better	2	Existing	2,400	13,800	F
Reche Cyn / Badlands	Redlands Blvd	Locust Ave to San Timoteo Canyon Rd	2.54	2	18,600	F	2	Mountain Arterial	2,900	21,500	F
Lakeview / Nuevo	Contour Ave	1.03 Mi. E of Hansen Ave to Hansen Ave	1.03	2	2,800	D or better	2	Collector	9,700	12,500	E
Lakeview / Nuevo	Juniper Flats Rd	Juniper Springs Rd to Warren St	2.97	2	2,900	D or better	2	Collector	12,300	15,200	F
Lakeview / Nuevo	Lakeview Ave	9th St to Nuevo Rd	2.49	2	5,100	D or better	2	Collector	11,600	16,700	F
Harvest Vlly / Winchester	Domenigoni Pkwy	Winchester Rd to 0.74 Mi. E of Leon Rd	1.31	6	19,300	D or better	6	Urban Arterial	32,900	52,200	E
The Pass	San Timoteo Canyon Rd	0.23 Mi. NW of Live Oak Canyon Rd to Redlands Blvd	1.22	2	17,900	F	2	Mountain Arterial	3,600	21,500	F
San Jacinto Valley	Bridge St	Gilman Springs Rd to Marvin Rd	2.38	2	3,800	D or better	2	Collector	9,300	13,100	F
San Jacinto Valley	Domenigoni Pkwy	S Sanderson Ave to 0.66 Mi. E of Warren Rd	1.11	4	19,800	D or better	4	Existing	16,200	36,000	F

Area Plan (or City)	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service
San Jacinto Valley	Lyon Ave	Domenigoni Pkwy to S Lyon Ave	1.43	2	8,200	D or better	2	Existing	8,300	16,500	F
San Jacinto Valley	N Sanderson Ave	N Ramona Blvd to 1.33 Mi. S of N Ramona Blvd	1.73	2	17,500	D or better	2	Existing	4,800	22,300	F
San Jacinto Valley	N Warren Rd	Deegan St to Ramona Blvd	1.33	2	6,000	D or better	2	Existing	5,700	11,700	E
San Jacinto Valley	Ramona Expy	0.24 Mi. E of Soboba St to 0.36 Mi. N of E Esplanade Ave	1.40	2	10,500	D or better	2	Existing	4,900	15,400	F
San Jacinto Valley	Ramona Expy	E Main St to 0.48 Mi. E of N San Jacinto Ave	1.44	2	9,700	D or better	2	Existing	3,500	13,200	F
San Jacinto Valley	Ramona Expy	N Sanderson Ave to 0.52 Mi. E of N Warren Rd	1.21	2	11,400	D or better	2	Existing	9,100	20,500	F
San Jacinto Valley	S Lyon Ave	Florida Ave to Lyon Ave	1.24	2	11,100	D or better	2	Existing	2,500	13,600	F
San Jacinto Valley	S Sanderson Ave	Stetson Ave to Domenigoni Pkwy	1.09	2	14,600	D or better	2	Existing	7,100	21,700	F
San Jacinto Valley	S State St	0.25 Mi. N of Chambers St to E Newport Rd	2.76	2	11,100	D or better	2	Existing	9,300	20,400	F
San Jacinto Valley	SR-79/Ramona Expy	0.35 Mi. SE of Byrd St to N State St	1.60	2	15,200	F	2	Existing	5,300	20,500	F
San Jacinto Valley	Warren Rd	California Ave to 0.36 Mi. S of W Harrison Ave	1.16	2	10,600	D or better	2	Existing	7,500	18,100	F
San Jacinto Valley	Warren Rd	Devonshire Ave to Whittier Ave	1.06	2	12,200	D or better	2	Existing	5,300	17,500	F
W. Coachella Valley	48th Ave	Monroe St to Madison St	1.01	2	12,600	D or better	2	Existing	2,200	14,800	F
W. Coachella Valley	50th Ave	Madison St to Jefferson St	1.00	2	11,200	D or better	2	Existing	3,800	15,000	F
W. Coachella Valley	52nd Ave	Madison St to Monroe St	1.01	2	17,000	F	2	Existing	2,600	19,600	F
W. Coachella Valley	54th Ave	Monroe St to Madison St	1.00	2	7,500	D or better	2	Existing	8,300	15,800	F
W. Coachella Valley	Cook St	Hovley Ln E to Fred Waring Dr	1.26	4	26,600	D or better	4	Existing	2,000	28,600	E
W. Coachella Valley	Country Club Dr	Washington St to Oasis Club Dr	1.08	4	28,000	D or better	4	Existing	8,000	36,000	F
W. Coachella Valley	Date Palm Dr	30th Ave to Ramon Rd	1.00	4	22,800	D or better	4	Existing	4,300	27,100	E
W. Coachella Valley	E Palm Canyon Dr	La Verne Way - S Sunrise Way to Golf Club Dr	2.56	4	27,400	E	4	Existing	4,000	31,400	F
W. Coachella Valley	Fred Waring Dr	Washington St to El Dorado Dr	1.93	4	29,700	D or better	4	Existing	5,900	35,600	F
W. Coachella Valley	Gerald Ford Dr	Cook St to Portola Ave	1.11	2	8,900	D or better	2	Existing	4,300	13,200	F
W. Coachella Valley	Jackson St	50th Ave to 48th Ave	1.02	2	6,800	D or better	2	Existing	6,500	13,300	F
W. Coachella Valley	Monroe St	0.5 Mi. N of 62nd Ave to 0.5 Mi. N of 60th Ave	1.02	2	12,600	E	2	Existing	8,300	20,900	F

Area Plan (or City)	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service
W. Coachella Valley	Monroe St	49th Ave to 52nd Ave	1.50	4	14,700	D or better	4	Existing	15,000	29,700	E
W. Coachella Valley	Monroe St	Airport Blvd to 54th Ave	1.01	4	18,700	D or better	4	Arterial	18,100	36,800	E
W. Coachella Valley	N Gene Autry Trail	I-10 EB Offramp at Gene Autry Trl/Palm Dr to E Vista Chino	2.34	2	20,200	D or better	2	Existing	2,600	22,800	F
W. Coachella Valley	N Indian Canyon Dr	N Sunrise Way to 18th Ave	3.25	2	18,200	F	2	Existing	4,000	22,200	F
W. Coachella Valley	Pierson Blvd	West Dr to Little Morongo Rd	1.01	2	8,100	D or better	2	Existing	5,300	13,400	F
W. Coachella Valley	SR-111	Deep Canyon Rd to El Dorado Dr	1.50	4	39,300	F	4	Existing	4,300	43,600	F
W. Coachella Valley	SR-111	El Dorado Dr to Washington St	2.60	4	42,900	F	4	Existing	5,900	48,800	F
W. Coachella Valley	SR-111	Madison St to Adams St	1.99	4	30,600	D or better	4	Existing	5,500	36,100	F
W. Coachella Valley	SR-111/E Palm Cyn Dr	Date Palm Dr to Perez Rd	1.10	4	28,700	D or better	4	Existing	5,900	34,600	F
W. Coachella Valley	SR-111/ N Palm Cyn Dr	Vista Chino to Tram Way Rd - W San Rafael Dr	1.13	4	24,600	D or better	4	Existing	8,700	33,300	F
W. Coachella Valley	Varner Rd	1.18 Mi. NW Da Vall Dr to Landau Blvd- Mtn View Rd	2.16	2	10,500	D or better	2	Existing	6,500	17,000	F
W. Coachella Valley	Varner Rd	Date Palm Dr to Date Palm Dr	1.19	2	6,700	D or better	2	Existing	12,300	19,000	F
W. Coachella Valley	Washington St	SR-111 to 0.45 Mi. N of Fred Waring Dr	1.59	4	34,300	F	4	Existing	6,000	40,300	F
E. Coachella Valley	50th Ave	Harrison St to 0.24 Mi. W of Calhoun St	1.74	2	13,000	D or better	2	Existing	3,900	16,900	F
E. Coachella Valley	52nd Ave	0.36 Mi. W of Fillmore St to 0.84 Mi. E of SR-111	1.13	2	4,900	D or better	2	Existing	10,300	15,200	F
E. Coachella Valley	Grapefruit Blvd	Harrison St to Dillon Rd	1.01	4	18,400	D or better	4	Existing	17,500	35,900	F
E. Coachella Valley	Harrison St	50th Ave to 54th Ave	1.99	4	15,300	D or better	4	Existing	21,500	36,800	F
E. Coachella Valley	Johnson St	60th Ave to 62nd Ave	1.00	2	12,600	E	2	Collector	0	12,600	E
E. Coachella Valley	Van Buren St	50th Ave to 0.5 Mi. N of 54th Ave	1.49	2	4,300	D or better	2	Existing	10,700	15,000	F
E. County - Desert Area	Chuckwalla Valley Rd	I-10 EB Ramps at Chuckwalla Valley Rd to I-10 EB Ramps at Ford Dry Lake Rd/Chuckwalla Valley Rd	16.24	2	1,300	D or better	2	Collector	15,100	16,400	F

Footnote: Shaded cells indicate impact.
Source: Riverside County staff.

The results of the forgoing analysis indicate that, with build out of the GPA No. 960 land use in Riverside County and build out of Riverside County's Circulation Element, some facilities would improve to an acceptable level that currently operate unacceptably. However, as shown in Table 4.18-M and Table 4.18-N, the shaded cells are locations where GPA No. 960 would increase traffic to facilities already operating at an

unacceptable level or GPA No. 960 would add traffic to facilities currently operating at an acceptable level such that they would operate unacceptably. Based on the significance criteria described above, the addition of GPA No. 960 traffic to the existing baseline would result in significant impacts at those locations.

c. Results for GPA No. 960 Conditions

The proposed Circulation Element, illustrated in Figures 4.18.22.1 to 4.18.22.21 in Appendix EIR-4.E, is assumed for the analysis of GPA No. 960. This scenario assumes land use designations of the proposed General Plan Amendment. The differences between the existing Circulation Element and the Proposed Circulation Element are also presented in Figures 4.18.23.1 to 4.18.23.21 in Appendix EIR-4.E. The changes in the incorporated areas are for informational purposes only and reflect the best information available from the cities as of late 2009.

The results of the evaluation of GPA No. 960 are presented in a series of figures similar to those for the previously evaluated scenarios.

Error! Reference source not found.-O (Baseline to GPA No. 960 Freeway and Expressway Comparison) summarizes the Freeway and State Route Facilities that are projected to operate at an unacceptable LOS E or LOS F, while Table 4.18-P (Baseline to GPA No. 960 Comparison of Segments One Mile or Greater (Arterial Road Network)) summarizes the results of roadway operations on Riverside County facilities. All facilities operating at an unacceptable level, where the LOS is the same or worse than the Baseline Conditions, and where GPA No. 960 is expected to add traffic is identified as a significant impact.

Table 4.18-O Baseline to GPA No. 960 Freeway and Expressway Comparison

Roadway Segment	Limits	Baseline			GPA960 (Build Out)		
		No. of Lanes	Daily Volume	Level of Service	Facility Type	Daily Volume	Level of Service
I-10	San Bernardino County Line-County Line Rd	6	103,000	D or Better	Freeway	258,100	F
I-10	County Line Rd -Calimesa Blvd	6	95,000	D or Better	Freeway	254,700	F
I-10	Calimesa Blvd-Singleton Rd	6	98,000	D or Better	Freeway	259,100	F
I-10	Singleton Rd-Cherry Valley Blvd	6	98,000	D or Better	Freeway	268,300	F
I-10	Cherry Valley Blvd-San Timoteo Canyon Rd	6	90,000	D or Better	Freeway	252,000	F
I-10	San Timoteo Canyon Rd-Jct Rte 60	6	89,000	D or Better	Freeway	228,900	F
I-10	Jct Rte 60 - Jct Rte 79 South	8	126,000	D or Better	Freeway	308,300	F
I-10	Jct Rte 79 South- Pennsylvania Ave	8	128,000	D or Better	Freeway	296,900	F
I-10	Pennsylvania Ave - Highland Springs Ave	8	134,000	D or Better	Freeway	305,200	F
I-10	Highland Springs Ave- Banning, Sunset Ave	8	129,000	D or Better	Freeway	307,900	F
I-10	Sunset Ave-22nd St	8	126,000	D or Better	Freeway	294,000	F
I-10	22nd St - Jct Rte 243 (S Eighth St.)	8	123,000	D or Better	Freeway	289,300	F
I-10	Jct Rte 243(S Eighth St)-Banning, Hargrave St	8	120,000	D or Better	Freeway	292,800	F
I-10	Hargrave St- East Ramsey St	8	110,000	D or Better	Freeway	291,000	F
I-10	East Ramsey St - Reservation Rd/Fields Rd	8	113,000	D or Better	Freeway	310,600	F
I-10	Reservation Rd/Fields Rd - Apache Trail Rd	8	106,000	D or Better	Freeway	297,400	F
I-10	Apache Trail Rd - Morongo Pkwy	8	94,000	D or Better	Freeway	281,700	F
I-10	Morongo Pkwy - E Cabazon Interchange, Main St	8	94,000	D or Better	Freeway	281,300	F
I-10	E Cabazon Interchange, Main St-Verbenia Ave	8	94,000	D or Better	Freeway	282,500	F
I-10	Verbenia Ave-Elm St	8	94,000	D or Better	Freeway	285,800	F
I-10	Elm St-Jct Route 111	8	94,000	D or Better	Freeway	296,400	F
I-10	Haugen-Lehmann Way-Jct Route 111	8	94,000	D or Better	Freeway	304,000	F
I-10	Jct Rte 111-Whitewater Interchange	8	81,000	D or Better	Freeway	248,800	F
I-10	Whitewater Interchange - Jct Rte 62 N	8	81,000	D or Better	Freeway	251,000	F

Roadway Segment	Limits	Baseline			GPA960 (Build Out)		
		No. of Lanes	Daily Volume	Level of Service	Facility Type	Daily Volume	Level of Service
I-10	Jct Rte 62 north - Indian Ave	8	79,000	D or Better	Freeway	244,000	F
I-10	Indian Ave- Palm Dr/Gene Autry Trail	8	81,000	D or Better	Freeway	253,000	F
I-10	Palm Dr/Gene Autry Trail-Landau Blvd	8	88,000	D or Better	Freeway	268,600	F
I-10	Landau Blvd-Date Palm Dr	8	88,000	D or Better	Freeway	252,400	F
I-10	Date Palm Dr - Da Vall Dr	8	94,000	D or Better	Freeway	261,000	F
I-10	Da Vall Dr - Bob Hope Dr	8	94,000	D or Better	Freeway	258,700	F
I-10	Bob Hope Dr - Ramon Rd	8	94,000	D or Better	Freeway	261,600	F
I-10	Ramon Rd - Monterey Ave	6	96,000	D or Better	Freeway	257,300	F
I-10	Monterey Ave-Portola Ave	6	97,000	D or Better	Freeway	262,300	F
I-10	Portola Ave-Cook Street	6	97,000	D or Better	Freeway	260,600	F
I-10	Cook Street-Washington Street	6	94,000	D or Better	Freeway	264,200	F
I-10	Washington Street - Jefferson St/Indio Blvd	6	83,000	D or Better	Freeway	245,900	F
I-10	Jefferson St/Indio Blvd-Monroe St	6	68,000	D or Better	Freeway	224,600	F
I-10	Jefferson St/Indio Blvd-Monroe St	6	68,000	D or Better	Freeway	204,800	F
I-10	Monroe St - Jackson St	6	62,000	D or Better	Freeway	204,900	F
I-10	Jackson St - N Jct Rte 111/Auto Center Dr	6	57,000	D or Better	Freeway	201,200	F
I-10	Chiriaco Summit Interchange - Hayfield Rd	4	23,000	D or Better	Freeway	94,000	E
I-10	Hayfield Rd - Union Rd/Red Cloud Rd	4	23,000	D or Better	Freeway	94,000	E
I-10	Union Rd/Red Cloud Rd - Eagle Mountain Rd	4	23,000	D or Better	Freeway	96,300	E
I-15	San Diego County Line-Eastern Bypass	8	130,000	D or Better	Freeway	260,800	F
I-15	Eastern Bypass-S Jct Rte 79	8	130,000	D or Better	Freeway	250,600	E
I-15	S Jct Rte 79 - Rancho California Rd	8	150,000	D or Better	Freeway	285,600	E
I-15	Rancho California Rd - N Jct Rte 79	8	161,000	D or Better	Freeway	304,600	F
I-15	Murrieta Hot Springs Rd -Los Alamos Rd	6	127,000	E	Freeway	229,000	F
I-15	Los Alamos Rd -California Oaks Rd	6	127,000	E	Freeway	234,000	F
I-15	California Oaks Rd-Clinton Keith Rd	6	124,000	E	Freeway	237,500	F
I-15	Clinton Keith Rd-Baxter Rd	6	123,000	D or Better	Freeway	258,400	F
I-15	Baxter Rd-Bundy Canyon Rd	6	118,000	D or Better	Freeway	258,200	F
I-15	Bundy Canyon Rd-Olive St	6	113,000	D or Better	Freeway	256,600	F
I-15	Olive St-Railroad Canyon Rd	6	113,000	D or Better	Freeway	246,000	F
I-15	Railroad Cyn Rd-Bancroft Way, Franklin St	6	122,000	D or Better	Freeway	259,600	F
I-15	Bancroft Way, Franklin St-Main Street	6	122,000	D or Better	Freeway	251,200	F
I-15	Main Street-Jct Rte 74	6	119,000	D or Better	Freeway	258,400	F
I-15	Jct Rte 74-Nichols Rd	6	107,000	D or Better	Freeway	261,900	F
I-15	Nichols Rd-Lake Street	6	109,000	D or Better	Freeway	290,200	F
I-15	Lake Street-Horsethief Canyon Rd	6	115,000	D or Better	Freeway	302,800	F
I-15	Horsethief Canyon Rd-Indian Truck Trail	6	115,000	D or Better	Freeway	299,000	F
I-15	Indian Truck Trail-Temescal Canyon Rd	6	121,000	D or Better	Freeway	298,000	F
I-15	Temescal Canyon Rd-Weirick Rd	6	131,000	E	Freeway	314,100	F
I-15	Weirick Rd-Cajalco Rd	6	146,000	F	Freeway	348,100	F
I-15	Cajalco Rd-El Cerrito Rd	6	155,000	F	Freeway	380,900	F
I-15	El Cerrito Rd-Ontario Ave	6	160,000	F	Freeway	374,600	F
I-15	Ontario Ave-Magnolia Ave	6	160,000	F	Freeway	372,900	F
I-15	Magnolia Ave-Jct Rte 91	8	174,000	E	Freeway	391,900	F
I-15	Hidden Valley Rd-2nd Street	8	156,000	D or Better	Freeway	273,500	F
I-15	2nd St -4th St	6	150,000	F	Freeway	275,300	F
I-15	4th St -6th St	6	150,000	F	Freeway	283,300	F
I-15	6th St - Schleisman Rd	6	150,000	F	Freeway	287,300	F
I-15	Schleisman Rd - Limonite Ave	6	150,000	F	Freeway	264,000	F

Roadway Segment	Limits	Baseline			GPA960 (Build Out)		
		No. of Lanes	Daily Volume	Level of Service	Facility Type	Daily Volume	Level of Service
I-15	Limonite Ave – Cantu-Galleano Ranch Rd	6	145,000	F	Freeway	256,900	F
I-15	Jct Rte 60-San Bernardino County Line	8	214,000	F	Freeway	361,000	F
SR 60	Milliken Ave - Jct Rte 15	6	155,000	F	Freeway	207,000	F
SR 60	Jct Rte 15 - Van Buren Blvd	6	124,000	E	Freeway	251,500	E
SR 60	Van Buren Blvd - Etiwanda Ave	6	137,000	F	Freeway	259,500	F
SR 60	Etiwanda Ave - Mission Blvd	6	123,000	D or Better	Freeway	254,500	E
SR 60	Mission Blvd - Pedley Rd	6	123,000	D or Better	Freeway	252,000	E
SR 60	Pedley Rd - Pyrite Street	6	121,000	D or Better	Freeway	249,600	E
SR 60	Pyrite Street - Valley Way	6	126,000	E	Freeway	250,200	E
SR 60	Valley Way-Pacific Ave	6+2	126,000	D or Better	Freeway	248,200	F
SR 60	Pacific Ave-Rubidoux Blvd	6+2	126,000	D or Better	Freeway	260,800	F
SR 60	Rubidoux Blvd-Crestmore Ave	6+2	131,000	D or Better	Freeway	260,100	F
SR 60	Crestmore Ave-Market St	6+2	121,000	D or Better	Freeway	252,600	F
SR 60	Market St-Main St	6+2	136,000	D or Better	Freeway	278,600	F
SR 60	Main St-Orange St	6+2	136,000	D or Better	Freeway	268,000	F
SR 60	Orange St- Jct Rtes 91/215	6+2	132,000	D or Better	Freeway	283,200	F
SR 60	Jct Rtes 91/215 -East Jct Rte 215	6+2	128,000	D or Better	Freeway	223,900	F
SR 60	East Jct Rte 215-Day street	6	126,000	E	Freeway	191,700	F
SR 60	Day St -Pigeon Pass Rd	4	107,000	F	Freeway	168,900	F
SR 60	Pigeon Pass Rd -Heacock St	4	97,000	E	Freeway	163,900	F
SR 60	Perris Blvd-Nason Street	4	78,000	D or Better	Freeway	159,400	F
SR 60	Nason Street-Moreno Beach Blvd	4	72,000	D or Better	Freeway	154,800	E
SR 60	Moreno Beach Blvd-Redlands Blvd	4	60,000	D or Better	Freeway	144,200	F
SR 60	Redlands Blvd - Theodore Street	4	52,000	D or Better	Freeway	131,300	F
SR 60	Theodore street - Gilman Springs Rd	4	52,000	D or Better	Freeway	142,300	F
SR 60	Gilman Springs Rd-Jackrabbit Trail	4	44,000	D or Better	Freeway	137,200	F
SR 60	Jackrabbit Trail - Potrero Blvd	4	44,000	D or Better	Freeway	116,000	F
SR 60	Jackrabbit Trail - Jct Rte 10	4	44,000	D or Better	Freeway	105,800	F
SR 62	Indian Ave-San Bernardino County Line	2	22,000	F	Expressway	101,800	F
SR 71	Riverside Co Line - Jct Rte 91	4	55,000	D or Better	Freeway	158,900	F
SR 74	Orange County Line-Grand Ave	2	9,800	D or Better	Mtn Art	18,300	F
SR 74	Grand Ave -Lake Shore Dr	2	18,500	F	Major	37,800	F
SR 74	Lake Shore Dr - Gunnerson St/ Strickland Ave	2	24,000	F	Urban Arterial	54,300	E
SR 74	Gunnerson St/Strickland Ave - Jct Rte 15	2	25,500	F	Urban Arterial	62,700	F
SR 74	Jct Rte 15 - Seventh St	4	31,000	D or Better	Arterial	64,400	F
SR 74	Seventh St - D St	4	26,000	D or Better	Secondary	36,200	F
SR 74	D Street-Jct Rte 215	4	21,500	D or Better	Secondary	25,200	E
SR 74	Jct Rte 215-Ethanac Rd	4	25,500	D or Better	Major	51,900	F
SR 74	Ethanac Rd-Menifee Rd	4	24,500	D or Better	Expressway	94,900	E
SR 74	Menifee road-Winchester Rd	4	30,500	D or Better	Expressway	92,300	E
SR 74	Jct Realigned Rte 79 South-Warren Rd	4	33,500	E	Urban Arterial	62,600	F
SR 74	Warren Rd- Lyon Ave	4	29,500	D or Better	Arterial	51,700	F
SR 74	Lyon Ave - State St	4	31,500	D or Better	Arterial	51,700	F
SR 74	State St - Jct 79 North	4	29,500	D or Better	Arterial	42,800	F
SR 74	Jct Rte 79 North- Yale Street	4	27,500	D or Better	Arterial	36,200	E
SR 74	Yale St-Cornell St	4	25,500	D or Better	Major	32,900	E
SR 74	Cornell St - Hemet St	4	25,500	D or Better	Major	31,700	E
SR 74	Mountain St - San Bern Nat Forest Boundary	2	16,000	E	Major	31,500	E
SR 74	Jct Rte 371 West - Homestead Rd	2	3,400	D or Better	Mtn Art	14,600	E

Roadway Segment	Limits	Baseline			GPA960 (Build Out)		
		No. of Lanes	Daily Volume	Level of Service	Facility Type	Daily Volume	Level of Service
SR 78	28th Ave/Neighbors Blvd -Broadway Street	2	2,900	D or Better	Major	34,300	F
SR 79	Murrieta Hot Springs Rd - Benton Rd	4	30,500	D or Better	Expressway	105,000	F
SR 79	Benton Rd - Simpson Ave	2	23,500	F	Expressway	110,800	F
SR 79	Main Street in San Jacinto - Sanderson Ave	4	12,500	D or Better	Urban Arterial	56,600	F
SR 79	Sanderson Ave - California Ave	4	27,800	D or Better	Expressway	155,100	F
SR 86	Imperial County Line - 81st Ave	4	14,300	D or Better	Freeway	107,100	F
SR 91	Orange Co Line - Green River Dr	8+4	267,000	F	Freeway	528,900	F
SR 91	Green River Dr - Jct Rte 71 No	8+2	253,000	F	Freeway	509,900	F
SR 91	Jct Rte 71 No - Serfas Club Dr	8+2	256,000	F	Freeway	511,800	F
SR 91	Serfas Club Dr - Corona, Maple St	8+2	257,000	F	Freeway	501,100	F
SR 91	Corona, Maple St - Corona, Lincoln Ave	8+2	248,000	F	Freeway	485,000	F
SR 91	Corona, Lincoln Ave - Corona, W Grand Blvd	8+2	255,000	F	Freeway	482,200	F
SR 91	Corona, West Grand Blvd - Corona, Main St	8+2	247,000	F	Freeway	467,400	F
SR 91	Corona, Main St - Jct Rte 15	10+2	233,000	E	Freeway	390,800	F
SR 91	Jct Rte 15 - McKinley St	8+2	219,000	F	Freeway	308,500	F
SR 91	McKinley St - Pierce St	6+2	209,000	F	Freeway	292,400	F
SR 91	Pierce St - Magnolia Ave	6+2	182,000	F	Freeway	261,400	F
SR 91	Magnolia Ave - La Sierra Ave	6+2	193,000	F	Freeway	267,200	F
SR 91	La Sierra Ave - Tyler St	6+2	186,000	F	Freeway	251,000	F
SR 91	Tyler St - Van Buren Blvd	6+2	186,000	F	Freeway	250,500	F
SR 91	Van Buren Blvd - Adams St	6+2	173,000	F	Freeway	238,600	F
SR 91	Adams St - Madison St	6+2	172,000	F	Freeway	239,100	F
SR 91	Madison St - Arlington Ave	6	168,000	F	Freeway	228,900	F
SR 91	Arlington Ave - Central Ave/State St	6	165,000	F	Freeway	228,100	F
SR 91	Central Ave/State St - Fourteenth St	6	165,000	F	Freeway	231,000	F
SR 91	Fourteenth St - Eighth St	6	161,000	F	Freeway	222,800	F
SR 91	La Cadena Dr/Poplar & Spruce Sts-Jct Rte 60, Jct Rte 215N	6	149,000	F	Freeway	221,600	F
US 95	Palo Verde Dam Rd - San Bernardino Co Line	2	2,400	D or Better	Mtn Art	16,300	F
SR-111	Indio Center Dr - Towne Ave	4	19,600	D or Better	Secondary	28,000	F
SR-111	Miles/Manitou Ave - Cook St	4	34,000	E	Urban Arterial	56,100	E
SR-111	Cook St - Indian Wells City Limits	4	34,000	E	Urban Arterial	50,700	E
SR-111	Golf Club Dr - Gene Autry Trail	4	32,000	D or Better	Major	40,300	F
I-215	Antelope Rd - Keller Rd	4	89,000	D or Better	Freeway	200,100	E
I-215	Keller Rd - Scott Rd	4	89,000	D or Better	Freeway	205,800	E
I-215	Newport Rd -McCall Blvd	4	80,000	D or Better	Freeway	188,000	F
I-215	McCall Blvd - Ethanac Rd	4	74,000	D or Better	Freeway	179,800	F
I-215	Ethanac Rd - South Jct Rte 74	4	72,000	D or Better	Freeway	182,900	F
I-215	South Jct Rte 74 - Evans Rd	4	88,000	D or Better	Freeway	201,600	F
I-215	Evans Rd - North Jct Rte 74	4	88,000	D or Better	Freeway	174,400	F
I-215	North Jct Rte 74 - D Street	4	82,000	D or Better	Freeway	172,900	F
I-215	D Street - Nuevo Rd	6	99,000	D or Better	Freeway	192,000	F
I-215	Nuevo Rd - Mid County Pkwy	6	103,000	D or Better	Freeway	207,300	F
I-215	Mid County Pkwy - Ramona Expressway	6	103,000	D or Better	Freeway	256,500	F
I-215	Ramona Expressway - Oleander Ave	6	117,000	D or Better	Freeway	271,000	F
I-215	Oleander Ave - Van Buren Blvd	6	124,000	E	Freeway	287,000	F
I-215	Van Buren Blvd - Cactus Ave	6	120,000	D or Better	Freeway	275,700	F
I-215	Cactus Ave - Alessandro Blvd	6	126,000	E	Freeway	270,700	F
I-215	Alessandro Blvd - Eucalyptus/Eastridge Ave	6	124,000	E	Freeway	262,300	F

Roadway Segment	Limits	Baseline			GPA960 (Build Out)		
		No. of Lanes	Daily Volume	Level of Service	Facility Type	Daily Volume	Level of Service
I-215	Eucalyptus/Eastridge Ave - Jct Rte 60 East	6	119,000	D or Better	Freeway	257,700	F
I-215	Jct Rte 60 East - Fair Isle Dr	6	168,000	F	Freeway	328,500	F
I-215	Fair Isle Dr - Central Ave	6	173,000	F	Freeway	379,400	F
I-215	Central Ave - El Cerrito Dr	6	166,000	F	Freeway	361,500	F
I-215	El Cerrito Dr - Martin Luther King Blvd	6	166,000	F	Freeway	375,700	F
I-215	Martin Luther King Blvd - University Ave	6	163,000	F	Freeway	327,200	F
I-215	University Ave - 3rd/Blaine St	6	157,000	F	Freeway	310,200	F
I-215	3rd/Blaine St - Spruce St	8	157,000	D or Better	Freeway	310,100	F
I-215	Spruce St - Jct Rte 60 & 91 West	8	157,000	D or Better	Freeway	310,100	F
I-215	Jct Rte 60 & 91 West - Columbia Ave	8	143,000	D or Better	Freeway	268,700	F
I-215	Columbia Ave - Center St	6	139,000	F	Freeway	270,600	F
I-215	Center St - San Bernardino Co Line	6	136,000	F	Freeway	270,300	F
SR-243	San Gorgonio Ave - Lincoln/8th Street	2	5,000	D or Better	Major	35,200	F
Cajalco Rd	Alexander St - Brown St	2	17,400	D or Better	Expressway	96,600	F
Ethanac Rd	Barnett Rd - Sherman Rd	2	5,500	D or Better	Expressway	88,800	E
Mid Co. Pkwy	Future Ramona Expy Interchange - Reservoir Ave	2	20,700	D or Better	Freeway	~~131,600~~ *20,900*	E
Mid Co. Pkwy	Reservoir Ave - Warren Rd, Future SR-79	2	20,700	D or Better	Freeway	~~144,300~~ *34,300*	F
SR-79	Domenigoni Pkwy - Stowe Rd	0	0	N/A	Freeway	141,800	F
SR-79	Stowe Rd - SR-74/Florida Ave	0	0	N/A	Freeway	142,900	F
SR-79	SR-74/Florida Ave - Cottonwood Ave	0	0	N/A	Freeway	145,400	F
Van Buren Blvd	Jurupa Ave - Limonite Ave	4	55,800	D or Better	Expressway	104,300	F

Note: Shaded cells indicate impact.
Source: Riverside County staff.

Table 4.18-P Baseline to GPA No. 960 Comparison of Segments One Mile or Greater (Arterial Road Network)

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Riverside & Norco Cities	4th St	Hamner Ave to Hillside Ave	1.27	2	1,900	D or better	2	Collector	14,400	16,300	F
Riverside & Norco Cities	Alessandro Blvd	Trautwein Rd to Arlington Ave - Chicago Ave	2.21	4	44,200	F	6	Urban Arterial	34,700	78,900	F
Riverside & Norco Cities	Alessandro Blvd	Trautwein Rd to Brown St	2.17	4	38,400	F	6	Urban Arterial	47,600	86,000	F
Riverside & Norco Cities	Arlington Ave	Riverside Ave - SR-91 WB Onramp at Arlington Ave to Alessandro Blvd	2.06	4	38,700	F	6	Urban Arterial	34,700	73,400	F
Riverside & Norco Cities	Chicago Ave	Alessandro Blvd to Central Ave	1.03	4	36,200	F	4	Arterial	22,900	59,100	F
Riverside & Norco Cities	Indiana Ave	0.26 Mi. SW of Buchanan St to Fillmore St	1.34	2	7,700	D or better	4	Secondary	20,600	28,300	F
Riverside & Norco Cities	Iowa Ave	Spruce St to Citrus St	1.25	4	23,100	D or better	6	Urban Arterial	43,500	66,600	F
Riverside & Norco Cities	Main St	Strong St to W Center St	1.28	4	36,300	F	4	Major	14,600	50,900	F

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Riverside & Norco Cities	Sycamore Canyon Blvd	Eastridge Ave to Fair Isle Dr	1.19	2	3,200	D or better	4	Arterial	38,000	41,200	E
Riverside & Norco Cities	Trautwein Rd	Orange Terrace Pkwy to 0.2 Mi. N of Mission Grove Pkwy S	1.14	4	26,200	D or better	4	Arterial	20,700	46,900	F
Riverside & Norco Cities	Van Buren Blvd	0.48 Mi. SE of A St to 0.11 Mi. N of SR-91 WB Ramps at Van Buren Blvd	2.69	4	40,300	F	6	Urban Arterial	34,700	75,000	F
Riverside & Norco Cities	Van Buren Blvd	Cypress Ave - Jackson St to Jurupa Ave	1.27	4	50,500	F	6	Urban Arterial	24,300	74,800	F
Riverside & Norco Cities	Van Buren Blvd	Wood Rd to Barton St	1.01	4	27,600	E	6	Urban Arterial	25,600	53,200	E
Riverside & Norco Cities	Victoria Ave	0.67 Mi. S of Cridge St to 14th St	1.03	2	11,200	D or better	2	Collector	4,000	15,200	F
Riverside & Norco Cities	Watkins Dr	0.28 Mi. N of I-215 NB Onramp at Central Ave/Watkins to W Linden St	1.17	2	11,300	D or better	4	Secondary	24,000	35,300	F
Riverside & Norco Cities	Watkins Dr	W Linden St to Spruce St	1.16	4	8,100	D or better	4	Secondary	22,100	30,200	F
Jurupa	Armstrong Rd	Valley Way to 1.53 Mi. N of Sierra Ave	2.04	2	12,200	E	4	Major	29,300	41,500	F
Jurupa	Bellegrave Ave	Pats Ranch Rd to Rutile St	2.92	2	10,900	D or better	4	Major	24,100	35,000	F
Jurupa	Limonite Ave	Wineville Ave to 0.1 Mi. E of Beach St	2.71	2	18,400	F	6	Urban Arterial	43,500	61,900	F
Jurupa	Mission Blvd	Pyrite St to 0.35 Mi. W of Valley Way	1.24	4	14,000	D or better	4	Arterial	21,200	35,200	E
Eastvale	Limonite Ave	Archibald Ave to Hamner Ave	1.99	2	7,600	D or better	6	Urban Arterial	53,700	61,300	F
Eastvale	Schleisman Rd	Cleveland Ave to I 15 NB Offramp	1.16	0	0	N/A	6	Urban Arterial	60,900	60,900	F
Temescal Canyon	E Foothill Pkwy	S Main St to California Ave	1.91	4	7,600	D or better	4	Secondary	24,600	32,200	F
Temescal Canyon	E Ontario Ave	Kellogg Ave to I-15 SB Ramps at Ontario Ave	1.34	4	24,200	D or better	6	Urban Arterial	36,400	60,600	F
Temescal Canyon	Green River Rd	Palisades Dr to W Foothill Pkwy	2.00	4	16,600	D or better	4	Major	22,100	38,700	F
Temescal Canyon	Promenade Ave	Collett Ave to Buchanan St	1.38	4	9,700	D or better	4	Secondary	16,000	25,700	E
Temescal Canyon	Railroad St	Auto Center Dr to N Smith Ave	1.47	4	13,100	D or better	4	Secondary	17,900	31,000	F
Temescal Canyon	River Rd	Auburndale St to Corydon St	1.00	4	16,600	D or better	4	Major	23,100	39,700	F
Temescal Canyon	S Lincoln Ave	W Ontario Ave to 10th St	1.03	4	22,900	D or better	4	Secondary	9,200	32,100	F
Temescal Canyon	Temescal Canyon Rd	0.05 Mi. N of Temescal Canyon Rd Cutoff to Dos Lagos Dr	2.26	2	2,900	D or better	4	Arterial	32,900	35,800	E
Temescal Canyon	Temescal Canyon Rd	Cajalco Rd to El Cerrito Rd	1.12	2	9,000	D or better	4	Arterial	42,000	51,000	F
Temescal Canyon	W 6th St	Smith Ave to Merrill St	1.33	4	33,800	F	4	Major	7,000	40,800	F

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Temescal Canyon	W Foothill Pkwy	Green River Rd to Mangular Ave	1.70	0	0	N/A	4	Secondary	38,700	38,700	F
Elsinore	Clinton Keith Rd	Salida Del Sol - Yamas Dr to 0.24 Mi. W of La Estrella St - Nutmeg St	1.42	2	13,600	F	6	Urban Arterial	38,500	52,100	E
Elsinore	E Lake-shore Dr	0.47 Mi. W of Ave 7 to Diamond Dr	1.03	2	7,700	D or better	4	Secondary	21,700	29,400	F
Elsinore	El Toro Rd	3.03 Mi. N of Mermack Ave to 4.89 Mi. N of Mermack Ave	1.84	2	6,900	D or better	2	Mountain Arterial	10,500	17,400	F
Elsinore	El Toro Rd	Mermack Ave to 2.27 Mi. N of Mermack Ave	2.24	2	6,900	D or better	2	Mountain Arterial	9,700	16,600	F
Elsinore	Hammack Ave	SR-74 to Telford Ave	1.09	2	1,100	D or better	2	Collector	16,600	17,700	F
Elsinore	La Strada	Camino Del Norte to 1.4 Mi. E of Camino Del Norte	1.40	0	0	N/A	4	Secondary	23,200	23,200	E
Elsinore	Lake St	Nicholas Rd to Temescal Canyon Rd	1.17	2	15,600	F	6	Urban Arterial	52,000	67,600	F
Elsinore	Lakeshore Dr	Riverside Dr to Adam Ave	1.29	2	9,300	D or better	4	Secondary	17,500	26,800	F
Elsinore	Mission Trl	Corydon Rd to Malaga Rd	1.40	4	11,800	D or better	4	Arterial	31,400	43,200	E
Elsinore	Railroad Canyon Rd	0.19 Mi. E of Canyon Lake Dr N to Goetz Rd	1.04	2	22,000	F	4	Arterial	22,100	44,100	F
Elsinore	Railroad Canyon Rd	I-15 NB Ramps at Diamond Dr/ Railroad Canyon Rd to 0.19 Mi. E of Canyon Lake Dr N	3.20	4	25,200	D or better	4	Arterial	27,900	53,100	F
Elsinore	Summerhill Dr	Railroad Canyon Rd to La Strada	1.87	2	13,300	F	4	Major	21,300	34,600	F
Elsinore	Temescal Canyon Rd	Horsethief Canyon Rd to 0.42 Mi. W of Lake St	1.84	2	6,800	D or better	4	Major	27,500	34,300	F
Elsinore	Vacation Dr	Greenwald Ave to 0.76 Mi. N of Canyon Lake Dr N	1.07	2	3,600	D or better	2	Collector	8,300	11,900	E
Lake Mathews / Woodcrest	Cajalco Rd	El Sobrante Rd to 0.25 Mi. W of Alexander St	3.43	2	11,500	D or better	6	Express-way	76,800	88,300	E
Lake Mathews / Woodcrest	El Sobrante Rd	Cajalco Rd to Mockingbird Canyon Rd	1.06	4	10,300	D or better	4	Arterial	26,300	36,600	E
Lake Mathews / Woodcrest	El Sobrante Rd	McAllister St to Mockingbird Canyon Rd	3.83	2	6,400	D or better	4	Arterial	30,300	36,700	E
Lake Mathews / Woodcrest	El Toro Rd	1.87 Mi. S of Lake Mathews Dr to Lake Mathews Dr	1.84	2	7,600	D or better	2	Mountain Arterial	10,800	18,400	F
Lake Mathews / Woodcrest	Gavilan Hills Rd	Lake Mathews Dr to Gavilan Rd	1.97	0	0	N/A	4	Secondary	26,700	26,700	F
Lake Mathews / Woodcrest	La Sierra Ave	El Sobrante Rd to 0.14 Mi. NW of McAllister Pkwy	1.83	4	9,600	D or better	4	Arterial	35,800	45,400	F
Lake Mathews / Woodcrest	Mockingbird Canyon Rd	Markham St to Van Buren Blvd	2.40	4	16,000	D or better	4	Secondary	16,000	32,000	F

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Lake Mathews / Woodcrest	Rider St	0.75 Mi. W of Brown St to 1.73 Mi. E of Gavilan Rd	1.48	0	0	N/A	2	Collector	11,800	11,800	E
Lake Mathews / Woodcrest	Santa Rosa Mine Rd	Lake Mathews Dr to 0.29 Mi. W of Post Rd	3.71	2	4,700	D or better	2	Mountain Arterial	11,500	16,200	E
Lake Mathews / Woodcrest	Van Buren Blvd	0.48 Mi. SE of A St to Washington St	2.83	4	30,100	F	6	Urban Arterial	28,900	59,000	F
Lake Mathews / Woodcrest	Van Buren Blvd	Washington St to 0.79 Mi. W of Wood Rd	1.29	4	31,300	F	6	Urban Arterial	27,700	59,000	F
Lake Mathews / Woodcrest	Washington St	Nandina Ave to Van Buren Blvd	1.16	2	6,200	D or better	4	Major	27,000	33,200	E
Highgrove	Pigeon Pass Rd	1.44 Mi. E of Mount Vernon Ave to Mount Vernon Ave	1.44	0	0	N/A	4	Mountain Arterial	36,800	36,800	F
March	Van Buren Blvd	I-215 Offramp at Van Buren Blvd to Oleander Ave	2.02	0	0	N/A	4	Secondary	24,000	24,000	E
March	Van Buren Blvd	Orange Terrace Pkwy to I-215 SB Ramp at Van Buren Blvd	1.89	4	27,600	E	6	Urban Arterial	39,000	66,600	F
Mead Valley	Brown St	Post Rd to Cajalco Rd	1.69	2	1,600	D or better	4	Secondary	22,700	24,300	E
Mead Valley	Case Rd	Goetz Rd to Mapes Rd	1.95	2	9,200	D or better	4	Secondary	24,900	34,100	F
Mead Valley	E San Jacinto Ave	Mc Canna St - Redlands Ave to Dunlap Dr	1.36	2	6,000	D or better	4	Secondary	24,100	30,100	F
Mead Valley	Evans Rd	E Nuevo Rd to I 215 SB Offramp	1.88	0	0	N/A	6	Urban Arterial	56,400	56,400	F
Mead Valley	Evans Rd	E Nuevo Rd to Orange Ave	1.00	2	1,400	D or better	6	Urban Arterial	55,100	56,500	F
Mead Valley	Evans Rd	Mid County Pkwy EB Ramps at Evans Rd to Ramona Expy	1.63	2	5,200	D or better	6	Urban Arterial	60,300	65,500	F
Mead Valley	Goetz Rd	McLaughlin Rd to Ellis Ave	2.50	2	12,400	E	6	Urban Arterial	50,300	62,700	F
Mead Valley	Harvill Ave	Orange Ave to Cajalco Expy	1.98	4	5,800	D or better	4	Major	28,700	34,500	F
Mead Valley	N Perris Blvd	E San Jacinto Ave to Placentia St	2.49	2	16,100	F	6	Urban Arterial	46,500	62,600	F
Mead Valley	N Perris Blvd	Placentia St to Oleander Ave	2.49	2	18,400	F	6	Urban Arterial	43,400	61,800	F
Mead Valley	Nandina Ave	Barton St to Day St	2.02	2	3,800	D or better	4	Secondary	25,900	29,700	F
Mead Valley	Old Elsinore Rd	San Jacinto Ave to Anderson Rd	1.97	2	7,000	D or better	4	Secondary	21,800	28,800	F
Sun City / Menifee Vlly	Bundy Canyon Rd	Cottonwood Canyon Rd to Murrieta Rd	1.00	2	8,800	D or better	6	Urban Arterial	48,100	56,900	F
Sun City / Menifee Vlly	McCall Blvd	Briggs Rd to Menifee Rd	1.08	0	0	N/A	6	Urban Arterial	63,100	63,100	F
Sun City / Menifee Vlly	Newport Rd	0.59 Mi. W of Normandy Rd to Murrieta Rd	1.09	2	15,200	F	6	Urban Arterial	43,700	58,900	F
Sun City / Menifee Vlly	Newport Rd	Murrieta Rd to Domenigoni Pkwy	3.28	4	22,500	D or better	6	Urban Arterial	33,800	56,300	F
Sun City / Menifee Vlly	Valley Blvd	Goetz Rd to McCall Blvd	1.31	0	0	N/A	4	Arterial	39,900	39,900	F

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Sun City / Menifee Vlly	Valley Blvd	Murrieta Rd to Cherry Hills Blvd	1.17	2	3,900	D or better	4	Arterial	32,300	36,200	E
Southwest Area	Clinton Keith Rd	0.05 Mi. E of I-215 NB Ramps at Clinton Keith Rd to 0.49 Mi. E of Meadowlark Ln - Whitewood Rd	1.04	2	12,400	E	6	Urban Arterial	44,900	57,300	F
Southwest Area	Clinton Keith Rd	La Estrella St - Nutmeg St to I-215 SB Ramps at Clinton Keith Rd	1.66	4	22,100	D or better	6	Urban Arterial	53,100	75,200	F
Southwest Area	Clinton Keith Rd	Leon Rd to 1.2 Mi. W of Leon Rd	1.20	0	0	N/A	6	Urban Arterial	56,600	56,600	F
Southwest Area	Keller Rd	Washington St to Rawson Rd	1.17	2	800	D or better	2	Collector	11,100	11,900	E
Southwest Area	Murrieta Hot Springs Rd	I-215 NB Onramp at Murrieta Hot Springs Rd to Margarita Rd	1.40	4	24,100	D or better	4	Arterial	22,800	46,900	F
Southwest Area	Pala Rd	1.51 Mi. S of Deer Hollow Way - Eastern Bypass to Deer Hollow Way - Eastern Bypass	1.51	2	5,200	D or better	2	Collector	8,100	13,300	F
Southwest Area	Tenaja Rd	0.51 Mi. E of Washington Ave to 0.96 Mi. S of Calle Del Oso Oro	1.15	0	0	N/A	2	Collector	14,900	14,900	F
Reche Cyn / Badlands	Gilman Springs Rd	2.89 Mi. SE of Bold Style Ave to 0.34 Mi. NW of Bold Style Ave	3.23	2	14,600	F	4	Arterial	35,500	50,100	F
Reche Cyn / Badlands	Heacock St	Cardinal Ave to Gentian Ave	1.49	2	12,000	E	4	Major	24,700	36,700	F
Reche Cyn / Badlands	Heacock St	Gentian Ave to Cactus Ave	1.00	4	17,900	D or better	4	Major	21,400	39,300	F
Reche Cyn / Badlands	Indian St	Oleander Ave to Krameria Ave	1.51	2	3,600	D or better	4	Secondary	23,800	27,400	F
Reche Cyn / Badlands	Iris Ave	Lasselle St to Oliver St	1.46	6	15,300	D or better	6	Urban Arterial	41,700	57,000	F
Reche Cyn / Badlands	Kitching St	Nandina Ave to Iris Ave	1.51	2	3,800	D or better	4	Major	32,800	36,600	F
Reche Cyn / Badlands	Lasselle St	Oleander Ave to Iris Ave	2.30	4	14,000	D or better	4	Major	30,900	44,900	F
Reche Cyn / Badlands	Perris Blvd	Oleander Ave to Cactus Ave	3.49	2	17,700	F	4	Arterial	26,300	44,000	F
Reche Cyn / Badlands	Pigeon Pass Rd	0.56 Mi. N of Sunnymead Ranch Pkwy to 3.05 Mi. E of Mount Vernon Ave	1.08	2	900	D or better	4	Mountain Arterial	35,900	36,800	F
Reche Cyn / Badlands	Pigeon Pass Rd	3.05 Mi. E of Mount Vernon Ave to 1.44 Mi. E of Mount Vernon Ave	1.61	0	0	N/A	4	Mountain Arterial	37,100	37,100	F
Reche Cyn / Badlands	Reche Canyon Rd	2.36 Mi. W of Reche Canyon Rd Cutoff to Reche Canyon Rd Cutoff	2.36	2	14,900	F	4	Mountain Arterial	33,500	48,400	F
Reche Cyn / Badlands	Reche Canyon Rd	Reche Canyon Rd Cutoff to Moreno Beach Dr	5.04	2	7,400	D or better	4	Mountain Arterial	23,400	30,800	E
Reche Cyn / Badlands	Redlands Blvd	Locust Ave to San Timoteo Canyon Rd	2.54	2	18,600	F	2	Mountain Arterial	9,100	27,700	F
Lakeview / Nuevo	Ramona Expy/Mid County Pkwy	Mid County Pkwy EB Onramp at Ramona Expy to Mid County Pkwy EB Offramp at ~~Town Center Blvd~~ *B St*	~~3.61~~*3.62*	2	~~11,200~~*1,700*	~~D or better~~*E*	~~3~~*6*	Freeway	~~50,800~~ *120,100*	~~62,000~~ *131,800*	E
Lakeview / Nuevo	Ramona Expy/Mid County Pkwy	Mid County Pkwy EB Onramp at ~~Town Center Blvd~~*B St* to 1 Mi. E of Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St*	2.15	2	11,300	D or better	~~3~~*6*	Freeway	~~50,800~~ *109,300*	~~62,100~~ *120,600*	E

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
~~Lakeview / Nuevo~~	~~Ramona Expy/Mid Co Pkwy~~	~~Mid County Pkwy WB Offramp at Ramona Expy to Mid County Pkwy WB Onramp at Town Center Blvd~~	~~3.63~~	~~2~~	~~11,700~~	~~E~~	~~3~~	~~Freeway~~	~~50,300~~	~~62,000~~	~~E~~
Harvest Vlly / Winchester	Grand Ave	Leon Rd to 1 Mi. W of Winchester Rd	1.05	2	800	D or better	6	Urban Arterial	53,900	54,700	E
Harvest Vlly / Winchester	Grand Ave	Leon Rd to Briggs Rd	1.00	0	0	N/A	6	Urban Arterial	61,500	61,500	F
Harvest Vlly / Winchester	Menifee Rd	Mapes Rd to Ellis Ave	1.02	2	4,000	D or better	6	Urban Arterial	51,200	55,200	E
Harvest Vlly / Winchester	Street A	Beeler Rd to Winchester Rd	1.59	0	0	N/A	4	Secondary	32,200	32,200	F
The Pass	Bryant St	W Ave L to Singleton Rd	1.12	0	0	N/A	4	Secondary	42,900	42,900	F
The Pass	E 1st St	Michigan Ave to Highland Springs Ave	1.26	2	1,600	D or better	4	Major	34,000	35,600	F
The Pass	Oak Glen Rd	Beaumont Ave to 1.75 Mi. N of Beaumont Ave	1.75	4	3,500	D or better	4	Secondary	23,500	27,000	F
The Pass	San Timoteo Canyon Rd	0.23 Mi. NW of Live Oak Canyon Rd to Redlands Blvd	1.22	2	17,900	F	2	Mountain Arterial	11,700	29,600	F
The Pass	Seminole Dr	Rushmore Ave to Deep Creek Rd	3.10	0	0	N/A	4	Secondary	39,500	39,500	F
The Pass	Sun Lakes Blvd	Highland Springs Ave to Highland Home Rd	1.11	4	2,700	D or better	4	Major	38,600	41,300	F
The Pass	W Ramsey St	N Highland Springs Ave to 0.38 Mi. E of S 22nd St	3.04	4	3,300	D or better	4	Major	31,000	34,300	F
The Pass	W Wilson St	1.14 Mi. W of N 8th St to N 8th St	1.14	4	4,900	D or better	4	Major	37,300	42,200	F
The Pass	Westward Ave	Michigan Ave to Highland Springs Ave	1.25	2	200	D or better	4	Secondary	23,500	23,700	E
The Pass	Westward St	2.18 Mi. W of Apache Trl to Hathaway St	1.02	0	0	N/A	4	Major	42,800	42,800	F
The Pass	I-10 Bypass	Apache Trl to 2.18 Mi. W of Apache Trl	2.18	0	0	N/A	4	Major	40,000	40,000	F
San Jacinto Valley	N Warren Rd	Deegan St to Ramona Blvd	1.33	2	6,000	D or better	4	Arterial	27,900	33,900	E
San Jacinto Valley	Ramona Expy/Mid County Pkwy	1 Mi. E of Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St* to Mid County Pkwy EB Offramp at Warren Rd	2.10	2	8,500	D or better	*36*	Freeway	58,000	66,500	F
San Jacinto Valley	SR-79/ Ramona Expy	0.35 Mi. SE of Byrd St to N State St	1.57	2	15,200	F	6	Urban Arterial	43,500	58,700	F
San Jacinto Valley	Stetson Ave	S Sanderson Ave to Gilbert St	1.77	4	19,100	D or better	4	Major	14,500	33,600	E
San Jacinto Valley	Warren Rd	Potter Rd to Gilman Springs Rd	2.68	0	0	N/A	4	Secondary	29,800	29,800	F
W. Coachella Valley	44th Ave	Golf Center Pkwy to Harrison St	1.03	2	5,600	D or better	4	Secondary	25,400	31,000	F
W. Coachella Valley	E Palm Canyon Dr	La Verne Way - S Sunrise Way to Golf Club Dr	2.53	4	27,400	E	4	Major	5,400	32,800	E
W. Coachella Valley	Garnet Ave	I 10 EB Offramp to Wall Rd	3.72	0	0	N/A	4	Secondary	35,800	35,800	F
W. Coachella Valley	Garnet Ave	Wall Rd to N Indian Canyon Dr	2.06	2	6,500	D or better	4	Secondary	18,400	24,900	E

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
W. Coachella Valley	Hacienda Dr	Mountain View Rd to Long Canyon Rd	1.14	2	5,000	D or better	4	Secondary	21,500	26,500	F
W. Coachella Valley	Indio Blvd	Fred Waring Dr to 48th Ave	3.12	4	7,900	D or better	6	Urban Arterial	52,700	60,600	F
W. Coachella Valley	Madison St	58th Ave to Airport Blvd	1.00	4	13,400	D or better	4	Arterial	23,800	37,200	F
W. Coachella Valley	Monroe St	0.5 Mi. N of 62nd Ave to 0.5 Mi. N of 60th Ave	1.01	2	12,600	E	4	Arterial	22,900	35,500	E
W. Coachella Valley	Monroe St	Airport Blvd to 54th Ave	1.00	4	18,700	D or better	4	Arterial	22,000	40,700	E
W. Coachella Valley	N Gene Autry Trl	I-10 EB Offramp at Gene Autry Trail / Palm Dr to E Vista Chino	2.33	2	20,200	D or better	6	Major	7,300	27,500	F
W. Coachella Valley	N Indian Canyon Dr	18th Ave to Pierson Blvd	3.01	2	15,100	F	4	Arterial	29,500	44,600	F
W. Coachella Valley	N Indian Canyon Dr	Pierson Blvd to 1.4 Mi. N of Mission Lakes Blvd	2.41	2	9,600	D or better	4	Arterial	31,400	41,000	E
W. Coachella Valley	N Indian Canyon Dr	SR-62 to 1.4 Mi. N of Mission Lakes Blvd	1.49	2	6,900	D or better	4	Arterial	34,900	41,800	E
W. Coachella Valley	SR-111	Deep Canyon Rd to El Dorado Dr	1.49	4	39,300	F	6	Urban Arterial	18,400	57,700	F
W. Coachella Valley	SR-111	El Dorado Dr to Washington St	2.59	4	42,900	F	6	Urban Arterial	15,500	58,400	F
W. Coachella Valley	SR-111/N Palm Cyn Dr	Vista Chino to Tram Way Rd - W San Rafael Dr	1.12	4	24,600	D or better	4	Major	29,300	53,900	F
W. Coachella Valley	Tamarack Rd	Haugen-Lehmann Way to I 10 WB Offramp	2.58	0	0	N/A	4	Secondary	38,300	38,300	F
W. Coachella Valley	Tamarack Rd	Rushmore Ave to Haugen-Lehmann Way	1.76	2	300	D or better	4	Secondary	39,700	40,000	F
W. Coachella Valley	Varner Rd	1.18 Mi. NW of Da Vall Dr to Landau Blvd - Mountain View Rd	2.16	2	10,500	D or better	4	Arterial	33,900	44,400	F
W. Coachella Valley	Washington St	SR-111 to 0.45 Mi. N of Fred Waring Dr	1.58	4	34,300	F	6	Urban Arterial	20,000	54,300	E
W. Coachella Valley	Cottonwood Springs Rd	I-10 WB Ramps at Cottonwood Springs Rd to 6.82 Mi. S of El Dorado Mine Rd	6.80	2	1,600	D or better	2	Collector	15,100	16,700	F
W. Coachella Valley	Dillon Rd	SR-86 SB Ramps at Dillon Rd to 44th Ave	1.73	2	1,900	D or better	4	Arterial	54,400	56,300	F
Desert Center	Kaiser Rd	SR-177 to 11.91 Mi. N of SR-177	11.91	2	1,500	D or better	4	Major	41,700	43,200	F
East Co. - Desert Area	Chuckwalla Valley Rd	Chuckwalla Valley Rd to Chuckwalla Valley Rd	5.01	0	0	N/A	2	Collector	20,000	20,000	F
East Co. - Desert Area	Chuckwalla Valley Rd	I-10 EB Ramps at Chuckwalla Valley Rd to I-10 EB Ramps at Ford Dry Lake Rd/ Chuckwalla Valley Rd	16.24	2	1,300	D or better	2	Collector	18,600	19,900	F
East Co. - Desert Area	Cottonwood Springs Rd	6.8 Mi. N of I-10 WB Ramps at Cottonwood Springs Rd to El Dorado Mine Rd	6.82	2	1,600	D or better	2	Collector	15,100	16,700	F
East Co. - Desert Area	El Dorado Mine Rd	Cottonwood Springs Rd to Loop Rd	22.90	2	1,500	D or better	2	Collector	24,100	25,600	F

Area Plan	Roadway Segment	Limits	Baseline				GPA960 (Build Out)				
			Miles	No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
East Co. - Desert Area	Gold Park	2.28 Mi. N of El Dorado Mine Rd to El Dorado Mine Rd	2.28	0	0	N/A	2	Collector	21,400	21,400	F
East Co. - Desert Area	US Hwy 95	San Bernardino County Line to 7.94 Mi. S of San Bernardino County Line	7.94	0	0	N/A	2	Mountain Arterial	24,500	24,500	F

Note: Shaded cells indicate project impact.
Source: Riverside County staff.

As shown in Table 4.18-O and Table 4.18-P, even with the updated policies identified in GPA No. 960, numerous facilities are expected to operate at an unacceptable level. Based on the significance criteria described above, although GPA No. 960 is generally less impactful compared to the Existing General Plan, it would still result in a significant impact to those study facilities.

d. Summary of Level of Service Assessment Results

The information below provides a summary for non-state facilities related to operating characteristics. Table 4.18-Q summarizes the total miles of Riverside County and city roadway segments that will operate at LOS D or better, LOS E, and LOS F. Table 4.18-R summarizes similar information, but presents the data as total lane miles within Riverside County (e.g., accounts for number of lanes on the roadway, not just the length of the segment).

The following conclusions can be inferred from reviewing the data in Table 4.18-Q (Summary of Operating Characteristics – Miles of Roadways – Arterial Road Network) and Table 4.18-R (Summary of Operating Characteristics – Lane Miles of Roadway – Arterial Road Network):

Table 4.18-Q Summary of Operating Characteristics – Miles of Roadways – Arterial Road Network

	County Miles						City Miles						County & City Miles					
	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%
Baseline	1,303	11	28	1,342	40	3.0%	1,704	20	69	1,793	89	5.0%	3,007	32	97	3,135	129	4.1%
Baseline Plus Project	1,293	11	39	1,342	50	3.7%	1,554	52	187	1,793	239	13.3%	2,847	63	225	3,135	288	9.2%
GPA960 (Buildout)	1,542	62	172	1,776	234	13.2%	1,721	87	229	2,037	316	15.5%	3,263	149	401	3,813	550	14.4%
Existing General Plan	1,386	69	320	1,776	390	21.9%	1,707	85	245	2,037	330	16.2%	3,093	155	566	3,813	720	18.9%

Source: Riverside County Staff

Table 4.18-R Summary of Operating Characteristics – Lane Miles of Roadway – Arterial Road Network

	County Lane Miles						City Lane Miles						County & City Lane Miles					
	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%	LOS D or Better	LOS E	LOS F	All LOS	LOS E & F	%
Baseline	2,817	30	70	2,917	99	3.4%	4,687	57	190	4,933	246	5.0%	7,504	86	260	7,850	346	4.4%
Baseline Plus Project	4,140	39	81	4,259	120	2.8%	4,265	164	504	4,933	668	13.5%	8,405	203	585	9,193	788	8.6%
GPA960 (Buildout)	5,046	238	545	5,829	783	13.4%	6,337	363	1,010	7,710	1,373	17.8%	11,383	600	1,556	13,539	2,156	15.9%
Existing General Plan	5,159	288	964	6,411	1,253	19.5%	6,411	365	995	7,771	1,360	17.5%	11,569	654	1,959	14,182	2,613	18.4%

Source: Riverside County Staff

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Table 4.18-S Matrix for Comparing Scenarios and Impacts (County Roads)

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Temescal Canyon	Bedford Canyon Rd	0.38 Mi. N of Cajalco Rd - Eagle Glen Pkwy to E Foothill Pkwy	0.53	2	5,500	D or better	2	Collector	2,900	8,400	D or better	1.06	2	Collector	8,400	13,900	F
Temescal Canyon	Cajalco Rd	Temescal Canyon Rd to Eagle Valley Pkwy	0.37	2	12,300	E	6	Expressway	8,500	20,800	D or better	2.22	6	Expressway	68,200	80,500	F
Temescal Canyon	E Ontario Ave	El Cerrito Rd to 0.67 Mi. NW of El Cerrito Rd	0.67	4	10,100	D or better	4	Arterial	6,100	16,200	D or better	2.68	4	Arterial	35,400	45,500	F
Temescal Canyon	Indiana Ave	0.53 Mi. SW of Buchanan St to 0.26 Mi. SW of Buchanan St	0.26	2	8,200	D or better	4	Secondary	3,000	11,200	D or better	1.04	4	Secondary	24,400	32,600	F
Temescal Canyon	Knabe Rd	0.64 Mi. N of Hunt Rd to 1.39 Mi. N of Hunt Rd	1.19	4	14,700	D or better	4	Major	7,100	21,800	D or better	4.76	4	Major	15,500	30,200	D or better
Temescal Canyon	Knabe Rd	1.07 Mi. S of Dos Lagos Dr - Weirick Rd to Dos Lagos Dr - Weirick Rd	0.57	2	14,700	F	4	Major	7,100	21,800	D or better	2.28	4	Major	15,500	30,200	D or better
Temescal Canyon	Lawson Rd	Temescal Canyon Rd to 0.24 Mi. S of Hunt Rd	0.51	2	4,400	D or better	2	Collector	8,500	12,900	E	1.02	2	Collector	6,000	10,400	D or better
Temescal Canyon	Mc Kinley St	Indiana Ave to Magnolia Ave	0.44	4	6,500	D or better	4	Secondary	1,500	8,000	D or better	1.76	4	Secondary	17,400	23,900	E
Temescal Canyon	Temescal Canyon Rd	0.05 Mi. N of Temescal Canyon Rd Cutoff to Dos Lagos Dr	2.26	2	2,900	D or better	4	Arterial	3,400	6,300	D or better	9.04	4	Arterial	32,900	35,800	E
Temescal Canyon	Temescal Canyon Rd	Cajalco Rd to El Cerrito Rd	1.12	2	9,000	D or better	4	Arterial	5,300	14,300	D or better	4.48	4	Arterial	42,000	51,000	F
Elsinore	El Toro Rd	3.03 Mi. N of Mermack Ave to 4.89 Mi. N of Mermack Ave	4.60	2	6,900	D or better	2	Mountain Arterial	(2,800)	4,100	D or better	9.20	2	Mountain Arterial	10,500	17,400	F
Elsinore	El Toro Rd	Mermack Ave to 2.27 Mi. N of Mermack Ave	3.14	2	6,900	D or better	2	Mountain Arterial	2,200	9,100	D or better	6.28	2	Mountain Arterial	9,700	16,600	F
Elsinore	Greenwald Ave	Bella Vista to Riverside St	0.90	2	3,900	D or better	4	Secondary	2,700	6,600	D or better	3.60	4	Secondary	23,000	26,900	F
Elsinore	Hammack Ave	SR-74 to Telford Ave	1.09	2	1,100	D or better	2	Collector	3,500	4,600	D or better	2.18	2	Collector	16,600	17,700	F
Elsinore	Meadowbrook Ave	Peach St to SR-74	0.25	2	1,700	D or better	4	Secondary	6,100	7,800	D or better	1.00	4	Secondary	30,700	32,400	F
Elsinore	Telford Ave	Hammack Ave to Peach St	0.65	2	1,300	D or better	4	Secondary	5,200	6,500	D or better	2.60	4	Secondary	29,600	30,900	F
Elsinore	Temescal Canyon Rd	Horsethief Canyon Rd to 0.42 Mi. W of Lake St	1.84	2	6,800	D or better	4	Major	6,400	13,200	D or better	7.36	4	Major	27,500	34,300	F
Elsinore	Theda St	0.59 Mi. N of River Rd to Ethanac Rd	0.57	2	900	D or better	4	Secondary	4,200	5,100	D or better	2.28	4	Secondary	23,300	24,200	E
Lk. Mathews / Woodcrest	Alessandro Blvd	I-215 SB Offramp at Alessandro Blvd to Old 215 Frontage Rd	0.35	4	30,900	F	6	Urban Arterial	5,300	36,200	D or better	2.10	6	Urban Arterial	33,000	63,900	F
Lk. Mathews / Woodcrest	Cactus Ave	I-215 SB Ramps at Cactus Ave to I-215 NB Offramp at Cactus Ave - Old I-215 Frontage Rd	0.25	2	9,900	D or better	4	Major	4,400	14,300	D or better	1.00	4	Major	40,300	50,200	F
Lk. Mathews / Woodcrest	Cajalco Rd	El Sobrante Rd to 0.25 Mi. W of Alexander St	3.34	2	11,500	D or better	2	Existing	6,200	17,700	F	6.68	6	Expressway	76,800	88,300	E
Lk. Mathews / Woodcrest	El Sobrante Rd	Cajalco Rd to Mockingbird Canyon Rd	0.99	4	10,300	D or better	4	Arterial	6,900	17,200	D or better	3.96	4	Arterial	26,300	36,600	E
Lk. Mathews / Woodcrest	El Sobrante Rd	McAllister St to 0.42 Mi. W of McAllister St	0.43	2	5,700	D or better	4	Arterial	5,000	10,700	D or better	1.72	4	Arterial	27,800	33,500	E
Lk. Mathews / Woodcrest	El Sobrante Rd	McAllister St to Mockingbird Canyon Rd	3.85	2	6,400	D or better	4	Arterial	5,800	12,200	D or better	15.40	4	Arterial	30,300	36,700	E
Lk. Mathews / Woodcrest	El Toro Rd	1.87 Mi. S of Lake Mathews Dr to Lake Mathews Dr	1.70	2	7,600	D or better	2	Mountain Arterial	2,500	10,100	D or better	3.40	2	Mountain Arterial	10,800	18,400	F
Lk. Mathews / Woodcrest	Gavilan Rd	Gavilan Hills Rd to Cajalco Rd	1.14	2	10,400	D or better	4	Secondary	4,600	15,000	D or better	4.56	4	Secondary	19,500	29,900	F
Lk. Mathews / Woodcrest	La Sierra Ave	0.25 Mi. NW of McAllister Pkwy to Victoria Ave	0.27	4	13,800	D or better	4	Arterial	8,100	21,900	D or better	1.08	4	Arterial	40,300	54,100	F
Lk. Mathews / Woodcrest	La Sierra Ave	El Sobrante Rd to 0.14 Mi. NW of McAllister Pkwy	1.85	4	9,600	D or better	4	Arterial	8,500	18,100	D or better	7.40	4	Arterial	35,800	45,400	F
Lk. Mathews / Woodcrest	La Sierra Ave	El Sobrante Rd to 0.92 Mi. S of El Sobrante Rd	0.95	2	3,200	D or better	2	Collector	4,800	8,000	D or better	1.90	2	Collector	9,600	12,800	E
Lk. Mathews / Woodcrest	Lake Mathews Dr	Gavilan Hills Rd to El Toro Rd	1.02	2	3,600	D or better	4	Secondary	5,400	9,000	D or better	4.08	4	Secondary	29,700	33,300	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Lk. Mathews / Woodcrest	Markham St	Cole Ave to Barton St	0.67	2	6,800	D or better	4	Secondary	6,000	12,800	D or better	2.68	4	Secondary	21,600	28,400	F
Lk. Mathews / Woodcrest	Mockingbird Canyon Rd	Markham St to Van Buren Blvd	2.46	4	16,000	D or better	4	Secondary	9,300	25,300	E	9.84	4	Secondary	16,000	32,000	F
Lk. Mathews / Woodcrest	Santa Rosa Mine Rd	Lake Mathews Dr to 0.29 Mi. W of Post Rd	3.91	2	4,700	D or better	2	Mountain Arterial	5,300	10,000	D or better	7.82	2	Mountain Arterial	11,500	16,200	E
Lk. Mathews / Woodcrest	Van Buren Blvd	0.48 Mi. SE of A St to Washington St	2.84	4	30,100	F	6	Urban Arterial	6,100	36,200	D or better	17.04	6	Urban Arterial	28,900	59,000	F
Lk. Mathews / Woodcrest	Van Buren Blvd	Washington St to 0.79 Mi. W of Wood Rd	1.58	4	31,300	F	6	Urban Arterial	7,200	38,500	D or better	9.48	6	Urban Arterial	27,700	59,000	F
Lk. Mathews / Woodcrest	Victoria Ave	Fillmore St to La Sierra Ave	0.54	2	5,200	D or better	2	Collector	3,200	8,400	D or better	1.08	2	Collector	7,800	13,000	F
Lk. Mathews / Woodcrest	Washington St	0.52 Mi. W of Golden Star Ave to Golden Star Ave	0.52	2	13,400	F	4	Arterial	0	13,400	D or better	2.08	4	Arterial	24,100	37,500	F
Lk. Mathews / Woodcrest	Washington St	0.52 Mi. W of Golden Star Ave to Hermosa Dr	0.68	2	12,600	E	4	Arterial	2,500	15,100	D or better	2.72	4	Arterial	27,300	39,900	E
Lk. Mathews / Woodcrest	Washington St	Nandina Ave to Van Buren Blvd	1.04	2	6,200	D or better	4	Major	4,200	10,400	D or better	4.16	4	Major	27,000	33,200	E
Lk. Mathews / Woodcrest	Washington St	Van Buren Blvd to Golden Star Ave	0.56	2	12,500	E	4	Arterial	3,400	15,900	D or better	2.24	4	Arterial	30,000	42,500	E
Highgrove	Box Springs Rd	I-215 NB Ramps at Fair Isle Dr/Box Springs Rd to 1.01 Mi. W of Day St	0.33	2	13,800	F	4	Secondary	6,000	19,800	D or better	1.32	4	Secondary	17,600	31,400	F
Highgrove	Center St	N Orange St to Iowa Ave	0.59	2	5,000	D or better	4	Secondary	2,100	7,100	D or better	2.36	4	Secondary	21,800	26,800	F
Highgrove	Central Ave	Lochmoor Dr to Sycamore Canyon Blvd	0.36	4	16,500	D or better	4	Arterial	1,100	17,600	D or better	1.44	4	Arterial	22,600	39,100	F
Highgrove	La Cadena Dr E	Center St to W Main St	0.26	2	20,000	F	4	Major	1,000	21,000	D or better	1.04	4	Major	44,200	64,200	F
Highgrove	Mount Vernon Ave	Center St - Pigeon Pass Rd to Main St	0.25	2	4,500	D or better	4	Secondary	3,400	7,900	D or better	1.00	4	Secondary	44,300	48,800	F
Highgrove	Sycamore Canyon Blvd	Fair Isle Dr to Central Ave	0.89	2	10,500	D or better	4	Secondary	3,500	14,000	D or better	3.56	4	Secondary	44,300	54,800	F
March	Alessandro Blvd	Brown St to I-215 SB Offramp at Alessandro Blvd	0.40	4	38,800	F	6	Urban Arterial	8,400	47,200	D or better	2.40	6	Urban Arterial	40,300	79,100	F
March	Heacock St	Nandina Ave to Cardinal Ave	0.50	2	13,700	F	4	Major	5,100	18,800	D or better	2.00	4	Major	18,400	32,100	E
March	Meridian Pkwy	Cactus Ave to Alessandro Blvd	0.73	2	500	D or better	4	Major	300	800	D or better	2.92	4	Major	31,200	31,700	E
March	Van Buren Blvd	Orange Terrace Pkwy to I-215 SB Ramp at Van Buren Blvd	1.88	4	27,600	E	6	Urban Arterial	7,500	35,100	D or better	11.28	6	Urban Arterial	39,000	66,600	F
Mead Valley	Brown St	Post Rd to Cajalco Rd	1.47	2	1,600	D or better	4	Secondary	1,100	2,700	D or better	5.88	4	Secondary	22,700	24,300	E
Mead Valley	Cajalco Rd	Alexander St to Brown St	0.50	2	9,100	D or better	6	Expressway	5,300	14,400	D or better	3.00	6	Expressway	79,200	88,300	E
Mead Valley	Ellis Ave	Post Rd to Belita Dr	0.46	2	5,600	D or better	4	Secondary	300	5,900	D or better	1.84	4	Secondary	19,300	24,900	E
Mead Valley	Harvill Ave	Orange Ave to Cajalco Expy	1.99	4	5,800	D or better	4	Major	16,100	21,900	D or better	7.96	4	Major	28,700	34,500	F
Mead Valley	Markham St	Barton St to Alexander St	0.50	2	6,800	D or better	4	Secondary	6,000	12,800	D or better	2.00	4	Secondary	27,400	34,200	F
Mead Valley	Markham St	Seaton Ave to Day St	1.01	2	9,000	D or better	2	Mountain Arterial	7,300	16,300	F	2.02	4	Secondary	13,900	22,900	D or better
Mead Valley	Nandina Ave	Barton St to Day St	2.02	2	3,800	D or better	4	Secondary	2,100	5,900	D or better	8.08	4	Secondary	25,900	29,700	F
Mead Valley	Old Elsinore Rd	San Jacinto Ave to Anderson Rd	2.11	2	7,000	D or better	4	Secondary	5,700	12,700	D or better	8.44	4	Secondary	21,800	28,800	F
Mead Valley	Placentia St	Harvill Ave to 0.06 Mi. E of Harvill Ave	0.39	4	2,400	D or better	4	Arterial	10,500	12,900	D or better	1.56	4	Arterial	31,700	34,100	E
Mead Valley	Post Rd	Ellis Ave to Deprad St - Santa Rosa Mine Rd	0.40	2	5,200	D or better	4	Secondary	5,400	10,600	D or better	1.60	4	Secondary	19,400	24,600	E
Mead Valley	Rider St	Seaton Ave to Patterson Ave	0.51	2	600	D or better	4	Secondary	4,000	4,600	D or better	2.04	4	Secondary	26,900	27,500	F
Mead Valley	Sherman Rd	Ellis Ave to Vista Rd	0.50	4	12,500	D or better	2	Collector	0	12,500	E	1.00	2	Collector	(12,500)	0	D or better
Sun City / Menifee Vlly.	Menifee Rd	0.41 Mi. N of Keller Rd to Scott Rd	0.84	2	6,200	D or better	4	Arterial	0	6,200	D or better	3.36	4	Arterial	29,700	35,900	E
Sun City / Menifee Vlly.	Scott Rd	Menifee Rd to 0.51 Mi. E of Menifee Rd	0.48	2	9,400	D or better	6	Urban Arterial	9,400	18,800	D or better	2.88	6	Urban Arterial	44,100	53,500	E

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					*Lane* Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Southwest Area	Clinton Keith Rd	1.6 Mi. W of Leon Rd to 0.88 Mi. E of Meadowlark Ln - Whitewood Rd	0.33	2	11,400	D or better	6	Urban Arterial	8,800	20,200	D or better	1.98	6	Urban Arterial	48,000	59,400	F
Southwest Area	Keller Rd	Washington St to Rawson Rd	1.17	2	800	D or better	2	Collector	10,100	10,900	D or better	2.34	2	Collector	11,100	11,900	E
Southwest Area	Pala Rd	1.51 Mi. S of Deer Hollow Way - Eastern Bypass to Deer Hollow Way - Eastern Bypass	1.50	2	5,200	D or better	2	Collector	200	5,400	D or better	3.00	2	Collector	8,100	13,300	F
Reche Cyn. / Badlands	Cactus Ave	I-215 NB Offramp at Cactus Ave to Elsworth St - Graeber St	0.28	4	23,400	D or better	6	Urban Arterial	5,200	28,600	D or better	1.68	6	Urban Arterial	31,600	55,000	E
Reche Cyn. / Badlands	Cactus Ave	I-215 NB Ramps at Cactus Ave - Old 215 Frontage Rd to I-215 NB Offramp at Cactus Ave	0.19	2	18,600	F	6	Urban Arterial	3,700	22,300	D or better	1.14	6	Urban Arterial	35,100	53,700	E
Reche Cyn. / Badlands	Gilman Springs Rd	2.89 Mi. SE of Bold Style Ave to 0.34 Mi. NW of Bold Style Ave	4.25	2	14,600	F	4	Arterial	9,000	23,600	D or better	17.00	4	Arterial	35,500	50,100	F
Reche Cyn. / Badlands	Graeber St	Riverside Dr to Cactus Ave	1.64	2	5,600	D or better	2	Collector	200	5,800	D or better	3.28	2	Collector	13,400	19,000	F
Reche Cyn. / Badlands	Heacock St	Cardinal Ave to Gentian Ave	1.50	2	12,000	E	4	Major	4,500	16,500	D or better	6.00	4	Major	24,700	36,700	F
Reche Cyn. / Badlands	Heacock St	Gentian Ave to Cactus Ave	1.01	4	17,900	D or better	4	Major	3,900	21,800	D or better	4.04	4	Major	21,400	39,300	F
Reche Cyn. / Badlands	Heacock St	Oleander Ave to Nandina Ave	0.50	2	14,500	F	4	Major	5,500	20,000	D or better	2.00	4	Major	20,200	34,700	F
Reche Cyn. / Badlands	Meyer Dr	Riverside Dr to Graeber St	0.67	2	4,800	D or better	2	Collector	5,700	10,500	D or better	1.34	2	Collector	10,000	14,800	F
Reche Cyn. / Badlands	Pigeon Pass Rd	0.56 Mi. N of Sunnymead Ranch Pkwy to 3.05 Mi. E of Mount Vernon Ave	0.65	2	900	D or better	4	Mountain Arterial	900	1,800	D or better	2.60	4	Mountain Arterial	35,900	36,800	F
Reche Cyn. / Badlands	Reche Canyon Rd	2.36 Mi. W of Reche Canyon Rd Cutoff to Reche Canyon Rd Cutoff	2.36	2	14,900	F	4	Mountain Arterial	2,200	17,100	D or better	9.44	4	Mountain Arterial	33,500	48,400	F
Reche Cyn. / Badlands	Reche Canyon Rd	Reche Canyon Rd Cutoff to Moreno Beach Dr	5.86	2	7,400	D or better	4	Mountain Arterial	(500)	6,900	D or better	23.44	4	Mountain Arterial	23,400	30,800	E
Reche Cyn. / Badlands	Reche Vista Dr	Perris Blvd to Reche Canyon Rd Cutoff	1.67	2	11,700	E	4	Mountain Arterial	1,100	12,800	D or better	6.68	4	Mountain Arterial	12,400	24,100	D or better
Reche Cyn. / Badlands	Redlands Blvd	Locust Ave to San Timoteo Canyon Rd	2.54	2	18,600	F	2	Mountain Arterial	2,900	21,500	F	5.08	2	Mountain Arterial	9,100	27,700	F
Reche Cyn. / Badlands	Riverside Dr	Cactus Ave to Meyer Dr	0.50	4	20,500	D or better	4	Arterial	18,100	38,600	F	2.00	4	Arterial	200	20,700	D or better
Lakeview / Nuevo	10th St	~~Lakeview~~*Reservoir* Ave to Hansen Ave~~ SS Blvd~~	~~0.71~~*0.98*	2	900	D or better	4	Secondary	3,400	4,300	D or better	2.84	4	Secondary	27,800	28,700	F
~~Lakeview / Nuevo~~	~~10th St~~	~~Reservoir Ave to Lakeview Ave~~	~~3.31~~	~~2~~	~~14,100~~	~~F~~	~~4~~	~~Arterial~~	~~0~~	~~14,100~~	~~D or better~~	~~13.24~~	~~4~~	~~Arterial~~	~~19,000~~	~~33,100~~	~~D or better~~
Lakeview / Nuevo	Contour Ave	1.03 Mi. E of Hansen Ave to Hansen Ave	1.03	2	2,800	D or better	2	Collector	9,700	12,500	E	2.06	2	Collector	(500)	2,300	D or better
Lakeview / Nuevo	Evans Rd	Orange Ave to Mid County Pkwy EB Ramps at Evans Rd	0.51	2	700	D or better	6	Urban Arterial	5,600	6,300	D or better	3.06	6	Urban Arterial	67,500	68,200	F
Lakeview / Nuevo	Juniper Flats Rd	Juniper Springs Rd to Warren St	2.97	2	2,900	D or better	2	Collector	12,300	15,200	F	5.94	2	Collector	5,800	8,700	D or better
Lakeview / Nuevo	Lakeview Ave	9th St to Nuevo Rd	2.49	2	5,100	D or better	2	Collector	11,600	16,700	F	4.98	2	Collector	(2,400)	2,700	D or better
Lakeview / Nuevo	Nuevo Rd	Lakeview Ave to Menifee Rd	0.59	2	8,100	D or better	2	Collector	16,800	24,900	F	1.18	2	Collector	(2,300)	5,800	D or better
Lakeview / Nuevo	Ramona Expy/Mid County Pkwy	Mid County Pkwy EB Onramp at Ramona Expy to Mid County Pkwy EB Offramp at ~~Town Center Blvd~~*B St*	~~1.71~~*3.62*	2	~~11,200~~*11,700*	D or better	~~3~~*6*	Freeway	~~11,700~~*36,500*	~~22,900~~*48,200*	D or better	~~5.13~~*21.78*	~~3~~*6*	Freeway	~~50,800~~*120,100*	~~62,000~~*131,800*	E
Lakeview / Nuevo	Ramona Expy/Mid County Pkwy	Mid County Pkwy EB Onramp at ~~Town Center Blvd~~*B St* to 1 Mi. E of Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St*	1.23	2	11,300	D or better	~~3~~*6*	Freeway	~~11,500~~*34,300*	~~22,800~~*45,600*	D or better	~~3.69~~*7.38*	~~3~~*6*	Freeway	~~50,800~~*109,300*	~~62,100~~*120,600*	E
~~Lakeview / Nuevo~~	~~Ramona Expy/Mid County Pkwy~~	~~Mid County Pkwy WB Offramp at Ramona Expy to Mid County Pkwy WB Onramp at Town Center Blvd~~	~~1.98~~	~~2~~	~~11,700~~	~~E~~	~~3~~	~~Freeway~~	~~13,600~~	~~25,300~~	~~D or better~~	~~5.94~~	~~3~~	~~Freeway~~	~~50,300~~	~~62,000~~	~~E~~
Harvest Vlly. / Winchester	Briggs Rd	Olive Ave to Simpson Rd	0.50	2	3,200	D or better	4	Major	7,400	10,600	D or better	2.00	4	Major	29,700	32,900	E
Harvest Vlly. / Winchester	Domenigoni Pkwy	1.14 Mi. E of Patterson Ave to Patterson Ave	1.65	4	28,000	E	6	Urban Arterial	19,200	47,200	D or better	9.90	6	Urban Arterial	8,600	36,600	D or better
Harvest Vlly. / Winchester	Domenigoni Pkwy	Winchester Rd to 0.74 Mi. E of Leon Rd	1.31	6	19,300	D or better	6	Urban Arterial	32,900	52,200	E	7.86	6	Urban Arterial	21,300	40,600	D or better
Harvest Vlly. / Winchester	Grand Ave	Leon Rd to 1 Mi. W of Winchester Rd	1.28	2	800	D or better	6	Urban Arterial	11,700	12,500	D or better	7.68	6	Urban Arterial	53,900	54,700	E
Harvest Vlly. / Winchester	Grand Ave	Winchester Rd to 0.99 Mi. W of Winchester Rd	0.82	2	900	D or better	6	Urban Arterial	13,000	13,900	D or better	4.92	6	Urban Arterial	48,800	49,700	D or better
Harvest Vlly. / Winchester	Juniper Flats Rd	Watson Rd to Pinacate Rd	0.50	2	3,300	D or better	2	Collector	9,600	12,900	E	1.00	2	Collector	6,300	9,600	D or better

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Harvest Vlly. / Winchester	Menifee Rd	Mapes Rd to Ellis Ave	1.03	2	4,000	D or better	6	Urban Arterial	10,100	14,100	D or better	6.18	6	Urban Arterial	51,200	55,200	E
The Pass	Bonita Ave	Apache Trl to Magnolia St	0.36	2	2,800	D or better	4	Major	4,600	7,400	D or better	1.44	4	Major	34,100	36,900	F
The Pass	California Ave	0.22 Mi. N of Beaumont Ave to Westward Ave	0.37	2	4,700	D or better	4	Secondary	5,100	9,800	D or better	1.48	4	Secondary	20,400	25,100	E
The Pass	Cherry Valley Blvd	0.45 Mi. W of N Highland Springs Ave to N Highland Springs Ave	0.45	2	3,100	D or better	4	Arterial	2,300	5,400	D or better	1.80	4	Arterial	30,900	34,000	E
The Pass	Cherry Valley Blvd	Beaumont Ave to 0.77 Mi. E of Beaumont Ave	0.77	2	200	D or better	4	Arterial	300	500	D or better	3.08	4	Arterial	35,200	35,400	E
The Pass	Cherry Valley Blvd	Beckwith Ave to 0.52 Mi. E of Patton Rd	0.81	2	4,800	D or better	4	Arterial	5,100	9,900	D or better	3.24	4	Arterial	31,700	36,500	E
The Pass	Oak Glen Rd	1.75 Mi. N of Beaumont Ave to 2.02 Mi. N of Beaumont Ave	0.28	2	3,000	D or better	4	Secondary	1,900	4,900	D or better	1.12	4	Secondary	23,300	26,300	F
The Pass	Oak Glen Rd	Beaumont Ave to 1.75 Mi. N of Beaumont Ave	1.78	4	3,500	D or better	4	Secondary	2,600	6,100	D or better	7.12	4	Secondary	23,500	27,000	F
The Pass	San Timoteo Canyon Rd	0.23 Mi. NW of Live Oak Canyon Rd to Redlands Blvd	1.22	2	17,900	F	2	Mountain Arterial	3,600	21,500	F	2.44	2	Mountain Arterial	11,700	29,600	F
The Pass	Seminole Dr	Apache Trl to 0.61 Mi. W of Apache Trl	0.44	2	1,900	D or better	4	Secondary	3,700	5,600	D or better	1.76	4	Secondary	23,700	25,600	E
The Pass	Westward Ave	Highland Home Rd to 0.63 Mi. W of Sunset Ave	1.02	4	1,500	D or better	4	Major	2,500	4,000	D or better	4.08	4	Major	42,000	43,500	F
San Jacinto Valley	Bridge St	Gilman Springs Rd to Marvin Rd	2.38	2	3,800	D or better	2	Collector	9,300	13,100	F	4.76	2	Collector	2,100	5,900	D or better
San Jacinto Valley	Devonshire Ave	California Ave to Warren Rd	0.80	2	4,500	D or better	4	Secondary	1,500	6,000	D or better	3.20	4	Secondary	20,100	24,600	E
San Jacinto Valley	Gilman Springs Rd	Bridge St to Warren Rd	0.29	2	13,200	F	4	Arterial	10,200	23,400	D or better	1.16	4	Arterial	38,200	51,400	F
San Jacinto Valley	Ramona Expy/Mid County Pkwy	1 Mi. E of Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St* to Mid County Pkwy EB Offramp at Warren Rd	2.36	2	8,500	D or better	~~*36*~~	Freeway	9,900	18,400	D or better	7.08	~~*36*~~	Freeway	58,000	66,500	F
San Jacinto Valley	Stetson Ave	Santa Fe St to Girard St	0.50	2	15,500	F	4	Major	8,900	24,400	D or better	2.00	4	Major	15,100	30,600	E
Western Coachella Vlly.	Cook St	Varner Rd to 0.55 Mi. N of Varner Rd	0.55	4	11,300	D or better	4	Arterial	23,700	35,000	E	2.20	4	Arterial	19,900	31,200	D or better
Western Coachella Vlly.	Del Webb Blvd	Washington St to 38th Ave	0.75	4	12,100	D or better	2	Collector	2,400	14,500	F	1.50	2	Collector	2,500	14,600	F
Western Coachella Vlly.	Monroe St	0.5 Mi. N of 60th Ave to 58th Ave	0.50	2	22,000	F	4	Arterial	0	22,000	D or better	2.00	4	Arterial	15,500	37,500	F
Western Coachella Vlly.	Monroe St	0.5 Mi. N of 62nd Ave to 62nd Ave	0.51	2	9,900	D or better	4	Arterial	8,800	18,700	D or better	2.04	4	Arterial	23,500	33,400	E
Western Coachella Vlly.	Monroe St	0.51 Mi. N of 58th Ave to Airport Blvd	0.46	4	33,100	F	4	Arterial	0	33,100	D or better	1.84	4	Arterial	3,100	36,200	E
Western Coachella Vlly.	Monroe St	52nd Ave to 0.49 Mi. N of 54th Ave	0.49	4	21,600	D or better	4	Arterial	14,300	35,900	E	1.96	4	Arterial	10,400	32,000	D or better
Western Coachella Vlly.	Monroe St	54th Ave to 53rd Ave	0.49	4	36,000	F	4	Arterial	0	36,000	E	1.96	4	Arterial	(1,700)	34,300	E
Western Coachella Vlly.	Monroe St	Airport Blvd to 54th Ave	1.01	4	18,700	D or better	4	Arterial	18,100	36,800	E	4.04	4	Arterial	22,000	40,700	E
Western Coachella Vlly.	N Indian Canyon Dr	18th Ave to Pierson Blvd	3.02	2	15,100	F	4	Arterial	1,300	16,400	D or better	12.08	4	Arterial	29,500	44,600	F
Western Coachella Vlly.	N Indian Canyon Dr	SR-62 to 1.4 Mi. N of Mission Lakes Blvd	1.49	2	6,900	D or better	4	Arterial	1,000	7,900	D or better	5.96	4	Arterial	34,900	41,800	E
Western Coachella Vlly.	Palm Dr	Varner Rd to 20th Ave	0.82	4	21,600	D or better	4	Arterial	12,200	33,800	E	3.28	4	Arterial	27,300	48,900	F
Western Coachella Vlly.	Ramon Rd	0.34 Mi. W of Monterey Ave - Sierra Del Sol to Monterey Ave - Sierra Del Sol	0.34	4	22,300	D or better	4	Arterial	0	22,300	D or better	1.36	4	Arterial	16,400	38,700	F
Western Coachella Vlly.	Ramon Rd	I-10 EB Offramp at Ramon Rd to Bob Hope Dr	0.29	6	33,100	D or better	4	Arterial	20,100	53,200	F	1.16	4	Arterial	(300)	32,800	D or better
Western Coachella Vlly.	Ramon Rd	Los Alamos Rd - Vista Chino to Bob Hope Dr	0.74	4	25,800	D or better	6	Urban Arterial	17,600	43,400	D or better	4.44	6	Urban Arterial	30,100	55,900	E
Western Coachella Vlly.	Ramon Rd	Monterey Ave - Sierra Del Sol to Desert Moon Dr	0.49	3	11,500	D or better	4	Arterial	8,000	19,500	D or better	1.96	4	Arterial	27,800	39,300	E
Western Coachella Vlly.	Ramon Rd	Unknown to Los Alamos Rd - Vista Chino	0.50	6	24,200	D or better	6	Urban Arterial	9,800	34,000	D or better	3.00	6	Urban Arterial	27,400	51,600	E
Western Coachella Vlly.	Ramon Rd	Varner Rd to I-10 EB Offramp at Ramon Rd	0.25	4	19,200	D or better	4	Arterial	25,700	44,900	F	1.00	4	Arterial	6,200	25,400	D or better
Western Coachella Vlly.	Tamarack Rd	Rushmore Ave to Haugen-Lehmann Way	1.76	2	300	D or better	4	Secondary	900	1,200	D or better	7.04	4	Secondary	39,700	40,000	F
Western Coachella Vlly.	Varner Rd	0.48 Mi. NW of Bob Hope Dr - Rio Del Sol Rd to Bob Hope Dr - Rio Del Sol Rd	0.48	2	19,600	F	4	Arterial	0	19,600	D or better	1.92	4	Arterial	14,000	33,600	E
Western Coachella Vlly.	Varner Rd	0.67 Mi. W of Berkey Dr to Berkey Dr	0.67	2	7,100	D or better	4	Secondary	8,800	15,900	D or better	2.68	4	Secondary	16,500	23,600	E
Western Coachella Vlly.	Varner Rd	0.89 Mi. E of Da Vall Dr to Da Vall Dr	0.89	2	5,900	D or better	2	Secondary	10,700	16,600	F	1.78	4	Arterial	36,200	42,100	F
Western Coachella Vlly.	Washington St	Country Club Dr to Varner Rd	0.23	4	49,400	F	6	Urban Arterial	11,400	60,800	F	1.38	6	Urban Arterial	16,900	66,300	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Eastern Coachella Vlly.	Coachella Canal Rd	72nd Ave to The Bradshaw Trl	10.09	2	1,500	D or better	2	Collector	5,100	6,600	D or better	20.18	2	Collector	8,200	9,700	D or better
Eastern Coachella Vlly.	Cottonwood Springs Rd	I-10 WB Ramps at Cottonwood Springs Rd to 6.82 Mi. S of El Dorado Mine Rd	6.80	2	1,600	D or better	2	Collector	8,200	9,800	D or better	13.60	2	Collector	15,100	16,700	F
Eastern Coachella Vlly.	Jackson St	Airport Blvd to 0.46 Mi. S of Airport Blvd	0.47	2	1,600	D or better	4	Arterial	12,600	14,200	D or better	1.88	4	Arterial	31,100	32,700	D or better
Eastern Coachella Vlly.	Johnson St	60th Ave to 62nd Ave	1.00	2	12,600	E	2	Collector	0	12,600	E	2.00	2	Collector	(12,600)	0	D or better
Eastern Coachella Vlly.	The Bradshaw Trl	Coachella Canal Rd to Unknown	3.33	2	0	D or better	2	Collector	3,800	3,800	D or better	6.66	2	Collector	5,800	5,800	D or better
Desert Center	Kaiser Rd	SR-177 to 11.91 Mi. N of SR-177	11.91	2	1,500	D or better	4	Major	15,600	17,100	D or better	47.64	4	Major	41,700	43,200	F
E. County - Desert Area	Chuckwalla Valley Rd	I-10 EB Ramps at Chuckwalla Valley Rd to I-10 EB Ramps at Ford Dry Lake Rd/Chuckwalla Valley Rd	16.24	2	1,300	D or better	2	Collector	15,100	16,400	F	32.48	2	Collector	18,600	19,900	F
E. County - Desert Area	Cottonwood Springs Rd	6.8 Mi. N of I-10 WB Ramps at Cottonwood Springs Rd to El Dorado Mine Rd	6.99	2	1,600	D or better	2	Collector	8,200	9,800	D or better	13.98	2	Collector	15,100	16,700	F
E. County - Desert Area	El Dorado Mine Rd	Cottonwood Springs Rd to Loop Rd	22.73	2	1,500	D or better	2	Collector	4,200	5,700	D or better	45.46	2	Collector	24,100	25,600	F
E. County - Desert Area	Red Cloud Mine Rd	2.47 Mi. S of I-10 EB Offramp at Red Cloud Rd to I-10 EB Offramp at Red Cloud Rd	2.47	2	100	D or better	2	Collector	7,000	7,100	D or better	4.94	2	Collector	6,200	6,300	D or better

Source: Riverside County staff.

Table 4.18-T Matrix for Comparing Scenarios and Impacts (City Roads)

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					*Lane* Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Cities of Riverside & Norco	14th St	SR-91 EB Ramps at 14th St to Victoria Ave	0.44	4	25,700	D or better	4	Existing	2,300	28,000	E	1.76	4	Arterial	19,500	45,200	F
Cities of Riverside & Norco	14th St	Victoria Ave to Martin Luther King Blvd	0.55	4	23,900	D or better	4	Existing	(10,200)	13,700	D or better	2.20	4	Secondary	16,700	40,600	F
Cities of Riverside & Norco	4th St	Hamner Ave to Hillside Ave	1.27	2	1,900	D or better	2	Existing	(200)	1,700	D or better	2.54	2	Collector	14,400	16,300	F
Cities of Riverside & Norco	Alessandro Blvd	Arlington Ave - Chicago Ave to 0.22 Mi. E of Central Ave	0.66	4	23,500	D or better	4	Existing	4,500	28,000	E	2.64	4	Arterial	17,100	40,600	F
Cities of Riverside & Norco	Alessandro Blvd	Central Ave to 0.22 Mi. E of Central Ave	0.60	4	23,500	D or better	4	Existing	(13,100)	10,400	D or better	2.40	4	Major	16,700	40,200	F
Cities of Riverside & Norco	Alessandro Blvd	Trautwein Rd to Arlington Ave - Chicago Ave	2.21	4	44,200	F	4	Existing	7,500	51,700	F	8.84	6	Urban Arterial	34,700	78,900	F
Cities of Riverside & Norco	Alessandro Blvd	Trautwein Rd to Brown St	3.63	4	38,400	F	4	Existing	(11,200)	27,200	E	14.52	6	Urban Arterial	47,600	86,000	F
Cities of Riverside & Norco	Arlington Ave	Adams St to California Ave - Streeter Ave	0.92	4	21,500	D or better	4	Existing	(1,100)	20,400	D or better	3.68	4	Arterial	13,300	34,800	E
Cities of Riverside & Norco	Arlington Ave	Madison St to California Ave	0.31	4	31,800	D or better	4	Existing	(400)	31,400	F	1.24	6	Urban Arterial	16,600	48,400	D or better
Cities of Riverside & Norco	Arlington Ave	Monroe St to Adams St	0.62	4	20,000	D or better	4	Existing	(600)	19,400	D or better	2.48	4	Arterial	23,000	43,000	E
Cities of Riverside & Norco	Arlington Ave	North Dr to Jurupa Ave	0.66	4	700	D or better	4	Existing	0	700	D or better	2.64	4	Major	37,700	38,400	F
Cities of Riverside & Norco	Arlington Ave	Riverside Ave - SR-91 WB Onramp at Arlington Ave to Alessandro Blvd	2.07	4	38,700	F	4	Existing	4,400	43,100	F	8.28	6	Urban Arterial	34,700	73,400	F
Cities of Riverside & Norco	Arlington Ave	Van Buren Blvd to 0.28 Mi. E of Rutland Ave	0.58	4	30,600	D or better	4	Existing	(1,100)	29,500	E	2.32	6	Urban Arterial	(400)	30,200	D or better
Cities of Riverside & Norco	Arlington Ave	Van Buren Blvd to Monroe St	0.48	4	29,700	E	4	Existing	(500)	29,200	E	1.92	6	Urban Arterial	25,700	55,400	E
Cities of Riverside & Norco	Buena Vista Ave	Mission Blvd to Redwood Dr	0.52	4	27,100	E	4	Existing	3,700	30,800	F	2.08	4	Major	26,900	54,000	F
Cities of Riverside & Norco	Canyon Crest Dr	Country Club Dr to Central Ave	0.59	2	15,600	F	2	Existing	700	16,300	F	1.18	4	Arterial	26,200	41,800	E
Cities of Riverside & Norco	Canyon Crest Dr	Via Vista Dr to Country Club Dr	0.94	2	12,600	E	2	Existing	1,300	13,900	F	1.88	4	Arterial	22,500	35,100	E
Cities of Riverside & Norco	Central Ave	Canyon Crest Dr to Lochmoor Dr	0.78	4	23,100	D or better	4	Existing	4,200	27,300	E	3.12	4	Arterial	33,700	56,800	F
Cities of Riverside & Norco	Central Ave	Chicago Ave to El Cerrito Dr	0.78	4	23,700	D or better	4	Existing	3,800	27,500	E	3.12	4	Arterial	18,200	41,900	E
Cities of Riverside & Norco	Central Ave	Victoria Ave to Alessandro Blvd	0.44	4	24,300	D or better	4	Existing	4,400	28,700	E	1.76	4	Major	15,800	40,100	F
Cities of Riverside & Norco	Chicago Ave	0.24 Mi. N of 3rd St to Spruce St	0.26	4	20,700	D or better	4	Existing	1,200	21,900	D or better	1.04	4	Arterial	18,500	39,200	E
Cities of Riverside & Norco	Chicago Ave	0.61 Mi. S of Martin Luther King Blvd to Martin Luther King Blvd	0.61	4	18,500	D or better	4	Existing	1,300	19,800	D or better	2.44	4	Arterial	15,200	33,700	E
Cities of Riverside & Norco	Chicago Ave	3rd St to 0.24 Mi. N of 3rd St	0.25	4	20,300	D or better	4	Existing	1,200	21,500	D or better	1.00	4	Arterial	17,900	38,200	F
Cities of Riverside & Norco	Chicago Ave	Alessandro Blvd to Central Ave	1.04	4	36,200	F	4	Existing	4,400	40,600	F	4.16	4	Arterial	22,900	59,100	F
Cities of Riverside & Norco	Chicago Ave	Marlborough Ave to Columbia Ave	0.25	4	17,600	D or better	4	Existing	2,300	19,900	D or better	1.00	4	Arterial	26,000	43,600	F
Cities of Riverside & Norco	Chicago Ave	Spruce St to Marlborough Ave	0.50	4	16,700	D or better	4	Existing	1,900	18,600	D or better	2.00	4	Arterial	20,000	36,700	E
Cities of Riverside & Norco	Collett Ave	0.19 Mi. W of La Sierra Ave to 0.24 Mi. W of Polk St	0.46	4	10,300	D or better	4	Existing	(100)	10,200	D or better	1.84	4	Secondary	13,800	24,100	E
Cities of Riverside & Norco	Collett Ave	Pierce St to 0.14 Mi. E of Golden Ave	0.86	2	8,800	D or better	2	Existing	0	8,800	D or better	1.72	4	Secondary	16,900	25,700	E
Cities of Riverside & Norco	Columbia Ave	Main St to La Cadena Dr E	0.84	4	13,500	D or better	4	Existing	1,500	15,000	D or better	3.36	4	Secondary	20,800	34,300	F
Cities of Riverside & Norco	Country Club Dr	Chicago Ave to Canyon Crest Dr	0.91	2	4,200	D or better	2	Existing	0	4,200	D or better	1.82	4	Major	28,200	32,400	E
Cities of Riverside & Norco	Hidden Valley Pkwy	Hamner Ave to I-15 NB Offramp at Hidden Valley Pkwy	0.29	4	25,800	D or better	4	Existing	400	26,200	D or better	1.16	4	Secondary	11,900	37,700	F
Cities of Riverside & Norco	Hillside Ave	3rd St to 4th St	0.57	2	2,800	D or better	2	Existing	(100)	2,700	D or better	1.14	2	Collector	13,100	15,900	F
Cities of Riverside & Norco	Indiana Ave	0.26 Mi. SW of Buchanan St to Fillmore St	1.36	2	7,700	D or better	2	Existing	1,100	8,800	D or better	2.72	4	Secondary	20,600	28,300	F
Cities of Riverside & Norco	Indiana Ave	Brockton Ave - Mary St to 0.06 Mi. SW of Arlington Ave	0.40	4	11,700	D or better	4	Existing	1,100	12,800	D or better	1.60	4	Secondary	12,000	23,700	E
Cities of Riverside & Norco	Indiana Ave	Fillmore St to La Sierra Ave	0.52	4	10,300	D or better	4	Existing	1,700	12,000	D or better	2.08	4	Secondary	16,000	26,300	F
Cities of Riverside & Norco	Iowa Ave	Citrus St to 0.33 Mi. N of Citrus St	0.33	4	23,500	D or better	4	Existing	3,400	26,900	E	1.32	4	Arterial	38,700	62,200	F
Cities of Riverside & Norco	Iowa Ave	Spruce St to Citrus St	1.25	4	23,100	D or better	4	Existing	2,800	25,900	D or better	5.00	6	Urban Arterial	43,500	66,600	F
Cities of Riverside & Norco	Jurupa Ave	0.05 Mi. E of Van Buren Blvd to 0.36 Mi. W of Jasmine St	0.79	4	16,800	D or better	4	Existing	500	17,300	D or better	3.16	4	Arterial	17,100	33,900	E
Cities of Riverside & Norco	Kansas Ave	0.25 Mi. N of 3rd St to Spruce St	0.25	4	6,800	D or better	4	Existing	400	7,200	D or better	1.00	2	Collector	4,900	11,700	E
Cities of Riverside & Norco	La Sierra Ave	Indiana Ave to SR-91 WB Ramps at La Sierra Ave	0.30	4	24,400	D or better	4	Existing	3,700	28,100	E	1.20	4	Arterial	18,200	42,600	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Cities of Riverside & Norco	La Sierra Ave	Victoria Ave to Indiana Ave	0.78	2	13,800	F	2	Existing	4,000	17,800	F	1.56	4	Arterial	33,900	47,700	F
Cities of Riverside & Norco	Lochmoor Dr	Fair Isle Dr to Central Ave	0.71	2	8,000	D or better	2	Existing	3,000	11,000	D or better	1.42	2	Collector	11,000	19,000	F
Cities of Riverside & Norco	Madison St	0.29 Mi. N of Lincoln Ave to SR-91 EB Ramps at Madison St	0.25	4	13,400	D or better	4	Existing	(600)	12,800	D or better	1.00	4	Secondary	10,600	24,000	E
Cities of Riverside & Norco	Magnolia Ave	0.19 Mi. N of Jurupa Ave to Jurupa Ave	0.26	4	22,100	D or better	4	Existing	800	22,900	D or better	1.04	4	Major	8,600	30,700	E
Cities of Riverside & Norco	Magnolia Ave	14th St to Larchwood Pl	0.59	4	27,000	D or better	4	Existing	1,100	28,100	E	2.36	4	Major	800	27,800	D or better
Cities of Riverside & Norco	Magnolia Ave	La Sierra Ave to Polk St	0.51	3	15,500	D or better	3	Existing	1,000	16,500	D or better	1.53	2	Arterial	3,500	19,000	F
Cities of Riverside & Norco	Magnolia Ave	La Sierra Ave to Polk St	0.51	3	18,100	D or better	3	Existing	1,000	19,100	D or better	1.53	2	Arterial	400	18,500	F
Cities of Riverside & Norco	Magnolia Ave	Pierce St to Buchanan St	0.51	2	13,100	D or better	2	Existing	600	13,700	E	1.02	2	Arterial	1,800	14,900	D or better
Cities of Riverside & Norco	Magnolia Ave	SR-91 EB Offramp at Magnolia Ave to La Sierra Ave	0.78	2	12,100	D or better	2	Existing	1,100	13,200	D or better	1.56	2	Arterial	7,700	19,800	F
Cities of Riverside & Norco	Magnolia Ave	SR-91 WB Offramp at Magnolia Ave to La Sierra Ave	0.75	2	13,500	E	2	Existing	1,000	14,500	E	1.50	2	Arterial	5,700	19,200	F
Cities of Riverside & Norco	Magnolia Ave	Unknown to 0.13 Mi. E of Harrison St	0.29	6	44,100	D or better	6	Existing	1,800	45,900	D or better	1.74	6	Urban Arterial	7,100	51,200	E
Cities of Riverside & Norco	Main St	Strong St to Spruce St	0.45	4	28,400	E	4	Existing	700	29,100	F	1.80	4	Secondary	11,600	40,000	F
Cities of Riverside & Norco	Main St	Strong St to W Center St	1.28	4	36,300	F	4	Existing	2,100	38,400	F	5.12	4	Major	14,600	50,900	F
Cities of Riverside & Norco	Martin Luther King Blvd	0.25 Mi. E of Kansas Ave to Chicago Ave	0.25	4	23,500	D or better	4	Existing	3,900	27,400	E	1.00	4	Arterial	19,800	43,300	F
Cities of Riverside & Norco	Martin Luther King Blvd	0.28 Mi. W of Kansas Ave to 0.25 Mi. E of Kansas Ave	0.53	4	23,200	D or better	4	Existing	3,600	26,800	D or better	2.12	4	Arterial	18,100	41,300	F
Cities of Riverside & Norco	Martin Luther King Blvd	Chicago Ave to Iowa Ave	0.49	4	23,100	D or better	4	Existing	3,900	27,000	E	1.96	4	Arterial	17,600	40,700	F
Cities of Riverside & Norco	Martin Luther King Blvd	Iowa Ave to 0.06 Mi. W of I-215 SB Ramps at Martin Luther King Blvd	0.56	4	27,400	E	4	Existing	4,600	32,000	F	2.24	4	Arterial	30,800	58,200	F
Cities of Riverside & Norco	Mary St	Lincoln Ave to Indiana Ave	0.55	4	14,600	D or better	4	Existing	1,100	15,700	D or better	2.20	4	Secondary	13,900	28,500	F
Cities of Riverside & Norco	Mission Inn Ave	Redwood Dr to Brockton Ave	0.33	4	11,900	D or better	4	Existing	1,400	13,300	D or better	1.32	4	Major	31,400	43,300	F
Cities of Riverside & Norco	Riverwalk Pkwy	SR-91 WB Onramp at Pierce St/Riverwalk Pkwy to Pierce St	0.29	4	30,400	F	4	Existing	200	30,600	F	1.16	4	Arterial	4,300	34,700	E
Cities of Riverside & Norco	S Campus Dr	Canyon Crest Dr to Big Springs Rd	0.77	2	8,200	D or better	2	Existing	(800)	7,400	D or better	1.54	2	Collector	4,500	12,700	E
Cities of Riverside & Norco	Sycamore Canyon Blvd	0.54 Mi. S of Eastridge Ave to Eastridge Ave	1.10	2	3,400	D or better	2	Existing	700	4,100	D or better	2.20	4	Arterial	32,300	35,700	E
Cities of Riverside & Norco	Sycamore Canyon Blvd	Eastridge Ave to Fair Isle Dr	1.16	2	3,200	D or better	2	Existing	2,300	5,500	D or better	2.32	4	Arterial	38,000	41,200	E
Cities of Riverside & Norco	Trautwein Rd	0.2 Mi. N of Mission Grove Pkwy S to Alessandro Blvd	0.58	4	15,500	D or better	4	Existing	2,100	17,600	D or better	2.32	4	Arterial	22,100	37,600	F
Cities of Riverside & Norco	Trautwein Rd	Orange Terrace Pkwy to 0.2 Mi. N of Mission Grove Pkwy S	1.34	4	26,200	D or better	4	Existing	4,700	30,900	F	5.36	4	Arterial	20,700	46,900	F
Cities of Riverside & Norco	University Ave	Park Ave to Kansas Ave	0.44	4	16,500	D or better	4	Existing	2,100	18,600	D or better	1.76	4	Arterial	17,400	33,900	E
Cities of Riverside & Norco	Van Buren Blvd	0.48 Mi. SE of A St to 0.11 Mi. N of SR-91 WB Ramps at Van Buren Blvd	2.69	4	40,300	F	4	Existing	8,000	48,300	F	10.76	6	Urban Arterial	34,700	75,000	F
Cities of Riverside & Norco	Van Buren Blvd	California Ave to 0.19 Mi. N of Challen Ave	0.41	4	25,800	D or better	4	Existing	700	26,500	D or better	1.64	6	Urban Arterial	26,500	52,300	E
Cities of Riverside & Norco	Van Buren Blvd	California Ave to Magnolia Ave	0.52	4	28,600	D or better	4	Existing	100	28,700	E	2.08	6	Urban Arterial	16,700	45,300	D or better
Cities of Riverside & Norco	Van Buren Blvd	Cypress Ave - Jackson St to Jurupa Ave	1.28	4	50,500	F	4	Existing	1,600	52,100	F	5.12	6	Urban Arterial	24,300	74,800	F
Cities of Riverside & Norco	Van Buren Blvd	Cypress Ave to 0.22 Mi. N of Challen Ave	0.74	4	26,900	D or better	4	Existing	900	27,800	E	2.96	6	Urban Arterial	20,700	47,600	D or better
Cities of Riverside & Norco	Van Buren Blvd	Wood Rd to Barton St	1.02	4	27,600	E	4	Existing	7,000	34,600	F	4.08	6	Urban Arterial	25,600	53,200	E
Cities of Riverside & Norco	Victoria Ave	0.67 Mi. S of Cridge St to 14th St	1.04	2	11,200	D or better	2	Existing	500	11,700	E	2.08	2	Collector	4,000	15,200	F
Cities of Riverside & Norco	Victoria Ave	Madison St to Washington St	0.52	2	2,500	D or better	2	Existing	1,100	3,600	D or better	1.04	4	Major	28,600	31,100	E
Cities of Riverside & Norco	W Blaine St	Iowa Ave to Canyon Crest Dr	0.49	4	14,500	D or better	4	Existing	1,100	15,600	D or better	1.96	4	Secondary	14,300	28,800	F
Cities of Riverside & Norco	Washington St	Bradley St to Hermosa Dr	0.50	2	11,100	D or better	2	Existing	1,800	12,900	E	1.00	4	Arterial	20,700	31,800	D or better
Cities of Riverside & Norco	Washington St	Muirfield Rd to Victoria Ave	0.80	2	8,700	D or better	2	Existing	1,700	10,400	D or better	1.60	4	Arterial	41,300	50,000	F
Cities of Riverside & Norco	Watkins Dr	0.28 Mi. N of I-215 NB Onramp at Central Ave/Watkins Dr to W Linden St	1.17	2	11,300	D or better	2	Existing	1,000	12,300	E	2.34	4	Secondary	24,000	35,300	F
Cities of Riverside & Norco	Watkins Dr	W Linden St to Spruce St	1.15	4	8,100	D or better	4	Existing	1,000	9,100	D or better	4.60	4	Secondary	22,100	30,200	F
Jurupa	Agua Mansa Rd	Market St to Hall Ave	0.97	2	10,600	D or better	2	Existing	(100)	10,500	D or better	1.94	4	Major	24,600	35,200	F
Jurupa	Armstrong Rd	Valley Way to 1.53 Mi. N of Sierra Ave	1.53	2	12,200	E	2	Existing	0	12,200	E	3.06	4	Major	29,300	41,500	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					*Lane* Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Jurupa	Bellegrave Ave	Hamner Ave to Pats Ranch Rd	0.77	4	10,500	D or better	4	Existing	1,700	12,200	D or better	3.08	4	Major	24,900	35,400	F
Jurupa	Bellegrave Ave	Pats Ranch Rd to Rutile St	3.17	2	10,900	D or better	4	Existing	400	11,300	D or better	12.68	4	Major	24,100	35,000	F
Jurupa	Cantu-Galleano Ranch Rd	Hamner Ave to Wineville Ave	0.99	4	22,600	D or better	4	Existing	1,400	24,000	D or better	3.96	6	Urban Arterial	47,300	69,900	F
Jurupa	Country Village Rd	Granite Hill Dr to 0.68 Mi. N of Granite Hill Dr	0.67	4	20,000	D or better	4	Existing	100	20,100	D or better	2.68	6	Urban Arterial	33,900	53,900	E
Jurupa	Etiwanda Ave	0.22 Mi. S of Riverside Dr to 0.27 Mi. N of SR-60 WB Offramp at Etiwanda Ave	0.79	4	28,000	E	4	Existing	300	28,300	E	3.16	6	Urban Arterial	37,600	65,600	F
Jurupa	Etiwanda Ave	Bellegrave Ave to Cantu-Galleano Ranch Rd	0.31	4	17,700	D or better	4	Existing	(1,100)	16,600	D or better	1.24	4	Arterial	18,700	36,400	E
Jurupa	Limonite Ave	0.3 Mi. W of Felspar St to Van Buren Blvd SB Onramp at Limonite Ave	0.64	4	23,500	D or better	4	Existing	2,000	25,500	D or better	2.56	6	Urban Arterial	37,600	61,100	F
Jurupa	Limonite Ave	Pacific Ave to Riverview Dr	0.28	4	17,600	D or better	4	Existing	1,700	19,300	D or better	1.12	4	Major	17,400	35,000	F
Jurupa	Limonite Ave	Wineville Ave to 0.1 Mi. E of Beach St	2.71	2	18,400	F	2	Existing	900	19,300	F	5.42	6	Urban Arterial	43,500	61,900	F
Jurupa	Market St	0.25 Mi. NW of Rivera St to Hall Ave	0.75	2	14,000	F	2	Existing	1,800	15,800	F	1.50	4	Arterial	35,100	49,100	F
Jurupa	Mission Blvd	0.35 Mi. W of Valley Way to Valley Way	0.34	4	13,400	D or better	4	Existing	2,400	15,800	D or better	1.36	4	Arterial	21,500	34,900	E
Jurupa	Mission Blvd	Bellegrave Ave to Agate St	0.77	4	16,500	D or better	4	Existing	2,100	18,600	D or better	3.08	4	Arterial	19,200	35,700	E
Jurupa	Mission Blvd	Pacific Ave to Riverview Dr	0.56	4	14,400	D or better	4	Existing	2,200	16,600	D or better	2.24	4	Arterial	26,200	40,600	E
Jurupa	Mission Blvd	Pyrite St to 0.35 Mi. W of Valley Way	1.24	4	14,000	D or better	4	Existing	2,100	16,100	D or better	4.96	4	Arterial	21,200	35,200	E
Jurupa	Mission Blvd	Riverview Dr to Rubidoux Blvd	0.36	4	35,300	F	4	Existing	3,500	38,800	F	1.44	6	Urban Arterial	32,000	67,300	F
Jurupa	Mission Blvd	Rubidoux Blvd to Buena Vista Ave	1.00	4	23,000	D or better	4	Existing	3,000	26,000	D or better	4.00	4	Arterial	24,500	47,500	F
Jurupa	Rubidoux Blvd	34th St to 30th St - SR-60 EB Offramp at Rubidoux Blvd	0.28	4	22,400	D or better	4	Existing	800	23,200	D or better	1.12	4	Arterial	11,000	33,400	E
Jurupa	Sierra Ave	0.58 Mi. NW of Armstrong Rd to 0.93 Mi. N of Armstrong Rd	0.44	4	13,300	D or better	4	Existing	1,000	14,300	D or better	1.76	4	Arterial	26,700	40,000	E
Jurupa	Sierra Ave	Armstrong Rd to 0.58 Mi. NW of Armstrong Rd	0.58	4	12,500	D or better	4	Existing	1,100	13,600	D or better	2.32	4	Arterial	26,200	38,700	F
Jurupa	Sierra Ave	Pacific Ave to Armstrong Rd	0.65	4	2,500	D or better	4	Existing	100	2,600	D or better	2.60	4	Secondary	40,300	42,800	F
Jurupa	Van Buren Blvd	Mission Blvd to Van Buren Blvd SB Onramp at Limonite Ave	4.37	4	40,000	D or better	4	Existing	32,500	72,500	F	17.48	6	Expressway	29,600	69,600	D or better
Jurupa	Van Buren Blvd	Van Buren Blvd SB Onramp at Limonite Ave to Van Buren Blvd SB Onramp at Limonite Ave	0.80	4	52,300	F	4	Existing	3,000	55,300	F	3.20	6	Expressway	58,600	110,900	F
Jurupa	Wineville Ave	0.49 Mi. S of Riverside Dr to Riverside Dr	0.48	4	2,400	D or better	4	Existing	0	2,400	D or better	1.92	4	Secondary	26,700	29,100	F
Eastvale	Hellman Ave	Schleisman Rd to Limonite Ave	0.60	2	7,500	D or better	2	Existing	100	7,600	D or better	1.20	4	Secondary	21,700	29,200	F
Eastvale	Limonite Ave	Archibald Ave to Hamner Ave	2.00	2	7,600	D or better	2	Existing	700	8,300	D or better	4.00	6	Urban Arterial	53,700	61,300	F
Eastvale	Limonite Ave	Hamner Ave to I-15 SB Offramp at Limonite Ave	0.47	4	22,800	D or better	4	Existing	600	23,400	D or better	1.88	6	Urban Arterial	52,100	74,900	F
Eastvale	Limonite Ave	I-15 SB Offramp at Limonite Ave to Wineville Ave	0.54	2	21,100	F	2	Existing	200	21,300	F	1.08	6	Urban Arterial	61,000	82,100	F
Eastvale	Schleisman Rd	0.78 Mi. E of Hellman Ave to Harrison Ave	0.76	2	8,900	D or better	2	Existing	700	9,600	D or better	1.52	6	Urban Arterial	49,900	58,800	F
Eastvale	Schleisman Rd	Harrison Ave to Sumner Ave	0.50	4	7,200	D or better	4	Existing	1,000	8,200	D or better	2.00	6	Urban Arterial	54,100	61,300	F
Eastvale	Schleisman Rd	Sumner Ave to Cleveland Ave	0.50	2	6,600	D or better	2	Existing	1,100	7,700	D or better	1.00	6	Urban Arterial	53,400	60,000	F
Temescal Canyon	Auburndale St	W Rincon St to River Rd	0.75	2	11,600	E	2	Existing	(100)	11,500	D or better	1.50	2	Collector	3,600	15,200	F
Temescal Canyon	Corydon St	W Rincon St to River Rd	0.97	2	12,500	E	2	Existing	200	12,700	E	1.94	2	Collector	2,100	14,600	F
Temescal Canyon	E 6th St	E Grand Blvd to 0.09 Mi. W of Radio Rd	0.80	4	25,900	D or better	4	Existing	1,400	27,300	E	3.20	4	Major	15,100	41,000	F
Temescal Canyon	E Foothill Pkwy	California Ave to 0.12 Mi. W of Bedford Canyon Rd	0.69	2	8,200	D or better	2	Existing	3,900	12,100	E	1.38	4	Secondary	31,000	39,200	F
Temescal Canyon	E Foothill Pkwy	S Main St to California Ave	1.93	4	7,600	D or better	4	Existing	1,400	9,000	D or better	7.72	4	Secondary	24,600	32,200	F
Temescal Canyon	E Ontario Ave	0.16 Mi. SE of I-15 NB Ramps at Ontario Ave to I-15 SB Ramps at Ontario Ave	0.28	4	19,800	D or better	4	Existing	8,500	28,300	E	1.12	4	Arterial	40,300	60,100	F
Temescal Canyon	E Ontario Ave	Kellogg Ave to I-15 SB Ramps at Ontario Ave	1.35	4	24,200	D or better	4	Existing	6,000	30,200	F	5.40	6	Urban Arterial	36,400	60,600	F
Temescal Canyon	E Ontario Ave	Kellogg Ave to Magnolia Ave	0.32	6	24,100	D or better	6	Existing	3,800	27,900	D or better	1.92	6	Urban Arterial	27,200	51,300	E
Temescal Canyon	E Parkridge Ave	E Harrison St to Cresta Rd	0.25	4	18,300	D or better	4	Existing	(200)	18,100	D or better	1.00	4	Secondary	6,000	24,300	E

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Temescal Canyon	Green River Rd	Dominguez Ranch Rd to SR-91 WB Offramp at Green River Rd	0.52	2	23,400	D or better	2	Existing	100	23,500	F	1.04	6	Urban Arterial	23,400	46,800	D or better
Temescal Canyon	Green River Rd	Palisades Dr to W Foothill Pkwy	2.01	4	16,600	D or better	4	Existing	500	17,100	D or better	8.04	4	Major	22,100	38,700	F
Temescal Canyon	Hidden Valley Pkwy	E Parkridge Ave - Hillside Ave to Norco Hills Rd	0.32	4	14,500	D or better	4	Existing	500	15,000	D or better	1.28	4	Secondary	11,200	25,700	E
Temescal Canyon	Magnolia Ave	Leeson Ln to Compton Ave	0.41	4	16,200	D or better	4	Existing	2,300	18,500	D or better	1.64	6	Urban Arterial	41,800	58,000	F
Temescal Canyon	Mc Kinley St	0.26 Mi. SE of Ranch Vista to Ranch Vista	0.25	4	13,400	D or better	4	Existing	500	13,900	D or better	1.00	4	Major	19,200	32,600	E
Temescal Canyon	Mc Kinley St	Magnolia Ave to SR-91 WB Onramp at Mc Kinley St	0.43	4	20,700	D or better	4	Existing	500	21,200	D or better	1.72	4	Arterial	18,600	39,300	F
Temescal Canyon	N Main St	E Harrison St to River Rd	0.26	6	14,600	D or better	6	Existing	(900)	13,700	D or better	1.56	6	Urban Arterial	42,400	57,000	F
Temescal Canyon	Pomona Rincon Rd	Auto Center Dr to Maple St	0.57	2	15,100	F	2	Existing	1,300	16,400	F	1.14	2	Collector	9,700	24,800	F
Temescal Canyon	Promenade Ave	Collett Ave to Buchanan St	1.38	4	9,700	D or better	4	Existing	900	10,600	D or better	5.52	4	Secondary	16,000	25,700	E
Temescal Canyon	Railroad St	0.07 Mi. W of N Cota St to Sherman Ave	0.81	2	13,700	D or better	2	Existing	(100)	13,600	F	1.62	4	Secondary	5,300	19,000	D or better
Temescal Canyon	Railroad St	Auto Center Dr to N Smith Ave	1.47	4	13,100	D or better	4	Existing	1,100	14,200	D or better	5.88	4	Secondary	17,900	31,000	F
Temescal Canyon	River Rd	Auburndale St to Corydon St	1.00	4	16,600	D or better	4	Existing	800	17,400	D or better	4.00	4	Major	23,100	39,700	F
Temescal Canyon	S Lincoln Ave	W Ontario Ave to 10th St	1.04	4	22,900	D or better	4	Existing	700	23,600	D or better	4.16	4	Secondary	9,200	32,100	F
Temescal Canyon	S Smith Ave	Border Ave - Sherman Ave to W 6th St	0.43	4	18,900	D or better	4	Existing	300	19,200	D or better	1.72	4	Secondary	10,900	29,800	F
Temescal Canyon	W 6th St	Smith Ave to Merrill St	1.33	4	33,800	F	4	Existing	1,900	35,700	F	5.32	4	Major	7,000	40,800	F
Temescal Canyon	W 6th St	SR-91 EB Ramps at 6th St/Maple St to Smith Ave	0.51	4	41,100	F	4	Existing	1,900	43,000	F	2.04	6	Urban Arterial	20,200	61,300	F
Temescal Canyon	W Foothill Pkwy	Lincoln Ave to S Main St	0.96	4	4,000	D or better	4	Existing	400	4,400	D or better	3.84	4	Secondary	26,000	30,000	F
Temescal Canyon	W Ontario Ave	Kirkwood Dr to S Lincoln Ave	1.78	2	16,800	D or better	2	Existing	(400)	16,400	F	3.56	4	Collector	(6,600)	10,200	D or better
Temescal Canyon	W Ontario Ave	S Lincoln Ave to S Main St	0.97	4	27,500	E	4	Existing	1,200	28,700	E	3.88	4	Major	18,100	45,600	F
Temescal Canyon	W Rincon St	Corydon St to Auburndale St	1.01	2	10,500	D or better	2	Existing	0	10,500	D or better	2.02	2	Collector	2,300	12,800	E
Elsinore	Bundy Canyon Rd	1.32 Mi. E of I-15 NB Offramp at Bundy Canyon Rd to Orange St	1.53	2	8,600	D or better	2	Existing	3,400	12,000	E	3.06	6	Urban Arterial	38,900	47,500	D or better
Elsinore	Clinton Keith Rd	0.22 Mi. N of Grand Ave to Palomar St	0.28	4	13,600	D or better	4	Existing	0	13,600	D or better	1.12	4	Major	18,800	32,400	E
Elsinore	Clinton Keith Rd	I-15 SB Ramps at Clinton Keith Rd to Inland Valley Dr	0.56	2	17,500	F	2	Existing	1,700	19,200	F	1.12	6	Urban Arterial	44,700	62,200	F
Elsinore	Clinton Keith Rd	Salida Del Sol - Yamas Dr to 0.24 Mi. W of La Estrella St - Nutmeg St	1.39	2	13,600	F	2	Existing	2,500	16,100	F	2.78	6	Urban Arterial	38,500	52,100	E
Elsinore	E Lakeshore Dr	0.47 Mi. W of Ave 7 to Diamond Dr	1.17	2	7,700	D or better	2	Existing	2,300	10,000	D or better	2.34	4	Secondary	21,700	29,400	F
Elsinore	Lake St	Nicholas Rd to Grand Ave	1.37	2	14,500	D or better	2	Existing	1,700	16,200	F	2.74	6	Urban Arterial	28,200	42,700	D or better
Elsinore	Lake St	Nicholas Rd to Temescal Canyon Rd	1.16	2	15,600	F	2	Existing	2,200	17,800	F	2.32	6	Urban Arterial	52,000	67,600	F
Elsinore	Lakeshore Dr	Riverside Dr to Adam Ave	1.29	2	9,300	D or better	2	Existing	1,800	11,100	D or better	2.58	4	Secondary	17,500	26,800	F
Elsinore	Mission Trl	Corydon Rd to Malaga Rd	1.38	4	11,800	D or better	4	Existing	(200)	11,600	D or better	5.52	4	Arterial	31,400	43,200	E
Elsinore	Mission Trl	Malaga Rd to Diamond Dr	0.56	4	9,700	D or better	4	Existing	(200)	9,500	D or better	2.24	4	Arterial	27,000	36,700	E
Elsinore	Nichols Rd	I-15 NB Ramps at Nichols Rd to El Toro Rd	0.70	2	5,700	D or better	2	Existing	4,600	10,300	D or better	1.40	6	Urban Arterial	45,300	51,000	E
Elsinore	Palomar St	Clinton Keith Rd to 0.76 Mi. NW of Clinton Keith Rd	0.76	2	11,600	D or better	2	Existing	600	12,200	E	1.52	4	Arterial	16,500	28,100	D or better
Elsinore	Railroad Canyon Rd	0.19 Mi. E of Canyon Lake Dr N to Goetz Rd	0.53	2	22,000	F	2	Existing	6,700	28,700	F	1.06	4	Arterial	22,100	44,100	F
Elsinore	Railroad Canyon Rd	I-15 NB Ramps at Diamond Dr/Railroad Canyon Rd to 0.19 Mi. E of Canyon Lake Dr N	3.70	4	25,200	D or better	4	Existing	8,400	33,600	F	14.80	4	Arterial	27,900	53,100	F
Elsinore	Rosetta Canyon Rd	SR-74 to Elsinore Hills Rd	0.97	2	1,600	D or better	2	Existing	(300)	1,300	D or better	1.94	4	Secondary	24,100	25,700	E
Elsinore	Strickland Ave	0.51 Mi. E of Riverside Dr to Chaney St	0.65	2	1,000	D or better	2	Existing	(100)	900	D or better	1.30	2	Collector	11,600	12,600	E
Elsinore	Summerhill Dr	Railroad Canyon Rd to La Strada	2.13	2	13,300	F	2	Existing	(300)	13,000	F	4.26	4	Major	21,300	34,600	F
Elsinore	Vacation Dr	Greenwald Ave to 0.76 Mi. N of Canyon Lake Dr N	1.07	2	3,600	D or better	2	Existing	2,500	6,100	D or better	2.14	2	Collector	8,300	11,900	E
Lk. Mathews / Woodcrest	Van Buren Blvd	Wood Rd to 0.5 Mi. W of Wood Rd	0.50	4	31,800	D or better	4	Existing	6,400	38,200	F	2.00	6	Urban Arterial	17,200	49,000	D or better
Mead Valley	Case Rd	Goetz Rd to Mapes Rd	1.96	2	9,200	D or better	2	Existing	5,900	15,100	F	3.92	4	Secondary	24,900	34,100	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					Lane Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Mead Valley	E Nuevo Rd	Evans Rd to Dunlap Dr	0.50	2	4,100	D or better	2	Existing	14,600	18,700	F	1.00	6	Urban Arterial	47,600	51,700	E
Mead Valley	E Nuevo Rd	Evans Rd to Murrieta Rd	0.51	2	4,900	D or better	2	Existing	12,400	17,300	F	1.02	6	Urban Arterial	20,400	25,300	D or better
Mead Valley	E San Jacinto Ave	Mc Canna St - Redlands Ave to Dunlap Dr	1.38	2	6,000	D or better	2	Existing	12,300	18,300	F	2.76	4	Secondary	24,100	30,100	F
Mead Valley	Evans Rd	E Nuevo Rd to Orange Ave	1.00	2	1,400	D or better	2	Existing	3,800	5,200	D or better	2.00	6	Urban Arterial	55,100	56,500	F
Mead Valley	Evans Rd	Mid County Pkwy EB Ramps at Evans Rd to Ramona Expy	1.67	2	5,200	D or better	2	Existing	5,900	11,100	D or better	3.34	6	Urban Arterial	60,300	65,500	F
Mead Valley	Goetz Rd	2.77 Mi. N of North Loop Rd to 0.27 Mi. SW of Valley Blvd	1.20	2	9,900	D or better	2	Existing	1,400	11,300	D or better	2.40	2	Mtn. Arterial	4,400	14,300	D or better
Mead Valley	Goetz Rd	McLaughlin Rd to Ellis Ave	2.51	2	12,400	E	2	Existing	2,300	14,700	F	5.02	6	Urban Arterial	50,300	62,700	F
Mead Valley	Kine Ave	Ramona Expy to Oleander Ave	0.99	2	12,500	E	2	Existing	4,900	17,400	F	1.98	6	Urban Arterial	57,800	70,300	F
Mead Valley	N D St	San Jacinto Ave to I-215 NB Onramp/SB Offramp at D St	0.25	4	23,700	D or better	4	Existing	2,300	26,000	D or better	1.00	2	Collector	1,100	24,800	F
Mead Valley	N Perris Blvd	E San Jacinto Ave to Placentia St	2.47	2	16,100	F	2	Existing	4,600	20,700	F	4.94	6	Urban Arterial	46,500	62,600	F
Mead Valley	N Perris Blvd	Placentia St to Oleander Ave	2.48	2	18,400	F	2	Existing	3,400	21,800	F	4.96	6	Urban Arterial	43,400	61,800	F
Mead Valley	N Webster Ave	Ramona Expy to Oleander Ave	1.00	2	11,300	D or better	2	Existing	3,600	14,900	F	2.00	4	Secondary	17,000	28,300	F
Mead Valley	Ramona Expy	Evans Rd to N Webster Ave	2.02	4	21,800	D or better	4	Existing	11,200	33,000	F	8.08	6	Expressway	42,600	64,400	D or better
Mead Valley	Ramona Expy	Nevada Ave - Patterson Ave to N Webster Ave	0.25	4	33,800	F	4	Existing	15,300	49,100	F	1.00	6	Expressway	52,900	86,700	E
Mead Valley	Redlands Ave	0.25 Mi. N of Citrus Ave to Orange Ave	0.28	4	9,600	D or better	4	Existing	4,100	13,700	D or better	1.12	4	Secondary	17,500	27,100	F
Mead Valley	Redlands Ave	Orange Ave to Placentia Ave	0.50	2	9,400	D or better	2	Existing	2,800	12,200	E	1.00	4	Secondary	13,800	23,200	D or better
Mead Valley	S Perris Blvd	E 11th St to E San Jacinto Ave	0.73	2	12,300	E	2	Existing	1,500	13,800	F	1.46	6	Urban Arterial	52,700	65,000	F
Mead Valley	S Redlands Blvd	Ellis Ave to E 4th St	0.71	2	7,300	D or better	2	Existing	600	7,900	D or better	1.42	2	Collector	5,300	12,600	E
Sun City / Menifee Valley	Bundy Canyon Rd	Cottonwood Canyon Rd to Murrieta Rd	1.01	2	8,800	D or better	2	Existing	4,800	13,600	F	2.02	6	Urban Arterial	48,100	56,900	F
Sun City / Menifee Valley	Domenigoni Pkwy	Newport Rd to Briggs Rd	0.94	6	20,100	D or better	6	Existing	31,500	51,600	E	5.64	6	Urban Arterial	32,200	52,300	E
Sun City / Menifee Valley	Garbani Rd	Menifee Rd to Briggs Rd	0.77	2	1,800	D or better	2	Existing	8,100	9,900	D or better	1.54	4	Major	31,700	33,500	E
Sun City / Menifee Valley	Holland Rd	Canyon Hills Rd to Murrieta Rd	0.88	2	2,800	D or better	2	Existing	2,900	5,700	D or better	1.76	4	Major	29,600	32,400	E
Sun City / Menifee Valley	McCall Blvd	I-215 SB Ramps at McCall Blvd to Sherman Rd	0.58	4	12,900	D or better	4	Existing	7,300	20,200	D or better	2.32	6	Urban Arterial	43,400	56,300	F
Sun City / Menifee Valley	McCall Blvd	Menifee Rd to 0.65 Mi. E of Sherman Rd	0.96	2	5,200	D or better	2	Existing	9,700	14,900	F	1.92	6	Urban Arterial	37,300	42,500	D or better
Sun City / Menifee Valley	Menifee Rd	Aldergate Dr to Simpson Rd	0.64	2	3,100	D or better	2	Existing	4,800	7,900	D or better	1.28	4	Arterial	30,200	33,300	E
Sun City / Menifee Valley	Menifee Rd	McCall Blvd to 0.2 Mi. S of McLaughlin Rd	0.80	2	7,900	D or better	2	Existing	5,000	12,900	E	1.60	6	Urban Arterial	64,700	72,600	F
Sun City / Menifee Valley	Menifee Rd	McCall Blvd to Grand Ave	0.51	2	4,100	D or better	2	Existing	9,200	13,300	F	1.02	6	Urban Arterial	31,600	35,700	D or better
Sun City / Menifee Valley	Murrieta Rd	Newport Rd to Valley Blvd	0.64	4	12,700	D or better	4	Existing	3,000	15,700	D or better	2.56	4	Arterial	33,100	45,800	F
Sun City / Menifee Valley	Newport Rd	0.59 Mi. W of Normandy Rd to Murrieta Rd	0.99	2	15,200	F	2	Existing	6,500	21,700	F	1.98	6	Urban Arterial	43,700	58,900	F
Sun City / Menifee Valley	Newport Rd	0.8 Mi. E of Goetz Rd to Goetz Rd	0.80	2	13,300	D or better	2	Existing	6,200	19,500	F	1.60	6	Urban Arterial	34,000	47,300	D or better
Sun City / Menifee Valley	Newport Rd	Murrieta Rd to Domenigoni Pkwy	3.24	4	22,500	D or better	4	Existing	15,200	37,700	F	12.96	6	Urban Arterial	33,800	56,300	F
Sun City / Menifee Valley	Normandy Rd	La Ladera Rd to Newport Rd	0.71	2	6,000	D or better	2	Existing	1,900	7,900	D or better	1.42	2	Collector	6,300	12,300	E
Sun City / Menifee Valley	Scott Rd	0.48 Mi. W of Briggs Rd to Briggs Rd	0.50	2	8,100	D or better	2	Existing	9,900	18,000	F	1.00	6	Urban Arterial	46,600	54,700	E
Sun City / Menifee Valley	Scott Rd	I-215 SB Offramp at Scott Rd to 0.5 Mi. W of Haun Rd/Zeiders Rd	0.69	2	8,400	D or better	2	Existing	4,600	13,000	F	1.38	6	Urban Arterial	36,600	45,000	D or better
Sun City / Menifee Valley	Scott Rd	Menifee Rd to Antelope Rd	0.81	2	9,400	D or better	2	Existing	10,100	19,500	F	1.62	6	Urban Arterial	37,300	46,700	D or better
Sun City / Menifee Valley	Valley Blvd	Murrieta Rd to Cherry Hills Blvd	1.24	2	3,900	D or better	2	Existing	(200)	3,700	D or better	2.48	4	Arterial	32,300	36,200	E
Southwest Area	Clinton Keith Rd	0.05 Mi. E of I-215 NB Ramps at Clinton Keith Rd to 0.49 Mi. E of Meadowlark Ln - Whitewood Rd	1.11	2	12,400	E	2	Existing	8,300	20,700	F	2.22	6	Urban Arterial	44,900	57,300	F
Southwest Area	Clinton Keith Rd	Calle Del Oso Oro - N Bear Creek Dr to Grand Ave	0.68	4	11,100	D or better	4	Existing	(1,000)	10,100	D or better	2.72	4	Major	22,100	33,200	E
Southwest Area	Clinton Keith Rd	La Estrella St - Nutmeg St to I-215 SB Ramps at Clinton Keith Rd	1.67	4	22,100	D or better	4	Existing	5,400	27,500	E	6.68	6	Urban Arterial	53,100	75,200	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					*Lane* Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
Southwest Area	Diaz Rd	0.41 Mi. S of Avenida Alvarado - Overland Dr to Avenida Alvarado - Overland Dr	0.41	4	18,000	D or better	4	Existing	800	18,800	D or better	1.64	4	Major	12,900	30,900	E
Southwest Area	Jefferson Ave	Kalmia St to 0.24 Mi. SE of Ivy St - Los Alamos Rd	0.74	2	12,200	E	2	Existing	500	12,700	E	1.48	4	Arterial	23,700	35,900	E
Southwest Area	Jefferson Ave	Lemon St to Nutmeg St	0.87	2	8,800	D or better	2	Existing	300	9,100	D or better	1.74	4	Secondary	15,900	24,700	E
Southwest Area	Murrieta Hot Springs Rd	0.4 Mi. W of Date St to Winchester Rd	0.48	4	20,500	D or better	4	Existing	12,100	32,600	F	1.92	4	Arterial	18,500	39,000	E
Southwest Area	Murrieta Hot Springs Rd	I-15 NB Ramps at Murrieta Hot Springs Rd to I-215 SB Offramp at Murrieta Hot Springs Rd	0.50	6	27,700	D or better	6	Existing	6,200	33,900	D or better	3.00	6	Urban Arterial	27,700	55,400	E
Southwest Area	Murrieta Hot Springs Rd	I-215 NB Onramp at Murrieta Hot Springs Rd to Margarita Rd	1.40	4	24,100	D or better	4	Existing	10,000	34,100	F	5.60	4	Arterial	22,800	46,900	F
Southwest Area	Murrieta Hot Springs Rd	Margarita Rd to 0.4 Mi. W of Date St	0.53	4	19,900	D or better	4	Existing	11,600	31,500	F	2.12	4	Arterial	14,400	34,300	E
Southwest Area	Pechanga Pkwy	SR-79 S to Rainbow Canyon Rd	0.25	4	54,600	D or better	4	Existing	(1,100)	53,500	F	1.00	6	Urban Arterial	(21,500)	33,100	D or better
Southwest Area	Rancho California Rd	I-15 NB Offramp at Rancho California Rd to Jefferson Ave	0.25	4	30,000	D or better	4	Existing	(1,000)	29,000	E	1.00	6	Urban Arterial	(3,100)	26,900	D or better
Southwest Area	Rancho California Rd	Margarita Rd to Moraga Rd	0.90	4	27,900	D or better	4	Existing	3,800	31,700	F	3.60	4	Arterial	(1,900)	26,000	D or better
Southwest Area	Redhawk Pkwy	Margarita Rd to Vail Ranch Pkwy	0.73	2	15,000	D or better	2	Existing	1,700	16,700	F	1.46	4	Major	3,900	18,900	D or better
Southwest Area	Wolf Valley Rd	Redhawk Pkwy to Pechanga Pkwy	0.91	2	13,300	D or better	2	Existing	2,300	15,600	F	1.82	4	Secondary	(6,700)	6,600	D or better
Southwest Area	Ynez Rd	0.15 Mi. S of Ynez Rd to Jedediah Smith Rd	1.05	2	14,300	D or better	2	Existing	1,700	16,000	F	2.10	4	Secondary	7,600	21,900	D or better
Southwest Area	Ynez Rd	0.2 Mi. N of Overland Dr to Winchester Rd	0.26	6	37,800	D or better	6	Existing	1,300	39,100	D or better	1.56	6	Urban Arterial	21,700	59,500	F
Reche Cyn. / Badlands	Alessandro Blvd	Graham St to Heacock St	0.50	4	19,000	D or better	4	Existing	2,100	21,100	D or better	2.00	6	Urban Arterial	34,600	53,600	E
Reche Cyn. / Badlands	Alessandro Blvd	Old 215 Frontage Rd to Day St	0.25	4	25,500	D or better	4	Existing	6,400	31,900	F	1.00	6	Urban Arterial	26,400	51,900	E
Reche Cyn. / Badlands	Box Springs Rd	1.01 Mi. W of Day St to Day St	0.99	2	10,400	D or better	2	Existing	3,300	13,700	F	1.98	4	Secondary	17,000	27,400	F
Reche Cyn. / Badlands	Frederick St	Towngate Ave to SR-60 EB Offramp at Frederick St/Pigeon Pass Rd - Sunnymead Blvd	0.30	6	24,000	D or better	6	Existing	4,200	28,200	D or better	1.80	4	Major	13,100	37,100	F
Reche Cyn. / Badlands	Gilman Springs Rd	0.76 Mi. S of SR-60 EB Offramp at Gilman Springs Rd to SR-60 EB Offramp at Gilman Springs Rd	0.76	2	11,300	D or better	2	Existing	6,100	17,400	F	1.52	4	Arterial	11,100	22,400	D or better
Reche Cyn. / Badlands	Graham St	Alessandro Blvd to 0.24 Mi. S of Alessandro Blvd	0.25	4	6,600	D or better	4	Existing	5,700	12,300	D or better	1.00	4	Secondary	18,200	24,800	E
Reche Cyn. / Badlands	Indian St	Oleander Ave to Krameria Ave	1.51	2	3,600	D or better	2	Existing	5,200	8,800	D or better	3.02	4	Secondary	23,800	27,400	F
Reche Cyn. / Badlands	Iris Ave	Lasselle St to Oliver St	1.46	6	15,300	D or better	6	Existing	7,700	23,000	D or better	8.76	6	Urban Arterial	41,700	57,000	F
Reche Cyn. / Badlands	John F Kennedy Dr	Moreno Beach Dr to 0.61 Mi. E of Moreno Beach Dr	0.69	4	9,200	D or better	4	Existing	5,400	14,600	D or better	2.76	4	Major	25,300	34,500	F
Reche Cyn. / Badlands	Kitching St	Nandina Ave to Iris Ave	1.50	2	3,800	D or better	2	Existing	2,800	6,600	D or better	3.00	4	Major	32,800	36,600	F
Reche Cyn. / Badlands	Lasselle St	Oleander Ave to Iris Ave	2.31	4	14,000	D or better	4	Existing	6,400	20,400	D or better	9.24	4	Major	30,900	44,900	F
Reche Cyn. / Badlands	Perris Blvd	0.12 Mi. S of Eucalyptus Ave to 0.12 Mi. S of Sunnymead Blvd	0.50	4	29,100	E	4	Existing	0	29,100	E	2.00	4	Arterial	8,000	37,100	F
Reche Cyn. / Badlands	Perris Blvd	Cactus Ave to Cottonwood Ave	0.99	4	24,200	D or better	4	Existing	1,900	26,100	D or better	3.96	4	Arterial	12,000	36,200	E
Reche Cyn. / Badlands	Perris Blvd	Cottonwood Ave to 0.12 Mi. S of Eucalyptus Ave	0.38	4	30,500	F	4	Existing	1,000	31,500	F	1.52	4	Arterial	8,600	39,100	E
Reche Cyn. / Badlands	Perris Blvd	Oleander Ave to Cactus Ave	3.49	2	17,700	F	2	Existing	3,100	20,800	F	6.98	4	Arterial	26,300	44,000	F
Reche Cyn. / Badlands	Perris Blvd	Sunnymead Blvd to Ironwood Ave	0.52	4	21,000	D or better	4	Existing	(400)	20,600	D or better	2.08	4	Arterial	18,000	39,000	F
Reche Cyn. / Badlands	Pigeon Pass Rd	Hidden Springs Dr to 0.39 Mi. N of Ironwood Ave	1.11	2	14,900	D or better	2	Existing	500	15,400	F	2.22	4	Secondary	6,200	21,100	D or better
Reche Cyn. / Badlands	Pigeon Pass Rd	SR-60 WB Onramp at Frederick St/Pigeon Pass Rd to 0.39 Mi. N of Ironwood Ave	0.72	4	21,100	D or better	4	Existing	(400)	20,700	D or better	2.88	4	Secondary	4,200	25,300	E
Reche Cyn. / Badlands	Pigeon Pass Rd	Sunnymead Ranch Pkwy to 0.56 Mi. N of Sunnymead Ranch Pkwy	0.56	2	1,100	D or better	2	Existing	1,100	2,200	D or better	1.12	4	Secondary	37,700	38,800	F
Reche Cyn. / Badlands	Redlands Blvd	Locust Ave to Cactus Ave	3.25	2	11,400	D or better	2	Existing	2,400	13,800	F	6.50	6	Urban Arterial	18,800	30,200	D or better
Reche Cyn. / Badlands	Town Cir	Memorial Way to 0.3 Mi. W of Moreno Valley Mall Access Rd	0.36	4	7,800	D or better	4	Existing	(100)	7,700	D or better	1.44	2	Collector	7,200	15,000	F
Harvest Vlly. / Winchester	Menifee Rd	0.3 Mi. N of Rouse Rd to Pinacate Rd	0.70	2	5,700	D or better	2	Existing	8,000	13,700	F	1.40	6	Urban Arterial	52,200	57,900	F
Harvest Vlly. / Winchester	Sherman Rd	McLaughlin Rd to Ethanac Rd	0.50	2	2,200	D or better	2	Existing	2,300	4,500	D or better	1.00	4	Major	37,400	39,600	F

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
The Pass	Calimesa Blvd	Singleton Rd to Singleton Rd	0.92	2	2,400	D or better	2	Existing	1,300	3,700	D or better	1.84	4	Major	38,500	40,900	F
The Pass	E 1st St	Beaumont Ave to Michigan Ave	0.64	2	4,900	D or better	2	Existing	1,400	6,300	D or better	1.28	4	Secondary	31,700	36,600	F
The Pass	E 1st St	Michigan Ave to Highland Springs Ave	1.27	2	1,600	D or better	2	Existing	1,900	3,500	D or better	2.54	4	Major	34,000	35,600	F
The Pass	E 6th St	Beaumont Ave to Pennsylvania Ave	0.62	4	6,600	D or better	4	Existing	3,200	9,800	D or better	2.48	4	Secondary	22,400	29,000	F
The Pass	E County Line Rd	Bryant St to Fremont St	0.50	4	2,900	D or better	4	Existing	(1,200)	1,700	D or better	2.00	2	Collector	12,900	15,800	F
The Pass	Hathaway St	Lincoln St to Wesley St	0.63	2	0	D or better	2	Existing	100	100	D or better	1.26	2	Collector	21,000	21,000	F
The Pass	Singleton Rd	Roberts Rd - Woodhouse Rd to Beckwith Ave	0.87	2	4,000	D or better	2	Existing	(2,100)	1,900	D or better	1.74	4	Major	38,800	42,800	F
The Pass	Sun Lakes Blvd	Highland Springs Ave to Highland Home Rd	1.11	4	2,700	D or better	4	Existing	2,500	5,200	D or better	4.44	4	Major	38,600	41,300	F
The Pass	W Ramsey St	N Highland Springs Ave to 0.38 Mi. E of S 22nd St	3.05	4	3,300	D or better	4	Existing	5,700	9,000	D or better	12.20	4	Major	31,000	34,300	F
The Pass	W Wilson St	0.67 Mi. E of Highland Home Rd - Meridian Ave to 0.37 Mi. E of Sunset Ave	0.71	2	4,300	D or better	2	Existing	3,000	7,300	D or better	1.42	4	Major	40,400	44,700	F
The Pass	W Wilson St	1.14 Mi. W of N 8th St to N 8th St	1.14	4	4,900	D or better	4	Existing	2,500	7,400	D or better	4.56	4	Major	37,300	42,200	F
The Pass	W Wilson St	Highland Home Rd - Meridian Ave to 0.34 Mi. W of Sunset Ave	0.67	4	5,100	D or better	4	Existing	4,100	9,200	D or better	2.68	4	Major	48,600	53,700	F
The Pass	W Wilson St	N 8th St to N San Gorgonio Ave	0.50	2	4,000	D or better	2	Existing	1,900	5,900	D or better	1.00	4	Major	31,600	35,600	F
The Pass	W Wilson St	N Highland Springs Ave to 0.22 Mi. W of Highland Home Rd - Meridian Ave	0.79	2	3,400	D or better	2	Existing	2,600	6,000	D or better	1.58	4	Secondary	29,100	32,500	F
The Pass	Westward Ave	Michigan Ave to Highland Springs Ave	1.11	2	200	D or better	2	Existing	400	600	D or better	2.22	4	Secondary	23,500	23,700	E
San Jacinto Valley	Domenigoni Pkwy	S Sanderson Ave to 0.66 Mi. E of Warren Rd	1.11	4	19,800	D or better	4	Existing	16,200	36,000	F	4.44	6	Urban Arterial	14,000	33,800	D or better
San Jacinto Valley	Lyon Ave	Domenigoni Pkwy to S Lyon Ave	1.43	2	8,200	D or better	2	Existing	8,300	16,500	F	2.86	4	Secondary	4,000	12,200	D or better
San Jacinto Valley	Myers St	Devonshire Ave to W Menlo Ave	0.95	2	0	D or better	2	Existing	0	0	D or better	1.90	2	Collector	11,800	11,800	E
San Jacinto Valley	N Sanderson Ave	Cottonwood Ave to SR-79 NB Ramps at Sanderson Ave	2.36	2	17,600	F	2	Existing	(11,600)	6,000	D or better	4.72	4	Major	19,300	36,900	F
San Jacinto Valley	N Sanderson Ave	Florida Ave to W Menlo Ave	0.74	4	21,500	D or better	4	Existing	6,000	27,500	E	2.96	4	Major	14,600	36,100	F
San Jacinto Valley	N Sanderson Ave	N Ramona Blvd to 1.33 Mi. S of N Ramona Blvd	1.73	2	17,500	D or better	2	Existing	4,800	22,300	F	3.46	4	Major	1,600	19,100	D or better
San Jacinto Valley	N Sanderson Ave	S Sanderson Ave to Eaton Ave	0.50	2	17,200	D or better	2	Existing	3,300	20,500	F	1.00	4	Major	11,600	28,800	D or better
San Jacinto Valley	N Sanderson Ave	W Menlo Ave to Eaton Ave	0.50	2	17,700	F	2	Existing	3,200	20,900	F	1.00	4	Major	12,700	30,400	D or better
San Jacinto Valley	N Warren Rd	Cottonwood Ave to Deegan St	2.20	2	6,000	D or better	2	Existing	(2,700)	3,300	D or better	4.40	4	Arterial	34,500	40,500	E
San Jacinto Valley	N Warren Rd	Deegan St to Ramona Blvd	1.33	2	6,000	D or better	2	Existing	5,700	11,700	E	2.66	4	Arterial	27,900	33,900	E
San Jacinto Valley	Ramona Expy	0.24 Mi. E of Soboba St to 0.36 Mi. N of E Esplanade Ave	1.40	2	10,500	D or better	2	Existing	4,900	15,400	F	2.80	4	Secondary	(2,600)	7,900	D or better
San Jacinto Valley	Ramona Expy	E Main St to 0.48 Mi. E of N San Jacinto Ave	1.44	2	9,700	D or better	2	Existing	3,500	13,200	F	2.88	6	Urban Arterial	21,800	31,500	D or better
San Jacinto Valley	Ramona Expy	N San Jacinto Ave to N State St	0.76	2	12,600	D or better	2	Existing	4,000	16,600	F	1.52	6	Urban Arterial	21,900	34,500	D or better
San Jacinto Valley	Ramona Expy	N Sanderson Ave to 0.52 Mi. E of N Warren Rd	1.21	2	11,400	D or better	2	Existing	9,100	20,500	F	2.42	6	Expressway	19,800	31,200	D or better
San Jacinto Valley	S Lyon Ave	Florida Ave to Lyon Ave	1.24	2	11,100	D or better	2	Existing	2,500	13,600	F	2.48	4	Collector	(5,800)	5,300	D or better
San Jacinto Valley	S Sanderson Ave	Stetson Ave to Domenigoni Pkwy	1.09	2	14,600	D or better	2	Existing	7,100	21,700	F	2.18	4	Major	6,800	21,400	D or better
San Jacinto Valley	S Sanderson Ave	W 7th St to Cottonwood Ave	0.50	2	16,100	F	2	Existing	4,000	20,100	F	1.00	4	Major	16,800	32,900	E
San Jacinto Valley	S Sanderson Ave	W 7th St to N Sanderson Ave	0.50	2	16,600	D or better	2	Existing	3,300	19,900	F	1.00	4	Major	12,800	29,400	D or better
San Jacinto Valley	S State St	0.25 Mi. N of Chambers St to E Newport Rd	2.76	2	11,100	D or better	2	Existing	9,300	20,400	F	5.52	4	Major	8,800	19,900	D or better
San Jacinto Valley	S State St	0.25 Mi. N of W 7th St to Cottonwood Ave	0.36	4	14,100	D or better	4	Existing	5,500	19,600	D or better	1.44	4	Major	18,400	32,500	E
San Jacinto Valley	S State St	Florida Ave to Whittier Ave	0.74	2	12,100	D or better	2	Existing	2,200	14,300	F	1.48	4	Secondary	(1,100)	11,000	D or better
San Jacinto Valley	SR-79/Ramona Expy	0.35 Mi. SE of Byrd St to N State St	1.60	2	15,200	F	2	Existing	5,300	20,500	F	3.20	6	Urban Arterial	43,500	58,700	F
San Jacinto Valley	SR-79/Ramona Expy	N Sanderson Ave to Byrd St	0.79	2	16,500	F	2	Existing	6,600	23,100	F	1.58	6	Urban Arterial	46,700	63,200	F
San Jacinto Valley	Stetson Ave	S Sanderson Ave to Gilbert St	1.77	4	19,100	D or better	4	Existing	5,100	24,200	D or better	7.08	4	Major	14,500	33,600	E
San Jacinto Valley	Stetson Ave	S State St to 0.26 Mi. E of S Palm Ave	0.25	4	23,500	D or better	4	Existing	4,800	28,300	E	1.00	4	Major	2,700	26,200	D or better
San Jacinto Valley	Stetson Ave	S State St to Santa Fe St	0.50	2	19,800	F	2	Existing	5,800	25,600	F	1.00	4	Major	11,800	31,600	E

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					Lane Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
San Jacinto Valley	Warren Rd	California Ave to 0.36 Mi. S of W Harrison Ave	1.16	2	10,600	D or better	2	Existing	7,500	18,100	F	2.32	4	Secondary	(7,500)	3,100	D or better
San Jacinto Valley	Warren Rd	Devonshire Ave to Whittier Ave	1.06	2	12,200	D or better	2	Existing	5,300	17,500	F	2.12	4	Major	5,100	17,300	D or better
West. Coachella Vlly	44th Ave	Golf Center Pkwy to Harrison St	1.27	2	5,600	D or better	2	Existing	(300)	5,300	D or better	2.54	4	Secondary	25,400	31,000	F
West. Coachella Vlly	48th Ave	Monroe St to Madison St	1.01	2	12,600	D or better	2	Existing	2,200	14,800	F	2.02	4	Secondary	1,400	14,000	D or better
West. Coachella Vlly	50th Ave	Madison St to Jefferson St	1.00	2	11,200	D or better	2	Existing	3,800	15,000	F	2.00	4	Major	6,000	17,200	D or better
West. Coachella Vlly	52nd Ave	0.41 Mi. E of Jefferson St to Madison St	0.58	3	19,800	D or better	3	Existing	5,500	25,300	E	1.74	4	Arterial	17,000	36,800	E
West. Coachella Vlly	52nd Ave	Jefferson St to 0.41 Mi. E of Jefferson St	0.41	3	20,900	D or better	3	Existing	5,100	26,000	E	1.23	4	Arterial	17,400	38,300	F
West. Coachella Vlly	52nd Ave	Madison St to Monroe St	1.01	2	17,000	F	2	Existing	2,600	19,600	F	2.02	4	Arterial	23,300	40,300	F
West. Coachella Vlly	54th Ave	Jefferson St to Madison St	0.96	4	16,400	D or better	4	Existing	9,400	25,800	D or better	3.84	4	Arterial	21,200	37,600	F
West. Coachella Vlly	54th Ave	Monroe St to Madison St	1.00	2	7,500	D or better	2	Existing	8,300	15,800	F	2.00	4	Arterial	15,300	22,800	D or better
West. Coachella Vlly	Bob Hope Dr	Clancy Ln to E Palm Canyon Dr	0.68	4	27,000	D or better	4	Existing	2,700	29,700	E	2.72	4	Arterial	(9,300)	17,700	D or better
West. Coachella Vlly	Cook St	Hovley Ln E to Fred Waring Dr	1.26	4	26,600	D or better	4	Existing	2,000	28,600	E	5.04	6	Urban Arterial	(8,300)	18,300	D or better
West. Coachella Vlly	Cook St	I-10 EB Offramp at Cook St to Frank Sinatra Dr	0.91	4	27,000	D or better	4	Existing	5,600	32,600	F	3.64	6	Urban Arterial	700	27,700	D or better
West. Coachella Vlly	Country Club Dr	0.38 Mi. E of El Dorado Dr to El Dorado Dr	0.38	4	24,600	D or better	4	Existing	3,200	27,800	E	1.52	6	Urban Arterial	4,800	29,400	D or better
West. Coachella Vlly	Country Club Dr	Washington St to Oasis Club Dr	1.08	4	28,000	D or better	4	Existing	8,000	36,000	F	4.32	6	Urban Arterial	14,800	42,800	D or better
West. Coachella Vlly	Date Palm Dr	30th Ave to Ramon Rd	1.00	4	22,800	D or better	4	Existing	4,300	27,100	E	4.00	6	Urban Arterial	300	23,100	D or better
West. Coachella Vlly	Date Palm Dr	I-10 EB Offramp at Date Palm Dr to 0.5 Mi. S of Vista Chino	0.70	4	26,100	D or better	4	Existing	7,500	33,600	F	2.80	6	Urban Arterial	6,400	32,500	D or better
West. Coachella Vlly	Date Palm Dr	Varner Rd to I-10 EB Offramp at Date Palm Dr	0.97	2	10,200	D or better	2	Existing	15,100	25,300	F	1.94	6	Urban Arterial	13,200	23,400	D or better
West. Coachella Vlly	Dillon Rd	Cabazon Ave to 0.55 Mi. NE of Cabazon Ave	0.56	2	10,200	D or better	2	Existing	10,400	20,600	F	1.12	4	Secondary	24,600	34,800	F
West. Coachella Vlly	E Palm Canyon Dr	La Verne Way - S Sunrise Way to Golf Club Dr	2.56	4	27,400	E	4	Existing	4,000	31,400	F	10.24	4	Major	5,400	32,800	E
West. Coachella Vlly	Eisenhower Dr	50th Ave to Calle Sinaloa	0.85	4	28,500	D or better	4	Existing	(1,100)	27,400	E	3.40	4	Arterial	(16,300)	12,200	D or better
West. Coachella Vlly	Fred Waring Dr	Washington St to El Dorado Dr	1.93	4	29,700	D or better	4	Existing	5,900	35,600	F	7.72	6	Urban Arterial	10,900	40,600	D or better
West. Coachella Vlly	Garnet Ave	Wall Rd to N Indian Canyon Dr	2.41	2	6,500	D or better	2	Existing	1,900	8,400	D or better	4.82	4	Secondary	18,400	24,900	E
West. Coachella Vlly	Gerald Ford Dr	Cook St to Portola Ave	1.11	2	8,900	D or better	2	Existing	4,300	13,200	F	2.22	4	Arterial	18,400	27,300	D or better
West. Coachella Vlly	Gerald Ford Dr	Monterey Ave to 0.5 Mi. W of Portola Ave	0.50	4	9,800	D or better	4	Existing	3,700	13,500	D or better	2.00	4	Arterial	25,400	35,200	E
West. Coachella Vlly	Hacienda Dr	Mountain View Rd to Long Canyon Rd	1.14	2	5,000	D or better	2	Existing	1,500	6,500	D or better	2.28	4	Secondary	21,500	26,500	F
West. Coachella Vlly	Indio Blvd	Clinton St to Fred Waring Dr	0.68	4	6,100	D or better	4	Existing	9,600	15,700	D or better	2.72	6	Urban Arterial	47,400	53,500	E
West. Coachella Vlly	Indio Blvd	Fred Waring Dr to 48th Ave	3.09	4	7,900	D or better	4	Existing	9,200	17,100	D or better	12.36	6	Urban Arterial	52,700	60,600	F
West. Coachella Vlly	Indio Blvd	I-10 WB Offramp at Jefferson St to Jefferson St	0.54	2	9,100	D or better	2	Existing	4,700	13,800	E	1.08	3	Urban Arterial	6,400	15,500	D or better
West. Coachella Vlly	Indio Blvd	Madison St to Clinton St	0.58	4	11,800	D or better	4	Existing	11,300	23,100	D or better	2.32	6	Urban Arterial	48,900	60,700	F
West. Coachella Vlly	Jackson St	50th Ave to 48th Ave	1.02	2	6,800	D or better	2	Existing	6,500	13,300	F	2.04	4	Secondary	15,700	22,500	D or better
West. Coachella Vlly	Jefferson St	49th Ave to 50th Ave	0.49	6	39,800	D or better	6	Existing	10,800	50,600	E	2.94	6	Urban Arterial	8,200	48,000	D or better
West. Coachella Vlly	Jefferson St	Westward Ho Dr to SR-111	0.50	2	10,500	D or better	2	Existing	2,400	12,900	F	1.00	6	Urban Arterial	14,800	25,300	D or better
West. Coachella Vlly	Madison St	0.49 Mi. N of 50th Ave to 48th Ave	0.50	4	3,500	D or better	4	Existing	3,300	6,800	D or better	2.00	4	Arterial	30,500	34,000	E
West. Coachella Vlly	Madison St	48th Ave to SR-111	0.51	2	10,400	D or better	2	Existing	2,500	12,900	E	1.02	4	Secondary	7,800	18,200	D or better
West. Coachella Vlly	Madison St	58th Ave to Airport Blvd	1.01	4	13,400	D or better	4	Existing	7,500	20,900	D or better	4.04	4	Arterial	23,800	37,200	F
West. Coachella Vlly	Madison St	Airport Blvd to 54th Ave	0.99	2	16,500	F	2	Existing	7,900	24,400	F	1.98	4	Arterial	30,000	46,500	F
West. Coachella Vlly	Monroe St	0.5 Mi. N of 62nd Ave to 0.5 Mi. N of 60th Ave	1.02	2	12,600	E	2	Existing	8,300	20,900	F	2.04	4	Arterial	22,900	35,500	E
West. Coachella Vlly	Monroe St	49th Ave to 52nd Ave	1.50	4	14,700	D or better	4	Existing	15,000	29,700	E	6.00	4	Secondary	2,400	17,100	D or better
West. Coachella Vlly	Monroe St	Fred Waring Dr to 44th Ave	0.34	4	20,400	D or better	4	Existing	7,600	28,000	E	1.36	4	Secondary	2,700	23,100	D or better
West. Coachella Vlly	Monroe St	I-10 WB Offramp at Monroe St to 44th Ave	0.50	2	13,800	D or better	2	Existing	5,900	19,700	F	1.00	6	Urban Arterial	7,000	20,800	D or better

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project					*Lane* Miles	GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service		No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
West. Coachella Vlly	Monterey Ave	0.22 Mi. N of Unknown to Dinah Shore Dr	0.50	4	24,600	D or better	4	Existing	9,100	33,700	F	2.00	6	Urban Arterial	5,400	30,000	D or better
West. Coachella Vlly	Monterey Ave	I-10 EB Offramp at Monterey Ave to Dinah Shore Dr	0.25	4	32,300	D or better	4	Existing	13,200	45,500	F	1.00	6	Urban Arterial	(1,000)	31,300	D or better
West. Coachella Vlly	N Gene Autry Trl	I-10 EB Offramp at Gene Autry Trl/Palm Dr to E Vista Chino	2.34	2	20,200	D or better	2	Existing	2,600	22,800	F	4.68	6	Major	7,300	27,500	F
West. Coachella Vlly	N Indian Canyon Dr	0.25 Mi. N of W Tramview Rd to W Tramview Rd	1.94	2	18,300	D or better	2	Existing	(15,500)	2,800	D or better	3.88	4	Major	12,800	31,100	E
West. Coachella Vlly	N Indian Canyon Dr	N Sunrise Way to 18th Ave	3.25	2	18,200	F	2	Existing	4,000	22,200	F	6.50	6	Urban Arterial	26,200	44,400	D or better
West. Coachella Vlly	N Indian Canyon Dr	Pierson Blvd to 1.4 Mi. N of Mission Lakes Blvd	2.41	2	9,600	D or better	2	Existing	200	9,800	D or better	4.82	4	Arterial	31,400	41,000	E
West. Coachella Vlly	N Palm Canyon Dr	Alejo Rd to E Tahquitz Canyon Way	0.50	4	15,300	D or better	4	Existing	1,000	16,300	D or better	2.00	2	Secondary	(3,300)	12,000	E
West. Coachella Vlly	Palm Dr	15th Ave to 0.38 Mi. N of Dillon Rd	0.61	4	18,300	D or better	4	Existing	11,200	29,500	E	2.44	4	Arterial	10,100	28,400	D or better
West. Coachella Vlly	Palm Dr	Dillon Rd to 18th Ave	0.49	4	20,500	D or better	4	Existing	10,100	30,600	F	1.96	4	Arterial	11,000	31,500	D or better
West. Coachella Vlly	Palm Dr	I-10 WB Ramps at Gene Autry Trl/Palm Dr to 0.22 Mi. S of Varner Rd	0.56	2	21,300	F	2	Existing	10,400	31,700	F	1.12	4	Arterial	16,000	37,300	F
West. Coachella Vlly	Pierson Blvd	West Dr to Little Morongo Rd	1.01	2	8,100	D or better	2	Existing	5,300	13,400	F	2.02	4	Major	11,700	19,800	D or better
West. Coachella Vlly	Ramon Rd	Crossley Rd to Landau Blvd	0.50	4	33,100	F	4	Existing	4,500	37,600	F	2.00	6	Urban Arterial	19,300	52,400	E
West. Coachella Vlly	Ramon Rd	Da Vall Dr to 0.5 Mi. W of Da Vall Dr	0.48	4	25,200	D or better	4	Existing	6,100	31,300	F	1.92	6	Urban Arterial	16,900	42,100	D or better
West. Coachella Vlly	Ramon Rd	San Luis Rey Dr to Crossley Rd	0.24	5	33,100	D or better	5	Existing	5,500	38,600	D or better	1.20	6	Urban Arterial	24,700	57,800	F
West. Coachella Vlly	Ramon Rd	San Luis Rey Dr to N Gene Autry Trl	0.25	6	30,600	D or better	6	Existing	5,000	35,600	D or better	1.50	6	Urban Arterial	28,000	58,600	F
West. Coachella Vlly	SR-111	0.16 Mi. S of Bob Hope Dr to Fred Waring Dr	0.54	6	50,600	D or better	6	Existing	6,900	57,500	F	3.24	6	Urban Arterial	(1,800)	48,800	D or better
West. Coachella Vlly	SR-111	Deep Canyon Rd to El Dorado Dr	1.50	4	39,300	F	4	Existing	4,300	43,600	F	6.00	6	Urban Arterial	18,400	57,700	F
West. Coachella Vlly	SR-111	Deep Canyon Rd to Portola Ave	0.50	4	34,100	D or better	4	Existing	3,700	37,800	F	2.00	6	Urban Arterial	14,500	48,600	D or better
West. Coachella Vlly	SR-111	El Dorado Dr to Washington St	2.60	4	42,900	F	4	Existing	5,900	48,800	F	10.40	6	Urban Arterial	15,500	58,400	F
West. Coachella Vlly	SR-111	Madison St to Adams St	1.99	4	30,600	D or better	4	Existing	5,500	36,100	F	7.96	6	Urban Arterial	6,000	36,600	D or better
West. Coachella Vlly	SR-111	San Pablo Ave to Monterey Ave	0.50	4	26,000	D or better	4	Existing	3,200	29,200	E	2.00	6	Urban Arterial	11,400	37,400	D or better
West. Coachella Vlly	SR-111	Washington St to Adams St	0.69	6	46,300	D or better	6	Existing	11,400	57,700	F	4.14	6	Urban Arterial	16,300	62,600	F
West. Coachella Vlly	SR-111/E Palm Cyn Dr	Date Palm Dr to Frank Sinatra Dr	0.76	6	45,200	D or better	6	Existing	8,700	53,900	E	4.56	6	Urban Arterial	12,600	57,800	F
West. Coachella Vlly	SR-111/E Palm Cyn Dr	Date Palm Dr to Perez Rd	1.10	4	28,700	D or better	4	Existing	5,900	34,600	F	4.40	6	Urban Arterial	14,900	43,600	D or better
West. Coachella Vlly	SR-111/E Palm Cyn Dr	Golf Club Dr to Perez Rd	0.76	4	37,900	F	4	Existing	7,500	45,400	F	3.04	6	Urban Arterial	14,900	52,800	E
West. Coachella Vlly	SR-111/E Vista Chino	N Avenida Caballeros to N Sunrise Way	0.50	4	20,000	D or better	4	Existing	3,600	23,600	D or better	2.00	6	Urban Arterial	31,700	51,700	E
West. Coachella Vlly	SR-111/E Vista Chino	N Farrell Dr to N Gene Autry Trl	0.78	6	35,700	D or better	6	Existing	5,900	41,600	D or better	4.68	6	Urban Arterial	32,800	68,500	F
West. Coachella Vlly	SR-111/E Vista Chino	N Sunrise Way to N Farrell Dr	0.50	4	22,600	D or better	4	Existing	3,300	25,900	D or better	2.00	6	Urban Arterial	36,000	58,600	F
West. Coachella Vlly	SR-111/Golf Center Pkwy	45th Ave to 46th Ave	0.56	2	8,100	D or better	2	Existing	4,100	12,200	E	1.12	6	Urban Arterial	13,800	21,900	D or better
West. Coachella Vlly	SR-111/N Palm Cyn Dr	Vista Chino to Tram Way Rd - W San Rafael Dr	1.13	4	24,600	D or better	4	Existing	8,700	33,300	F	4.52	4	Major	29,300	53,900	F
West. Coachella Vlly	Varner Rd	1.18 Mi. NW of Da Vall Dr to Landau Blvd - Mountain View Rd	2.16	2	10,500	D or better	2	Existing	6,500	17,000	F	4.32	4	Arterial	33,900	44,400	F
West. Coachella Vlly	Varner Rd	Date Palm Dr to Date Palm Dr	1.19	2	6,700	D or better	2	Existing	12,300	19,000	F	2.38	4	Arterial	23,100	29,800	D or better
West. Coachella Vlly	Washington St	Eisenhower Dr to 48th Ave	0.31	4	31,300	F	4	Existing	700	32,000	F	1.24	6	Urban Arterial	20,400	51,700	E
West. Coachella Vlly	Washington St	SR-111 to 0.45 Mi. N of Fred Waring Dr	1.59	4	34,300	F	4	Existing	6,000	40,300	F	6.36	6	Urban Arterial	20,000	54,300	E
East. Coachella Vlly	50th Ave	Harrison St to 0.24 Mi. W of Calhoun St	1.74	2	13,000	D or better	2	Existing	3,900	16,900	F	3.48	4	Arterial	13,200	26,200	D or better
East. Coachella Vlly	50th Ave	Tyler St to Polk St	1.04	2	1,300	D or better	2	Existing	9,300	10,600	D or better	2.08	6	Urban Arterial	68,100	69,400	F
East. Coachella Vlly	52nd Ave	0.36 Mi. W of Fillmore St to 0.84 Mi. E of SR-111	1.13	2	4,900	D or better	2	Existing	10,300	15,200	F	2.26	6	Urban Arterial	24,400	29,300	D or better
East. Coachella Vlly	Dillon Rd	SR-86 SB Ramps at Dillon Rd to 44th Ave	1.73	2	1,900	D or better	2	Existing	4,400	6,300	D or better	3.46	4	Arterial	54,400	56,300	F
East. Coachella Vlly	Grapefruit Blvd	0.59 Mi. N of 52nd Ave to 50th Ave	0.64	2	3,200	D or better	2	Existing	8,800	12,000	E	1.28	4	Arterial	18,900	22,100	D or better
East. Coachella Vlly	Grapefruit Blvd	Harrison St to Dillon Rd	1.01	4	18,400	D or better	4	Existing	17,500	35,900	F	4.04	6	Expressway	54,700	73,100	D or better
East. Coachella Vlly	Harrison St	50th Ave to 54th Ave	1.99	4	15,300	D or better	4	Existing	21,500	36,800	F	7.96	6	Expressway	50,100	65,400	D or better

Area Plan	Roadway Segment	Limits	Miles	Baseline			Baseline-Plus Project						GPA960 (Build Out)				
				No. of Lanes	Daily Volume	Level of Service	No. of Lanes	Future Facility Type	Added Daily Volume	Daily Volume	Level of Service	*Lane* Miles	No. of Lanes	Facility Type	Added Daily Volume	Daily Volume	Level of Service
East. Coachella Vlly	Polk St	52nd Ave to 50th Ave	0.80	2	1,200	D or better	2	Existing	7,000	8,200	D or better	1.60	2	Collector	14,300	15,500	F
East. Coachella Vlly	Van Buren St	0.51 Mi. N of Airport Blvd to Airport Blvd	0.51	2	2,100	D or better	2	Existing	10,900	13,000	F	1.02	4	Major	13,000	15,100	D or better
East. Coachella Vlly	Van Buren St	50th Ave to 0.5 Mi. N of 54th Ave	1.49	2	4,300	D or better	2	Existing	10,700	15,000	F	2.98	4	Major	12,500	16,800	D or better
Palo Verde Valley	S Lovekin Blvd	I-10 EB Offramp at Lovekin Blvd to 0.26 Mi. S of W 14th Ave	0.51	2	4,200	D or better	2	Existing	10,400	14,600	F	1.02	4	Secondary	16,100	20,300	D or better

Source: Riverside County staff.

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- The Baseline-Plus Project Conditions will more than double the number of miles of roadway that will operate at LOS E or LOS F compared to Baseline Conditions.

- GPA No. 960 will result in approximately 14.4% of roadways in Riverside County and the cities operating at LOS E or LOS F. This is approximately 4.5% less roadway segment miles when compared to the Existing General Plan.

The findings relative to roadway lane miles is similar:

- The Baseline-Plus Project Conditions will increase the percentage of roadways operating at LOS E or LOS F from 4.4% to 8.6%.

- GPA No. 960 will result in 15.9% of all lane miles operating at LOS E or LOS F, approximately 2.5 % less than the Existing General Plan.

Table 4.18-S (Matrix for Comparing Scenarios and Impacts (County Roads)) summarizes all Riverside County impacted locations under all analysis scenarios.

Table 4.18-T (Matrix for Comparing Scenarios and Impacts (City Roads)) summarizes all impacted city locations under all analysis scenarios. These facilities are not under Riverside County jurisdiction, and most of the impacts to these facilities are as a result growth within the cities. Any changes in roadway designation to address LOS deficiencies would need to be addressed within the context of the affected jurisdiction. The County of Riverside will work with all affected jurisdictions to coordinate transportation and circulation system standards and alignments.

GPA No. 960 (with or without city growth) will increase the number of facilities and the total roadway lane miles projected to operate at LOS D or E compared to Baseline Conditions. As such, this is considered a significant impact based on the significance criteria described above. However, GPA No. 960 (with or without city growth) shows improved operations when compared to Existing General Plan Conditions, but the impacts are still considered to be significant.

2. Regulatory Compliance for Impact 4.18.A

The existing Riverside County General Plan and GPA No. 960 include policies which contribute towards the reduction of impacts on Riverside County roadways. These policies are described below.

There are multiple policies which address travel by modes other than automobiles. For example, Circulation Element Policy C 1.2 addresses the need to provide a multi-modal transportation network that includes all modes of travel ranging from automobiles to pedestrians. Providing a robust transportation network that accommodates transit users, bicyclists and pedestrians will reduce the dependence on automobile travel, which should reduce vehicular travel and congestion. Policy C1.3 specifically addresses transit users by supporting the development of local and regional transit facilities. Additional transit patronage will also reduce vehicular travel, with a commensurate reduction in congestion. Policy C 1.7 addresses land use patterns that will reduce vehicular travel such as pedestrian-oriented development and mixed-use community centers. There are also specific policies related to pedestrian travel. Policy C 4.1 relates to the provision of pedestrian facilities within developments.

Other policies are oriented towards reducing impacts associated with individual developments. Policy C 2.4 requires that new development proposals mitigate their direct traffic impacts. Mitigating cumulative and indirect

traffic impact through fee programs and other similar methods is addressed through Policy C 2.5. Policy C 2.7 establishes at trip cap for the Highway 79 Policy Area which requires residential projects to limit their trip generation and provide sufficient infrastructure to support their development.

a. Compliance With Existing Mitigation Measures from EIR No. 441

EIR No. 441 was the document used to evaluate the 2003 General Plan. The following mitigations are included in EIR No. 441 with respect to transportation and circulation impacts:

Existing Mitigation Measure 4.16.1A: As part of its review of land development proposals, the County [of Riverside] shall require project proponents to make a "fair share" contribution to required intersection and/or roadway improvements. The required intersection and/or roadway improvements shall be based on maintaining the appropriate level of service (LOS D within Community Development Areas designated by the 2003 Riverside County General Plan and within adjacent jurisdictions; LOS C within those portions of unincorporated Riverside County outside of Community Development Areas). The fair share contribution shall be based on the percentage of project-related traffic to the total future traffic.

Existing Mitigation Measure 4.16.1B: As part of its review of land development proposals, the County [of Riverside] shall ensure sufficient right-of-way is reserved on critical roadways and at critical intersections to implement the approach lane geometrics necessary to provide the appropriate levels of services.

Existing Mitigation Measure 4.16.1C: The County [of Riverside] shall add a transportation corridor to its General Plan Circulation Element, if feasible, showing a connection between I-15 and the Orange County freeway system, and complete that portion of the CETAP program involving the bi-county corridor to Orange County as a means of relieving traffic congestion along State Route 91. The transportation corridor shall provide an alternative route for traffic on State Route 91 between I-15 and State Route 241.

GPA No. 960 is in compliance with Mitigation Measure 4.16.1B, however, Mitigation Measure 4.16.1A is affected by the proposed change in the LOS threshold for significance. New policies will impose similar mitigation measures and continue to provide for "fair share" participation in improvement measures to maintain appropriate levels of service. Mitigation Measure 4.16.1C included the bi-county corridor through the Cleveland National Forest. This corridor is not actively being studied by the RCTC at this time and was not included in the modeling for GPA No. 960. The County of Riverside has no jurisdiction over the planning for this facility and can no longer count on this facility as mitigation, as such, the facility is proposed to be removed from the Riverside County Circulation Element. The removal of this facility has been analyzed as part of the traffic modeling to evaluate the impacts of GPA No. 960.

b. Summary of Roadway Mitigation Recommendations for Impact 4.18.A

Table 4.18-U (Mitigation Recommendations for GPA No. 960 (Build Out)) summarizes the recommended roadway designation changes needed to mitigate impacted roadway facilities located in the unincorporated areas of Riverside County under the GPA No. 960 Build Out scenario. The table includes the proposed road designation as well as the designation necessary to mitigate roadway impacts. The last column of Table 4.18-U contains Recommendation Codes indicating whether the County of Riverside can adopt the Mitigation Designation for the respective roadway or if constraint(s) exists that would preclude the County of Riverside from implementing the Mitigation Designation. The codes are summarized below:

1. Recommend adoption of mitigation designation.

2. Implementation of mitigation would require coordination with other public agencies such as cities, Caltrans, Metropolitan Water District of Southern California (MWD), March JPA, federal agencies, etc.

3. Mitigation is affected by design constraints such as terrain, road standard exceptions and geometrics.

4. Implementation of mitigation would require overcoming development constraints such as pre-existing development limiting the ability to acquire right-of-way or provide widening of roads.

Of the 153 identified roadways in the table, 99 roadways have mitigation designations recommended for adoption. The remaining 54 roadways require coordination with other jurisdictions and/or are constrained by existing development or environmental considerations. These roadways have the recommendation cells shaded in gray.

Table 4.18-U contains all of the roadways that are subject to Riverside County's jurisdiction which were also listed in the several comparison Tables 4.18-M through 4.18-P. All of the other roadways listed fall outside the jurisdiction of Riverside County (i.e. State of California and cities). These roadways similarly have impacts which require mitigation measures. However since these roadways are not within the jurisdiction of Riverside County, the impacts may potentially remain significant unless improved by others to standards that are higher than those modeled.

Table 4.18-U Mitigation Recommendations for GPA No. 960 (Build Out)

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recommendations
Temescal Canyon	Bedford Canyon Rd	0.38 Mi. N Cajalco Rd - Eagle Glen Pkwy to E Foothill Pkwy	0.55	Collector - 2 Lanes	Mtn Art - 2 Lanes	4
Temescal Canyon	E 6th St	Magnolia Ave to Leeson Ln	0.23	Major - 2 Lanes	Secondary - 4 Lanes	2, 4
Temescal Canyon	E Foothill Pkwy	0.12 Mi. W Bedford Canyon Rd to Bedford Canyon Rd	0.12	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	2, 4
Temescal Canyon	E Foothill Pkwy	Bedford Canyon Rd to I-15 SB Ramps at El Cerrito Rd/Foothill Pkwy	0.06	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	2, 4
Temescal Canyon	E Ontario Ave	El Cerrito Rd to 0.67 Mi. NW El Cerrito Rd	0.67	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4
Temescal Canyon	Indiana Ave	0.53 Mi. SW Buchanan St to 0.26 Mi. SW Buchanan St	0.26	Secondary - 4 Lanes	Arterial - 4 Lanes	4
Temescal Canyon	Mc Kinley St	Magnolia Ave to Indiana Ave	0.43	Secondary - 4 Lanes	Mtn Art - 4 Lanes	4
Temescal Canyon	Serfas Club Dr	SR-91 EB Onramp at Auto Center Dr/Serfas Club Dr to Auto Center Dr	0.1	Major - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Temescal Canyon	Temescal Canyon Rd	Dos Lagos Dr to 0.05 Mi. N Temescal Canyon Rd Cutoff	2.26	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4, 5
Temescal Canyon	Temescal Canyon Rd	El Cerrito Rd to Cajalco Rd	1.12	Arterial - 4 Lanes	Urban Arterial - 8 Lanes	2, 4
Elsinore	W Foothill Pkwy	Mangular Ave to Green River Rd	1.7	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	2, 5
Elsinore	Dowling Rd	Riverside St to Greenwald Ave	0.91	Collector - 2 Lanes	Mtn Art - 2 Lanes	1, 2, 3
Elsinore	El Toro Rd	0.15 Mi. SW Mermack Ave to Nichols Rd	0.16	Major - 4 Lanes	Urban Arterial - 8 Lanes	4

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
Elsinore	El Toro Rd	2.27 Mi. N Mermack Ave to Mermack Ave	2.24	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1, 2, 3
Elsinore	El Toro Rd	3.03 Mi. N Mermack Ave to 4.89 Mi. N Mermack Ave	1.84	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1, 3
Elsinore	Greenwald Ave	Bella Vista to Riverside St	0.9	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1, 2
Elsinore	Hammack Ave	SR-74 to Telford Ave	1.09	Collector - 2 Lanes	Secondary - 4 Lanes	4
Elsinore	Horsethief Canyon Rd	Temescal Canyon Rd to De Palma Rd	0.17	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1, 2
Elsinore	Meadowbrook Ave	Peach St to SR-74	0.24	Secondary - 4 Lanes	Arterial - 4 Lanes	3, 4
Elsinore	Mermack Ave	Nichols Rd to Nichols Rd	0.36	Major - 4 Lanes	Urban Arterial - 6 Lanes	4
Elsinore	Nichols Rd	State Highway 74 to Mermack Ave	0.3	Major - 4 Lanes	Urban Arterial - 6 Lanes	2, 4
Elsinore	Nichols Rd	El Toro Rd to Mermack Ave	0.63	Major - 4 Lanes	Urban Arterial - 6 Lanes	4
Elsinore	Peach St	Telford Ave to Meadowbrook Ave	0.14	Secondary - 4 Lanes	Arterial - 4 Lanes	3, 4
Elsinore	Telford Ave	Peach St to Hammack Ave	0.65	Secondary - 4 Lanes	Arterial - 4 Lanes	3, 4
Elsinore	Temescal Canyon Rd	0.42 Mi. W Lake St to Horsethief Canyon Rd	1.84	Major - 4 Lanes	Urban Arterial - 6 Lanes	2, 3
Lk. Mathews / Woodcrest	Theda St	Ethanac Rd to 0.59 Mi. N River Rd	0.61	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
Lk. Mathews / Woodcrest	Alessandro Blvd	Old 215 Frontage Rd to I-215 SB Offramp at Alessandro Blvd	0.35	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
Lk. Mathews / Woodcrest	Cajalco Rd	0.25 Mi. W Alexander St to El Sobrante Rd	3.43	Expressway - 6 Lanes	Expressway - 8 Lanes	1
Lk. Mathews / Woodcrest	El Sobrante Rd	0.42 Mi. W McAllister St to McAllister St	0.42	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Lk. Mathews / Woodcrest	El Sobrante Rd	Mockingbird Canyon Rd to Cajalco Rd	1.06	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Lk. Mathews / Woodcrest	El Toro Rd	1.87 Mi. S Lake Mathews Dr to Lake Mathews Dr	1.84	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1, 4
Lk. Mathews / Woodcrest	Gavilan Hills Rd	Gavilan Rd to Lake Mathews Dr	1.97	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1
Lk. Mathews / Woodcrest	Gavilan Rd	Cajalco Rd to Gavilan Hills Rd	0.95	Secondary - 4 Lanes	Major - 4 Lanes	1, 3, 4
Lk. Mathews / Woodcrest	Harley John Rd	0.06 Mi. S Washington St to Washington St	0.06	Major - 4 Lanes	Arterial - 4 Lanes	1
Lk. Mathews / Woodcrest	La Sierra Ave	0.14 Mi. NW McAllister Pkwy to El Sobrante Rd	1.83	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4
Lk. Mathews / Woodcrest	La Sierra Ave	0.25 Mi. NW McAllister Pkwy to Victoria Ave	0.27	Arterial - 4 Lanes	Urban Arterial - 8 Lanes	2, 4

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
Lk. Mathews / Woodcrest	La Sierra Ave	0.25 Mi. NW McAllister Pkwy to 0.38 Mi. SE Victoria Ave	0.1	Arterial - 4 Lanes	Urban Arterial - 8 Lanes	4
Lk. Mathews / Woodcrest	La Sierra Ave	0.92 Mi. S El Sobrante Rd to El Sobrante Rd	0.92	Collector - 2 Lanes	Mtn Art - 2 Lanes	1, 2
Lk. Mathews / Woodcrest	Lake Mathews Dr	Gavilan Hills Rd to El Toro Rd	0.24	Secondary - 4 Lanes	Arterial - 4 Lanes	3
Lk. Mathews / Woodcrest	Lake Mathews Dr	El Toro Rd to Santa Rosa Mine Rd	0.2	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1
Lk. Mathews / Woodcrest	Markham St	Barton St to Cole Ave	0.68	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1
Lk. Mathews / Woodcrest	Mockingbird Canyon Rd	Van Buren Blvd to Markham St	2.4	Secondary - 4 Lanes	Arterial - 4 Lanes	3
Lk. Mathews / Woodcrest	Rider St	1.73 Mi. E Gavilan Rd to 0.75 Mi. W Brown St	1.48	Collector - 2 Lanes	Mtn Art - 2 Lanes	1
Lk. Mathews / Woodcrest	Santa Rosa Mine Rd	0.29 Mi. W Post Rd to Lake Mathews Dr	3.71	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1, 3, 4
Lk. Mathews / Woodcrest	Van Buren Blvd	0.79 Mi. W Wood Rd to Washington St	1.29	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
Lk. Mathews / Woodcrest	Van Buren Blvd	Washington St to 0.48 Mi. SE A St	2.83	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1
Lk. Mathews / Woodcrest	Victoria Ave	Fillmore St to La Sierra Ave	0.54	Collector - 2 Lanes	Mtn Arterial - 2 Lanes	4
Lk. Mathews / Woodcrest	Washington St	0.52 Mi. W Golden Star Ave to Hermosa Dr	0.68	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4
Lk. Mathews / Woodcrest	Washington St	Golden Star Ave to Van Buren Blvd	0.56	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4
Highgrove	Washington St	Van Buren Blvd to Nandina Ave	1.16	Major - 4 Lanes	Arterial - 4 Lanes	4
Highgrove	Box Springs Rd	I-215 NB Ramps at Fair Isle Dr/Box Springs Rd to 1.01 Mi. W Day St	0.34	Secondary - 4 Lanes	Arterial - 4 Lanes	2, 3, 5
Highgrove	Center St	Iowa Ave to N Orange St	0.6	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	2, 4
Highgrove	Central Ave	I-215 NB Offramp at Central Ave/Watkins Dr - Watkins Dr to Sycamore Canyon Blvd	0.1	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Highgrove	Central Ave	Lochmoor Dr to Sycamore Canyon Blvd	0.35	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Highgrove	Fair Isle Dr	Sycamore Canyon Blvd to I-215 NB Ramps at Fair Isle Dr/Box Springs Rd	0.12	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Highgrove	Iowa Ave	0.17 Mi. S Center St to Center St	0.17	Arterial - 4 Lanes	Urban Arterial - 8 Lanes	4
Highgrove	La Cadena Dr E	Center St to W Main St	0.26	Major - 4 Lanes	Urban Arterial - 8 Lanes	4
Highgrove	Mount Vernon Ave	Center St - Pigeon Pass Rd to Main St	0.25	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	4
Highgrove	Pigeon Pass Rd	Mount Vernon Ave to 1.44 Mi. E Mount Vernon Ave	1.44	Mtn Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
Highgrove	Sycamore Canyon Blvd	Central Ave to Fair Isle Dr	0.91	Secondary - 4 Lanes	Urban Arterial - 8 Lanes	4
March	Watkins Dr	I-215 NB Offramp at Central Ave/Watkins Dr to I-215 NB Onramp at Central Ave/Watkins Dr	0.1	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1, 3
March	Alessandro Blvd	I-215 SB Offramp at Alessandro Blvd to Brown St	0.39	Urban Art. - 6 Lanes	Expressway - 6 Lanes	2, 4
Mead Valley	Van Buren Blvd	I-215 SB Ramp at Van Buren Blvd to Orange Terrace Pkwy	1.89	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
Mead Valley	Brown St	Cajalco Rd to Post Rd	1.69	Secondary - 4 Lanes	Mtn Art - 4 Lanes	4
Mead Valley	Cajalco Rd	Brown St to Alexander St	0.5	Expressway - 6 Lanes	Expressway - 8 Lanes	1
Mead Valley	Ellis Ave	Post Rd to Belita Dr	0.21	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1
Mead Valley	Harley Knox Blvd	I-215 SB Ramps at Harley Knox Blvd to I-215 NB Ramps at Harley Knox Blvd	0.07	Mtn Arterial - 2 Lanes	Major - 4 Lanes	1
Mead Valley	Harvill Ave	Cajalco Expy to Orange Ave	1.98	Major - 4 Lanes	Urban Arterial - 6 Lanes	1, 3
Mead Valley	Markham St	Barton St to Alexander St	0.5	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1, 4
Mead Valley	Nandina Ave	Day St to Barton St	2.02	Secondary - 4 Lanes	Major - 4 Lanes	1, 2, 4
Mead Valley	Old Elsinore Rd	Anderson Rd to San Jacinto Ave	1.97	Secondary - 4 Lanes	Major - 4 Lanes	1, 4
Mead Valley	Old Elsinore Rd	San Jacinto Ave to Deprad St	0.5	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1, 4
Mead Valley	Placentia St	0.06 Mi. E Harvill Ave to Harvill Ave	0.06	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
Mead Valley	Post Rd	Deprad St - Santa Rosa Mine Rd to Ellis Ave	0.41	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
Mead Valley	Rider St	Seaton Ave to Patterson Ave	0.51	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
Mead Valley	Santa Rosa Mine Rd	0.29 Mi. W Post Rd to Post Rd	0.29	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	1
Sun City / Menifee Valley	Theda St	Ethanac Rd to Post Rd	0.33	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 3
Southwest Area	Scott Rd	Menifee Rd to 0.51 Mi. E Menifee Rd	0.5	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
Southwest Area	Briggs Rd	Leon Rd to Thompson Rd	0.43	Major - 4 Lanes	Urban Arterial - 6 Lanes	2, 4
Southwest Area	Clinton Keith Rd	0.88 Mi. E Meadowlark Ln - Whitewood Rd to 1.6 Mi. W Leon Rd	0.39	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
Southwest Area	Clinton Keith Rd	1.2 Mi. W Leon Rd to Leon Rd	1.2	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1
Southwest Area	Keller Rd	Rawson Rd to Washington St	1.17	Collector - 2 Lanes	Mtn Arterial - 2 Lanes	2, 3

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
Southwest Area	Leon Rd	Clinton Keith Rd to Briggs Rd	0.29	Major - 4 Lanes	Urban Arterial - 6 Lanes	4
Reche Cyn. / Badlands	Pala Rd	1.51 Mi. S Deer Hollow Way - Eastern Bypass to Deer Hollow Way - Eastern Bypass	1.51	Collector - 2 Lanes	Mtn Arterial - 2 Lanes	1, 2
Reche Cyn. / Badlands	Gilman Springs Rd	0.34 Mi. NW Bold Style Ave to 2.89 Mi. SE Bold Style Ave	3.23	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 4
Reche Cyn. / Badlands	Pigeon Pass Rd	0.56 Mi. N Sunnymead Ranch Pkwy to 3.05 Mi. E Mount Vernon Ave	1.08	Mtn Arterial - 4 Lanes	Urban Arterial - 6 Lanes	2, 4
Reche Cyn. / Badlands	Pigeon Pass Rd	1.44 Mi. E Mount Vernon Ave to 3.05 Mi. E Mount Vernon Ave	1.61	Mtn Arterial - 4 Lanes	Urban Arterial - 6 Lanes	3
Reche Cyn. / Badlands	Reche Canyon Rd	Moreno Beach Dr to Reche Canyon Rd Cutoff	5.04	Mtn Arterial - 4 Lanes	Arterial - 4 Lanes	2, 3
Reche Cyn. / Badlands	Reche Canyon Rd	2.36 Mi. W Reche Canyon Rd Cutoff to Reche Canyon Rd Cutoff	2.36	Mtn Arterial - 4 Lanes	Urban Arterial - 6 Lanes	3
Lakeview / Nuevo	Redlands Blvd	San Timoteo Canyon Rd to Locust Ave	2.54	Mtn Arterial - 2 Lanes	Mtn Art - 4 Lanes	1, 2
Lakeview / Nuevo	10th St	~~Lakeview Ave~~*Reservoir Ave* to Hansen Ave~~ - SS Blvd~~	~~0.7~~*0.9 8*	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1, 3
Lakeview / Nuevo	Evans Rd	Mid County Pkwy EB Ramps at Evans Rd to Orange Ave	0.54	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
~~Lakeview / Nuevo~~	~~Hansen Ave~~	~~10th St - SS Blvd to Brown Ave~~	~~0.25~~	~~Collector - 2 Lanes~~	~~Secondary - 4 Lanes~~	~~1, 3~~
Lakeview / Nuevo	Mid County Pkwy	Mid County Pkwy EB Offramp at ~~Town Center Blvd~~*B St* to Mid County Pkwy EB Onramp at Ramona Expy	~~3.61~~*3. 62*	Freeway - ~~3~~*6* Lanes	~~Urban Arterial~~*Freewa y*– 8 Lanes	2
Lakeview / Nuevo	Mid County Pkwy	1 Mi. E Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St* to Mid County Pkwy EB Onramp at ~~Town Center Blvd~~*B St*	2.15	Freeway - ~~3~~*6* Lanes	~~Urban Arterial~~*Freewa y* - 8 Lanes	2
~~Lakeview / Nuevo~~	~~Mid County Pkwy~~	~~Mid County Pkwy WB Offramp at Ramona Expy to Mid County Pkwy WB Onramp at Town Center BlvdB St~~	~~3.63~~	~~Freeway - 3 Lanes~~	~~Urban Arterial - 8 Lanes~~	~~2~~
~~Lakeview / Nuevo~~	~~Park Center Blvd~~*C St*	~~RR St to 0.24 Mi. E RR St~~	~~0.24~~	~~Major - 4 Lanes~~	~~Urban Arterial - 6 Lanes~~	~~1~~
Harvest Vlly. / Winchester	Ramona Expy	Mid County Pkwy EB Offramp to Orange Ave	0.11	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
Harvest Vlly. / Winchester	Briggs Rd	Olive Ave to Simpson Rd	0.34	Major - 4 Lanes	Arterial - 4 Lanes	1, 2
Harvest Vlly. / Winchester	El Callado	Grand Ave to Simpson Rd	0.29	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1
Harvest Vlly. / Winchester	Epiplaneia Way	Garbani Rd to Beeler Rd	0.5	Secondary - 4 Lanes	Major - 4 Lanes	1
Harvest Vlly. / Winchester	Garbani Rd	Eucalyptus Rd to Epiplaneia Way	0.23	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
Harvest Vlly. / Winchester	Grand Ave	Leon Rd to 1 Mi. W Winchester Rd	1.05	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1
Harvest Vlly. / Winchester	Grand Ave	Briggs Rd to Leon Rd	1	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
Harvest Vlly. / Winchester	Leon Rd	Holland Rd to La Piedra Rd	0.28	Urban Art. - 6 Lanes	Urban Arterial - 6 Lanes	1, 3
Harvest Vlly. / Winchester	Menifee Rd	Ellis Ave to Mapes Rd	1.02	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1
The Pass	St A	Winchester Rd to Beeler Rd	1.59	Secondary - 4 Lanes	Arterial - 4 Lanes	1, 3
The Pass	Bonita Ave	Magnolia St to Apache Trl	0.37	Major - 4 Lanes	Urban Arterial - 6 Lanes	1
The Pass	California Ave	Beaumont Ave to 0.39 Mi. S Westward Ave	0.22	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	3, 4
The Pass	California Ave	0.22 Mi. N Beaumont Ave to Westward Ave	0.39	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	4
The Pass	Cherry Valley Blvd	N Highland Springs Ave to 0.45 Mi. W N Highland Springs Ave	0.45	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	4
The Pass	Cherry Valley Blvd	0.52 Mi. E Patton Rd to Beckwith Ave	0.81	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
The Pass	Cherry Valley Blvd	0.77 Mi. E Beaumont Ave to Beaumont Ave	0.77	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
The Pass	Cherry Valley Blvd	1.21 Mi. W N Highland Springs Ave to 0.45 Mi. W N Highland Springs Ave	0.76	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
The Pass	Oak Glen Rd	1.75 Mi. N Beaumont Ave to 2.02 Mi. N Beaumont Ave	0.28	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
The Pass	Oak Glen Rd	1.75 Mi. N Beaumont Ave to Beaumont Ave	1.75	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1
The Pass	San Timoteo Canyon Rd	0.23 Mi. NW Live Oak Canyon Rd to Redlands Blvd	1.22	Mtn Arterial - 2 Lanes	Major - 4 Lanes	1
The Pass	Seminole Dr	0.61 Mi. W Apache Trl to Apache Trl	0.61	Secondary - 4 Lanes	Mtn Art - 4 Lanes	4
The Pass	Seminole Dr	Deep Creek Rd to Rushmore Ave	3.1	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1
The Pass	Westward Ave	Highland Home Rd to 0.63 Mi. W Sunset Ave	0.45	Major - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
San Jacinto Valley	I-10 Bypass	2.18 Mi. W Apache Trl to Apache Trl	2.18	Major - 4 Lanes	Urban Arterial - 6 Lanes	1
San Jacinto Valley	Cactus Valley Rd	Sage Rd to Curtis Rd	0.09	Mtn Arterial - 2 Lanes	Secondary - 4 Lanes	3
San Jacinto Valley	Devonshire Ave	California Ave to Warren Rd	0.8	Secondary - 4 Lanes	Mtn Art - 4 Lanes	1, 2
San Jacinto Valley	Gilman Springs Rd	Bridge St to Warren Rd	0.72	Arterial - 4 Lanes	Urban Arterial - 8 Lanes	1, 4
San Jacinto Valley	Mid County Pkwy	1 Mi. E Mid County Pkwy EB Onramp at ~~Park Center Blvd~~*C St* to Mid County Pkwy EB Offramp at Warren Rd	2.1	Freeway - ~~36~~ Lanes	~~Urban Arterial~~*Freeway* - 8 Lanes	2
W. Coachella Valley	Warren Rd	Gilman Springs Rd to Potter Rd	2.68	Secondary - 4 Lanes	Major - 4 Lanes	1

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
W. Coachella Valley	Desert Moon Dr	Ramon Rd to 0.37 Mi. S Ramon Rd	0.37	Collector - 2 Lanes	Secondary - 4 Lanes	4
W. Coachella Valley	Dillon Rd	Worsley Rd to SR-62	0.2	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Garnet Ave	Wall Rd to I 10 EB Offramp	3.72	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
W. Coachella Valley	Monroe St	54th Ave to Airport Blvd	1	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
W. Coachella Valley	N Indian Canyon Dr	Pierson Blvd to 18th Ave	3.01	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 4
W. Coachella Valley	N Indian Canyon Dr	1.4 Mi. N Mission Lakes Blvd to SR-62	1.49	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Palm Dr	20th Ave to Varner Rd	0.82	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1, 2
W. Coachella Valley	Ramon Rd	Unknown to Los Alamos Rd - Vista Chino	0.5	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
W. Coachella Valley	Ramon Rd	Desert Moon Dr to Monterey Ave - Sierra Del Sol	0.49	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Ramon Rd	Bob Hope Dr to Los Alamos Rd - Vista Chino	0.73	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1
W. Coachella Valley	Tamarack Rd	Haugen-Lehmann Way to Rushmore Ave	1.76	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Tamarack Rd	I 10 WB Offramp to Haugen-Lehmann Way	2.58	Secondary - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Varner Rd	I-10 WB Ramps at Varner Rd/Washington St to Washington St	0.15	Major - 4 Lanes	Arterial - 4 Lanes	1
W. Coachella Valley	Varner Rd	Da Vall Dr to 0.89 Mi. E Da Vall Dr	0.89	Arterial - 4 Lanes	Urban Arterial - 6 Lanes	1
W. Coachella Valley	Varner Rd	0.67 Mi. W Berkey Dr to Berkey Dr	0.66	Secondary - 4 Lanes	Mtn Arterial - 4 Lanes	1
W. Coachella Valley	Wall Rd	Garnet Ave to 20th Ave	0.27	Mtn Arterial - 2 Lanes	Mtn Arterial - 4 Lanes	1, 2
W. Coachella Valley	Washington St	Varner Rd to Country Club Dr	0.26	Urban Art. - 6 Lanes	Urban Arterial - 8 Lanes	1, 2
E. Coachella Valley	Whitewater Cutoff	0.14 Mi. E Tipton Rd to I-10 WB Offramp at Tipton Rd/Whitewater Cutoff	0.14	Secondary - 4 Lanes	Arterial - 4 Lanes	1, 2
E. Coachella Valley	66th Ave	Lincoln St to 0.97 Mi. E Lincoln St	0.97	Major - 4 Lanes	Arterial - 4 Lanes	1
E. Coachella Valley	Cottonwood Springs Rd	I-10 WB Ramps at Cottonwood Springs Rd to 6.82 Mi. S El Dorado Mine Rd	6.8	Collector - 2 Lanes	Secondary - 4 Lanes	1
Desert Center	Fillmore St	0.35 Mi. N 54th Ave to 54th Ave	0.35	Collector - 2 Lanes	Mtn Art - 2 Lanes	1, 2
Palo Verde Valley	Kaiser Rd	SR-177 to 11.91 Mi. N SR-177	11.91	Major - 4 Lanes	Urban Arterial - 6 Lanes	1
East County - Desert Area	Wiley's Well Rd	0.05 Mi. N I-10 WB Ramp at Wiley's Well Rd to I-10 EB Ramps at Wiley's Well Rd	0.2	Collector - 2 Lanes	Urban Arterial - 6 Lanes	1, 2

Area Plan	Road Segment	Limits	Miles	Project Designation	Mitigation Designation	Recom-mendations
East County - Desert Area	Chuckwalla Valley Rd	I-10 EB Ramps at Ford Dry Lake Rd/Chuckwalla Valley Rd to I-10 EB Ramps at Chuckwalla Valley Rd	16.24	Collector - 2 Lanes	Secondary - 4 Lanes	1
East County - Desert Area	Cottonwood Springs Rd	6.8 Mi. N I-10 WB Ramps at Cottonwood Springs Rd to El Dorado Mine Rd	6.82	Collector - 2 Lanes	Secondary - 4 Lanes	1
East County - Desert Area	El Dorado Mine Rd	Loop Rd to Cottonwood Springs Rd	22.9	Collector - 2 Lanes	Mtn Art - 4 Lanes	1
Riverside & Norco Cities	Gold Park	El Dorado Mine Rd to 2.28 Mi. N El Dorado Mine Rd	2.28	Collector - 2 Lanes	Secondary - 4 Lanes	1

Footnote: Recommendation Codes:
1 Recommend adoption of mitigation designation
2 Implementation of mitigation would require coordination with other public agencies such as cities, Caltrans, MWD, March JPA, federal agencies, etc.
3 Mitigation is affected by design constraints such as terrain, road standard exceptions and geometrics.
4 Implementation of mitigation would require overcoming development constraints such as pre-existing development limiting the ability to acquire right-of-way or provide widening of roads.

3. Findings of Significance for Impact 4.18.A

The implementation of GPA No. 960 will generally improve traffic conditions throughout Riverside County compared to the build out of the Existing General Plan. This is due to the decreased population estimates, decreased employment estimates, a refined roadway network and implementation of revised policies that provide more realistic parameters for mobility planning. However, the build out of GPA No. 960 will still result in increased traffic levels in the future that will contribute to deficient operations within its proposed circulation network. The proposed policies incorporated in GPA No. 960 in the Circulation and Land Use Element will partially address these deficient conditions. However; these policies will not fully address these deficiencies as shown in the foregoing tables, nor will the proposed revisions to the Riverside County Circulation Element fully mitigate these impacts. Therefore, the impacts to Riverside County roadways are considered to be significant and unavoidable.

B. Would the project conflict with an applicable Congestion Management Program (CMP)?

Impact 4.18.B - Conflict with an Applicable Congestion Management Program, Including, but Not Limited to Level of Service Targets and Travel Demand Measures, or Other Targets Established by the County Congestion Management Agency for Designated Roads or Highways: The local Congestion Management Program (CMP) is administered by the RCTC. The level of significance established in the CMP is LOS E. If a facility fails to operate at LOS D or better the local responsible agency is required to develop and implement a deficiency plan intended to bring the facility into compliance. The program also establishes criteria for the development of transportation models to evaluate future traffic conditions, as well as monitoring criteria to evaluate existing system operation and performance, and includes criteria for the analysis of development impacts on the CMP network of regionally significant roadways. Riverside County is in compliance with the applicable CMP and has policies to address impacts to regional roadways. GPA No. 960 will not adversely affect the local CMP and does, in fact, include policies to support the goals and objectives of the CMP. Therefore, the impact is considered less than significant.

1. Analysis of Impact 4.18.B

This analysis applies the RIVTAM model described in Section 4.18.5.1. The primary basis for analysis is compliance with applicable regulatory requirements.

At least biennially, RCTC will determine if the County of Riverside and cities are conforming to the CMP, including, but not limited, to the following:

a. Consistency with levels of service targets, except as provided in Section 65089.4.

b. Evaluation of performance of the transportation system.

c. Adoption and implementation of a deficiency plan pursuant to Section 65089.4 when highway and roadway level of service standards are not maintained on portions of the designated system.

In addition to conformity requirements referenced in specific sections of the Government Code, the County of Riverside and cities must work with the Congestion Management Agency (CMA) to provide Level of Service (LOS) monitoring information along the CMP System. To insure that the CMP System is appropriately monitored to reduce the occurrence of CMP deficiencies, proposed development projects can be evaluated by each affected agency to determine potential regional and sub-regional impacts along the CMP Systems. Riverside County actively participates in the RCTC CMP and is in full compliance of all requirements.

GPA No. 960 contains a number of policies which reduce the impact upon regional roadways, including Circulation Element Policy C 7.3 which directs the County of Riverside to incorporate regional planning documents such as the RTP and input from agencies such as RCTC and Caltrans to expedite the implementation of improvements to the state highway system. Policy C 7.4 addresses coordination between Riverside County and other agencies such as Caltrans, WRCOG and CVAG regarding future studies to address improvements, toll lanes and transportation corridor planning. These policies will assist with the timely delivery of regional roadway improvements, which will reduce congestion for persons traveling along the regional roadway system. In addition, Policy C 2.1, which raises the LOS threshold of significance to LOS D, is in compliance with LOS standards of the CMP, as the CMP only considers a facility to be deficient if it exceeds LOS E. This evaluation is based upon actual operating characteristics, not future forecasts. The traffic model used to assess the impacts of GPA No. 960 was developed in coordination with the RCTC and is in compliance with all CMP criteria.

Should the deficiencies forecast for implementation of GPA No. 960 actually come to pass, the CMP requires the development of deficiency plans to address the deficiencies and implement strategies to correct the deficiencies.

2. Findings of Significance for Impact 4.18.B

With the implementation of GPA No. 960, many freeway and expressway lane miles would operate at LOS E or F. The Existing General Plan polices and the revised policies will partially address these deficient conditions. However, these policies will not fully address these deficiencies and additional implementation actions may be needed once these conditions actually manifest. The CMP requires the development of deficiency plans to address actual operating deficiencies. GPA No. 960 will not adversely affect the local CMP and does, in fact, include policies to support the goals and objectives of the CMP. Therefore, the impact is considered less than significant.

C. Would the project result in a change in air traffic patterns?

Impact 4.18.C - Result in a Change in Air Traffic Patterns, Including Either an Increase in Traffic Levels or a Change in Location that Results in Substantial Safety Risks: Riverside County has 16 municipal airports located throughout the county. One of these facilities is the March Air Reserve Base, which not only serves military aircraft and missions, but also has a civilian component. In addition, the County of Riverside has developed a Land Use Compatibility Plan for the Chino Airport. Although Chino Airport is situated within the

County of San Bernardino, it is included within the Riverside County Airport Land Use Compatibility Plan because its impacts extend into Riverside County. Palm Springs International Airport is the only airport in Riverside County that has regularly scheduled commercial passenger flights.

Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. Compliance with existing laws, rules and regulations, including the Riverside County Airport Land Use Compatibility Plan would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.C

Analysis of this impact includes an evaluation of current and proposed policies, as well as consideration whether GPA No. 960 will result in any direct impacts to existing or proposed air facilities.

GPA No. 960 contains several policies related to air facilities. The most directly related policy is C.14.1, which directs the County of Riverside to coordinate planning efforts related to aviation facilities with airport authorities and other agencies. Several other policies, such as Policy LU 14.6, direct the County of Riverside to implement land use planning techniques to maintain the existing aviation facilities. Any development that might potentially impact existing airport facilities would be evaluated based upon the Riverside County Airport Land Use Compatibility Plan.

GPA No. 960 is not proposing any new airports or changes to the scale or operations of any of the existing airports. Should the County of Riverside propose to become the operator of, or to exercise its land use authority over, any new airports or alterations in the scale of any existing airport that would change air traffic patterns, increase air traffic levels or change air travel locations in ways that result in a substantial safety risk, the County of Riverside will comply with all applicable federal and state regulations to mitigate such risks.

2. Findings of Significance for Impact 4.18.C

GPA No. 960 will not affect air travel or air facilities. Therefore, the impact is considered less than significant.

D. Would the project alter waterborne or rail traffic?

Impact 4.18.D – Alter Waterborne or Rail Traffic: Riverside County does not have navigable waterways providing transport of people and goods. Therefore, the Circulation Element does not contain any policies related to waterborne travel. A number of intercontinental railway facilities do pass through Riverside County. These rail lines carry a substantial amount of produce and goods. In addition, many of these same rail lines service rail passengers within the region, accommodating such services as Amtrak and Metrolink.

Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County. Compliance with existing laws, rules and regulations would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.D

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies to address the waterborne and rail travel. GPA No. 960 provides several policies which directly touch on the issue of waterborne and rail travel.

Policy C 13.1 addresses the need to support a rail network and continue to expand new rail lines and stations. Policy C 13.4 relates to constructing grade separated facilities to improve traffic flow. Policy C 13.7 focuses on right-of-way dedication for future transit centers in community centers and/or major activity areas.

As discussed in 4.18.2-E, Riverside County does not have navigable waterways providing transport of people and goods. Therefore, the Circulation Element does contain any policies related to waterborne travel.

2. Findings of Significance for Impact 4.18.D

GPA No. 960 will not adversely affect waterborne and rail travel and does, in fact, encourage future improvement of rail systems. Therefore, the impact is considered less than significant.

E. Would the project substantially increase hazards due to a design feature or incompatible uses?

Impact 4.18.E - Substantially Increase Hazards Due to a Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment): Riverside County policies and design standards currently reflect state and federal rules, regulations and standards with respect to roadway design. Nothing proposed in GPA No. 960 would alter roadway design criteria. Several new policies will reinforce Riverside County's commitment to public safety in roadway design. Compliance with existing laws, rules and regulations would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.E

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies to address the safety of transportation users. GPA No. 960 provides several policies which directly touch on this issue of safety for transportation users as described below.

Policy C 3.4 allows Riverside County to use a variety of design techniques such as continuous flow intersections, provided that a detailed study has been completed showing that these facilities could improve safety. Policy C 3.23 directs Riverside County to consider the use of traffic calming techniques to improve safety in neighborhoods. Policy C 6.5 recommends the placement of access locations for properties to maximize safety.

2. Findings of Significance for Impact 4.18.E

GPA No. 960 will not adversely affect transportation safety. New policies proposed as part of GPA No. 960 encourage the use of design features to enhance public safety. Therefore, the impact is considered less than significant.

F. Would the project cause an effect upon or a need for new or altered maintenance of roads?

Impact 4.18.F - Cause an Effect Upon, or a Need for New or Altered Maintenance of Roads: Future development accommodated by GPA No. 960 would result in the construction of new roadways to service this growth. Compliance with existing laws, rules, regulations, policies and design standards would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.F

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies to address the maintenance of roads.

Three relevant policies, Policy C 3.1, C 3.2, and C 8.4, address the maintenance of roads. Policy C 8.4 describes the ongoing construction and maintenance projects through a multi-year Transportation Improvement Program (TIP). Additionally, a project identified under the TIP assesses whether demand levels justify the construction of the project which ensures roads are added to the county-maintained road system as they are needed. Other policies such as Policy C 3.7 and 3.8 focus on limiting heavy vehicle traffic to designated road systems to reduce the maintenance rate on other roads.

2. Findings of Significance for Impact 4.18.F

Although GPA No. 960 identifies the ultimate roadway network for Riverside County, actual construction of roads that would be accepted into the maintained system undergo a review process that identifies the timing of when roads are actually needed. This also includes ensuring that proper road maintenance is supported by the demand levels which contribute to maintenance revenue. This impact is, therefore, considered less than significant.

G. Would the project cause effect upon circulation effects during construction?

Impact 4.18.G - Cause an Effect Upon Circulation During the Project's Construction: No specific construction projects are proposed as a part of GPA No. 960. The amendment does, however, set the parameter for future construction of the General Plan network. Construction impacts will be evaluated and appropriate control measures enforced at the time of construction.

1. Analysis of Impact 4.18.G

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies to address the impacts of construction activities and traffic associated with GPA No. 960.

GPA No. 960 is a programmatic document and does not propose to construct any transportation facilities. Rather, it provides a framework with which subsequent plans and projects will be developed and processed. Similar to the Road Maintenance described above, according to Policy C 8.4 the County of Riverside prepares the TIP which establishes priorities and schedules the construction of Riverside County roadway projects. Policy C 20.6 and Policy C 20.15 address dust control and runoff during all stages of roadway construction. A project undergoes design and environmental review which provides a traffic control plan for the construction period of the project to maintain traffic circulation.

2. Findings of Significance for Impact 4.18.G

GPA No. 960 includes adequate policies to ensure construction-related impacts are reduced so that traffic circulation is maintained. This impact is, therefore, considered less than significant.

H. Would the project result in inadequate emergency vehicle access?

Impact 4.18.H - Result in Inadequate Emergency Access or Access to Nearby Uses: Current and proposed policies require provisions for adequate emergency access. Compliance with existing laws, rules, regulations, policies and design standards would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.H

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies to ensure adequacy of emergency vehicle access.

Policy C 3.24 requires Riverside County to provide a street network which ensures efficient routes by emergency vehicles. This policy also requires that the County of Riverside coordinate with the Fire Department and other emergency service providers during roadway planning and design efforts.

2. Findings of Significance for Impact 4.18.H

As discussed above, GPA No. 960 incorporates policies to ensure adequate emergency vehicle access. Therefore, this impact is considered less than significant.

I. Would the project conflict alternative modes of transportation?

Impact 4.18.I - Conflict with Adopted Policies, Plans or Programs Regarding Public Transit, Bikeways or Pedestrian Facilities, or Otherwise Substantially Decrease the Performance or Safety of Such Facilities: Future development accommodated by GPA No. 960 would increase rural, suburban and urban uses in Riverside County, thus, increasing the demand for alternative modes of transportation. GPA No. 960 provides multiple policies which are intended to promote the provision of alternative transportation facilities. Compliance with existing and proposed policies would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.18.I

The analysis of this topic focuses on regulatory compliance to ensure that there are appropriate policies related to transit users, bicyclists, and pedestrians. GPA No. 960 provides multiple policies which are intended to promote the provision of active transportation facilities.

Policy C 1.2 addresses the need to provide a multi-modal transportation network that includes all modes of travel ranging from automobiles to pedestrians. Policy C 1.3 specifically addresses transit users by supporting the development of local and regional transit facilities. Additional transit patronage will also reduce vehicular travel, with a commensurate reduction in congestion.

Policy C 4.1 relates to the provision of pedestrian facilities within developments. Policy C 4.2 limits barriers to pedestrian travel. Policy C 4.6 states that the County of Riverside can require the development proposals provide pedestrian facilities as a condition of approval.

Facilities for bicyclists are addresses in policies such as C 16.1, which direct the County of Riverside to implement the proposed Trail System. Policy C 16.2 requires that the County of Riverside develop the supporting

infrastructure for the trails system including parking, signage, maps, and other related items. Policy C 17.1 directly addresses proposed bicycle facilities to be developed in GPA No. 960.

Regulatory compliance for this impact relates to existing General Plan policies and revised General Plan policies.

2. Findings of Significance for Impact 4.18.I

GPA No. 960 incorporates policies to ensure adequate transit, bicycle, and pedestrian facilities. Therefore, this impact is considered less than significant.

4.18.6 Significance After Mitigation for Transportation and Circulation

Development and implementation activities resulting from the proposed project, GPA No. 960, would be subject to a number of existing state and federal laws, General Plan policies, Riverside County ordinances; Transportation Department procedures, standards and individual project conditions of approval. Implementation of and compliance with these laws, rules, regulations, policies, standards and mitigation measures will ensure that significant impacts to the circulation system are either avoided or minimized. Compliance with existing laws will ensure resources are appropriately identified and protected. Compliance with existing and proposed General Plan policies will ensure that any future development activities appropriately identify any known significant circulation impacts and fully mitigate or avoid any impacts to the greatest extent possible.

However, as identified in Section 4.18.5, a significant and unavoidable impact would occur with implementation of GPA No. 960: Impact 4.18.A related to level of service transportation policies.

A. Effectiveness of Proposed General Plan Policies

The Circulation Element policies provide a framework for development and implementation of the proposed multi-modal transportation system envisioned by the proposed General Plan. However, even with the specific identified policies, numerous faculties will operate at an unacceptable LOS. This is primarily due to physical barriers that prevent an alternative roadway from being implemented, environmental constraints that limit the ability to widen roadways beyond what is identified in the Circulation Element, or roadway classifications that are consistent with regional planning efforts (even though they may not provide sufficient roadway capacity). In conjunction with the proposed General Plan policies, the following mitigation measures will be implemented.

B. Mitigation Measures

NEW **Mitigation Measure 4.18.1A-N1:** As part of its review of land development proposals, the County of Riverside shall require project proponents to make a "fair share" contribution to required intersection and/or roadway improvements. The required intersection and/or roadway improvements shall be based on maintaining the appropriate level of service (LOS D or better). The fair share contribution shall be based on the percentage of project-related traffic to the total future traffic.

NEW **Mitigation Measure 4.18.1B-N1:** As part of its review of land development proposals, the County of Riverside shall ensure sufficient right-of-way is reserved on critical roadways and at critical intersections to implement the approach lane geometrics necessary to provide the appropriate levels of services.

NEW **Mitigation Measure 4.18.1C-N1:** Where needed and where appropriate, the County of Riverside shall seek ways and means to increase the capacity of Circulation Element roadways by such measures as adding through travel lanes or additional turning lanes without increasing the right-of-way width requirement for the classification of the facility

NEW **Mitigation Measure 4.18.1D-N1:** Where needed and where appropriate, the County of Riverside shall collaborate with Caltrans and other appropriate agencies to add auxiliary and mainline lanes on the freeway system within available right of way.

NEW **Mitigation Measure 4.18.1E-N1:** The County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop direct connections between the HOV/HOT lanes at the following freeway interchanges: I-15 at SR-91, SR-60 at SR-91/I-215 West junction, SR-60 at I-215 East junction and at other locations as needed. To the extent that such improvements may be possible within existing rights-of-way, environmental impacts would be less than significant.

NEW **Mitigation Measure 4.18.1F-N1:** Where appropriate, the County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop HOV lanes along the entire length of I-215 within Riverside County and along I-10 between the San Bernardino County line and Indio.

C. Significance after Mitigation

Although the identified policies and measures will reduce the impacts of GPA No. 960, there are still numerous roadways that are not expected to operate at an acceptable level. *Also, due to the multijurisdictional nature of many some of the noted mitigation measures, such as New Mitigation Measures 4.18.1E-N1 and 4.18.1F-N1, the County cannot guarantee the development of HOV and HOT lanes as the interstates are under the purview of Caltrans.* As such, the identified significant impacts are considered significant and unavoidable and are subject to a finding of overriding consideration.

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Section 4.19

Water Resources

Section 4.19 Water Resources

4.19.1 Introduction

Ensuring reliable water resources to meet essential water demands and maintaining water quality are critical for the continued growth, health and prosperity of Riverside County's populace. Accordingly, the purpose of this EIR chapter is to provide information on Riverside County's water resources issues, with a particular focus on current and projected supplies in comparison to current and projected demands, and to highlight the potential effects of the proposed project, General Plan Amendment No. 960 (GPA No. 960), on water resources. The ultimate aim is to assist the County of Riverside in making land use decisions for this proposed General Plan Amendment in a manner that recognizes and accounts for the various factors affecting water resources and ensures the continued availability of a safe, sufficient and reliable water supply.

The existing environmental setting information in this chapter is presented in three parts: first, hydrology is described, then statewide and regional water supplies and, lastly, local water supplies are discussed. The regional information also includes a brief summary of information addressing recent environmental, legal and regulatory issues affecting water supply and demand. Further details are provided in Appendix EIR-8, along with a variety of other background information on water supply. The information and analyses regarding current and projected local water supplies and water demands are presented from the perspective of recent 2010 Urban Water Management Plans prepared by regional wholesale and local retail water agencies throughout Riverside County that provide water service to the areas affected by GPA No. 960. This discussion also addresses the areas of GPA No. 960 that are not currently within the boundaries of a water purveyor. Additionally, there is a section on project effects and, in the final section, potential environmental impacts to water resources are analyzed based on the information provided herein and in Appendix EIR-8.

Given the complexity of the task for a county that spans roughly 7,200 squares miles, multiple major watersheds and dozens of individual water districts and other water agencies, it should be remembered that this EIR chapter takes a programmatic approach suitable for the broad nature of the General Plan changes proposed under GPA No. 960. Further, as explained in greater detail below, since no specific land use development is proposed as part of GPA No. 960, the water supply assessment requirements of Senate Bill 610 (California Water Code [CWC] Section 10910 *et seq.*) and the written verification requirements of Senate Bill 221 (California Government Code [CGC] Section 66473.7) do not apply. Rather, in accordance with CGC Section 65302.2 and its related provisions, the water supply analysis for GPA No. 960 has been prepared by using and relying upon the information and analyses for current and projected supplies and demand developed by regional and local urban water suppliers in Riverside County under their recently adopted 2010 Urban Water Management Plans. Other current and relevant documentation, such as the California Water Plan Update 2009, various integrated regional water management plans and other regional and local water resource information, have also been referenced, utilized and relied upon in preparing this analysis.

The end result is a comprehensive, robust and candid evaluation that ensures Riverside County's decision-makers have all of the necessary current and relevant information at hand to understand the environmental and water-related consequences of their decisions and to provide a framework for implementing programmatic measures, if necessary, to reduce environmental impacts to water resources at the county level that may be associated with the proposed project in accordance with applicable CEQA standards.

A. Background

Historically, water supplies and water supply issues in California have been unique and variable. ~~Indeed, while California as a whole is not a 'water-short' state,~~ *Several* factors *relating to California's water supply* such as annual hydrology, distribution capabilities, competing demands and regulatory constraints have presented significant challenges. At the same time, however, these challenges have fostered new opportunities and innovative paths to more effective and efficient water use practices. Water supply planning in California has evolved to fit this ever-changing set of circumstances. As always, capture and storage of water in above-normal years for use in below-normal years is critical to statewide, regional and local water supply sufficiency. Similarly, adequate infrastructure, storage and conveyance facilities continue to be essential. Diversification is key when maximizing the treatment and use of recycled water, stormwater runoff and brackish, and other deteriorated sources, *as these* will play a vital role in local water supplies. Moreover, emerging technologies and evolving approaches to desalination suggest that the ocean will provide an increasing percentage of the state's water supply by the year 2030 and beyond. And recently, perhaps more than ever before, water conservation and demand management efforts are being developed and implemented, from both a legal and a lifestyle perspective, as a means of ensuring long-term water supply sufficiency while allowing statewide, regional and local growth to proceed along forecasted patterns to accommodate increases in California's population.

As set forth in greater detail below, wholesale and retail water agencies throughout Riverside County maintain and manage diversified water supply portfolios (imported supplies, local surface water supplies, groundwater, recycled water, desalinated supplies, etc.) The water supply and demand analyses undertaken by those agencies as part of their 2010 Urban Water Management Plans (UWMPs) are particularly current and constitute the best available information for use in preparing the water supply analysis for GPA No. 960, as those UWMPs have been recently prepared pursuant to the requirements of the Urban Water Management Planning Act (CWC Section 10610 *et seq.)* and the Water Conservation Act of 2009 (CWC Section 10608 *et seq.*), also referred to by its Senate bill identifier, SBX7-7. The information and analyses are based on long-term, 20-year projections and beyond, and specifically account for normal, single-dry and multiple-dry year periods. Indeed, the 2010 UWMP analyses fully recognize that California will experience variable hydrologic conditions, including multi-dry year periods, and they account for that variability in their projected supply forecasts.

Over the past three years, California developed drought conditions due to a lack of rain and snowfall. In 119 years of recorded history, 2013 was the driest year for the state of California. The launch of 2014 saw the longest stretch of winter with no rain ever recorded. In January 2014, Governor Edmund G. Brown Jr. declared a drought State of Emergency as conditions continue to worsen. On April 1, 2014, the California Department of Water Resources measured the statewide water content of snowpack at 32% of the average historical April 1 snowpack measurement. This figure is crucial, as this is when snowpack normally peaks and begins to melt into streams and reservoirs. On April 25, 2014, Governor Brown issued an executive order to speed up actions necessary to reduce harmful effects of the drought. During times of drought, vegetation is visibly dry, stream and river flows decline, water levels in lakes and reservoirs fall, and the depth to water in wells increases. As drought persists, long-term impacts can emerge such as groundwater level declines, land subsidence, increased wildfire risk and ecosystem damage.

The U.S. Drought Monitor depicts western Riverside County in Extreme Drought, central Riverside County in Severe Drought and Eastern Riverside County in Moderate Drought. As mentioned above, Riverside County maintains a diverse water supply portfolio,

which helps prepare for dry times. Reliance on groundwater increases during droughts usually occurs, due to a decreased availability on surface water. Water agencies also put drought contingency plans into place to help conserve water and prevent waste.

As detailed in later subsections, the UWMP analyses also include specific responses to potential water supply reductions, ranging from water supply allocation plans to ordinances that impose indoor and outdoor water budgets, tiered-rate structures, landscape efficiencies and other measures to achieve extraordinary conservation. These types of measures manage demand during dry periods while specifically allowing forecasted growth to occur. The UWMP analyses further show that it is common for the wholesale and retail water agencies in Riverside County to exceed the minimum analytical requirements and prepare their demand forecasts based on SCAG data, plus local economic studies and other demographic trends. This is a conservative approach, but it provides particularly relevant data for planning and environmental review purposes. As shown herein, the water demands associated with GPA No. 960 are part of demands that have been forecasted and accounted for by the relevant wholesale and retail agencies throughout Riverside County.

B. Project Summary and Focus

GPA No. 960 is a periodic update to the Riverside County General Plan to ensure the existence of a clear and consistent set of directions for implementing the Riverside County Vision for the next five to eight years and into the future. GPA No. 960 specifically includes Land Use Element changes, which involve elimination or implementation of study areas, policy areas and overlays, as well as changes in land use designations, which may allow for intensification or redistribution of land uses in certain areas.

Although GPA No. 960 is countywide in overall scope, the focus of its effects on water resources can be narrowed based on spatial factors. There is a focused range of items within GPA No. 960 with the potential to specifically affect future water usage. These revolve chiefly around the aspects of the project affecting land use and future build out within certain areas of Riverside County.

Accordingly, to determine the appropriate focus for this chapter, spatial analysis of potential water use areas was performed. Specific land use changes (for example, proposed changes to General Plan Land Use Designations [LUDs]) were identified and sorted geographically according to water provider, if any. In this way, it was determined that only a handful of the more than three dozen water providers in Riverside County would be directly affected by the land use-related items in GPA No. 960. Accordingly, this chapter focuses on the specific agencies and districts expected to see future land use changes as a result of the proposed project. A brief overview of the areas and water supply agencies affected by the land use-related changes under GPA No. 960 is provided in Table 4.19-A (Summary of Water and Sewer Providers Within Riverside County), below. This table identifies the water agencies in which a land use change having the potential to affect water demand is proposed. Additional information on these districts is provided in Section 4.19.4. Figure 4.19.1 (Water Districts Serving Western Riverside County) and Figure 4.19.2 (Water Districts Serving Eastern Riverside County) show the water supply agencies serving Riverside County.

Of the roughly 111,500 acres addressed directly by GPA No. 960, a total of approximately 5,000 acres are served by water supply agencies in western Riverside County and roughly 3,800 acres are served by water supply agencies in eastern Riverside County. Roughly 70,500 acres of the total are proposed land use changes in areas currently outside the water service boundaries of an existing water supply agency. However, aside from changes related to the Blythe Airport area, the majority of the proposed changes under GPA No. 960 for such out-of-agency areas are for extremely low-density (e.g., 1 home per 20 acres) rural residential uses, including the areas of reduced development potential within the Aguanga and Anza Rural Village Study Areas (6,100 acres and 71,000 acres, respectively). Lastly, over 22,000 acres of vacant (undeveloped) land would be designated as 'Open Space-Conservation' (OS-CH) under the proposed project to denote their acquisition for habitat conservation. These

conservation lands are not addressed as part of the water supply and demand analyses of this chapter, as no water supply or demand is associated with them.

Lastly, it should be noted that since this project proposal and EIR predate the incorporation of the cities of Jurupa Valley and Eastvale, project components within these two cities are included in this EIR analysis. Though the County of Riverside no longer has discretionary authority *over* ~~the lands now in these~~ *Jurupa Valley and Eastvale*, their inclusion in this document *provides* a more complete picture of the water supplies and resources affected by development within western Riverside County.

C. Background on Water Thresholds

Except as specifically noted, this water supply analysis for GPA No. 960 provides a programmatic level of review according to the standards set forth by CEQA. A program EIR is typically prepared for an agency plan, program or series of actions that can be characterized as one large project, such as a general plan. Under CEQA and its implementing regulations, 'tiering' refers to the concept of a multilevel approach to preparing environmental documents (State CEQA Guidelines, Sections 15152 and 15168). The water supply analysis provided herein is intended to be utilized as a 'first tier' document to evaluate the environmental impacts to water resources potentially resulting from the adoption of GPA No. 960 as an initial planning decision upon which subsequent, more specific land use decision making can be based in the future.

Accordingly, this water supply analysis does not necessarily address the specific potential impacts that may result from any of the future site/project-specific development proposals that may occur in areas affected by GPA No. 960. CEQA requires that subsequent development projects be evaluated for their particular site-specific impacts. Such site-specific analyses would be encompassed in 'second tier' documents, such as a project EIR, focused EIR or negative declaration to evaluate the potential environmental impacts of specifically defined projects to be proposed in accordance with the large-scale planning decisions adopted under GPA No. 960.

Thus, for purposes of this analysis and in accordance with the standards set forth by CEQA, significant impacts to water resources would result under the following scenarios:

1. Result in water supplies insufficient or unavailable to serve the project from existing entitlements and resources, or result in the need for new or expanded entitlements.

2. The project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

3. The project would substantially degrade water quality.

4. The project would violate any water quality standards or waste discharge requirements.

5. The project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

6. Result in a determination by a wastewater treatment provider which serves or may serve the project that it would not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

7. The project would require or result in the construction of new water or wastewater facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

8. The project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

9. The project would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

10. The project would require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Table 4.19-A: Summary of Water and Sewer Providers Within Riverside County

Wholesale and Retail Water Entities	Local Supply			Imported Supply	Imported Water Supplier[1]	Waste-water		NOTES	Study Area[2]
	Surface	Groundwate	Recycled			Collection	Treatment		
Western Riverside County									
Metropolitan Water District of Southern California (MWD)				●	**SWP, CR**			1, 2	◊
Eastern Municipal Water District (EMWD)	●	●	●	●	MWD	●	●	3, 4, 11	◊
City of Hemet, City of Perris, City of San Jacinto, City of Menifee, City of Temecula, Nuevo MWC, Moreno Valley MWC	●	●	●	●	EMWD	●	●		
Elsinore Valley Municipal Water District (EVMWD)	●	●	●	●	EMWD & WMWD	●	●	3, 4	◊
Lake Hemet Municipal Water District (LHMWD)	●	●		●	EMWD	●			◊
Murrieta County Water District (MCWD)		●		●	EMWD	●		4, 9, 11	
Rancho California Water District (RCWD)	●	●	●	●	EMWD & WMWD	●	●	6,*14*	◊
Western Municipal Water District (WMWD)	●	●	●	●	**MWD**	●	●	3, 4, 5, 11	◊
Box Springs MWD, City of Corona, City of Norco, City of Wildomar, Eagle Valley MWC, Santa Ana River Water Company	●	●	●	●	WMWD	●	●	4	
City of Riverside	●	●	●	●	WMWD	●	●	3, 4	
Elsinore Valley Municipal Water District (EVMWD)	●	●	●	●	EMWD & WMWD	●	●	3, 4	◊
Elsinore Water District (EWD)		●	●	●	WMWD/ EVMWD				◊
Home Gardens County Water District (HGCWD)		●		●	WMWD/ City of Riv.				
Jurupa Community Service District (JCSD)		●		--	---	●		8	◊
Lee Lake Water District (LLWD)		●	●	●	WMWD	●	●		◊
Rancho California Water District (RCWD)	●	●	●	●	EMWD & WMWD	●	●	6,*14*	◊
Rubidoux Community Service District (RCSD)		●		--	---	●		4	◊
San Bernardino Valley Municipal Water District (SBVMWD)	●			●	**SWP**			1, 2, 5, 10	◊
City of Riverside, City of Yucaipa, City of Calimesa		●			SBVMWD, YVMWD	●	●	13	
West Valley Water District (WVWD)		●		●	SBVMWD			4, 10, 11	

Wholesale and Retail Water Entities	Local Supply: Surface	Local Supply: Groundwater	Local Supply: Recycled	Imported Supply	Imported Water Supplier[1]	Waste-water: Collection	Waste-water: Treatment	NOTES	Study Area[2]
Yucaipa Water District (YWD)	●	●	●	●	SBVMWD & SGPWA	●	●	4, 10	
Pass & Central Mountainous Riverside County									
San Gorgonio Pass Water Agency (SGPWA)		●		●	**SWP**			1, 2, 4	◊
City of Banning (& High Valleys WD), City of Beaumont, South Mesa WC, Banning Heights Municipal Water Co., Ruisenor Water District (paper-district; no services provided)		●		●	SGPWA	●	●	7, 11	
Beaumont-Cherry Valley Water District (BCVWD)		●	●	●	SGPWA		●	4, 11	
Yucaipa Valley Water District (YVWD)	●	●	●	●	SGPWA & SBVMWD	●	●	4, 10	
Cabazon County Water District (CCWD)		●		●	SGPWA				
Fern Valley Water District (FVWD)	●	●		--	---			4	
Idyllwild (County) Water District (IWD)	●	●		--	---	●	●		
Pine Cove (County) Water District (PCWD)		●		--	---				◊
Pinyon Pines County Water District (PPCWD)		●		--	---				
Eastern Riverside County									
Coachella Valley Municipal Water District (CVMWD)		●	●	●	**SWP, CR**	●	●	1,3,4,10,11	◊
Coachella Water Authority / City of Coachella		●		--	---			4	
Indio Water Authority / City of Indio		●		--	---			11	
Desert Water Agency (DWA)	●		●	●	**SWP**	●		1, 3, 11	◊
Mission Springs Water District (MSWD)		●		●	DWA	●	●	11	◊
Palo Verde Irrigation District (PVID)					**CR**			12	◊
Sewer Services Only									
Edgemont Community Services District						●			
Home Gardens Sanitary District						●			
Coachella Sanitary District (City of Coachella)						●	●		
Valley Sanitary District						●	●		
Mecca Sanitary District						●			◊

Key: CR = Colorado River; MWC = Mutual Water Company; MWD = Municipal Water District; --- = Does not utilize; SWC = State Water Contractor; SWP = State Water Project; WD = Water Company; WD = Water District

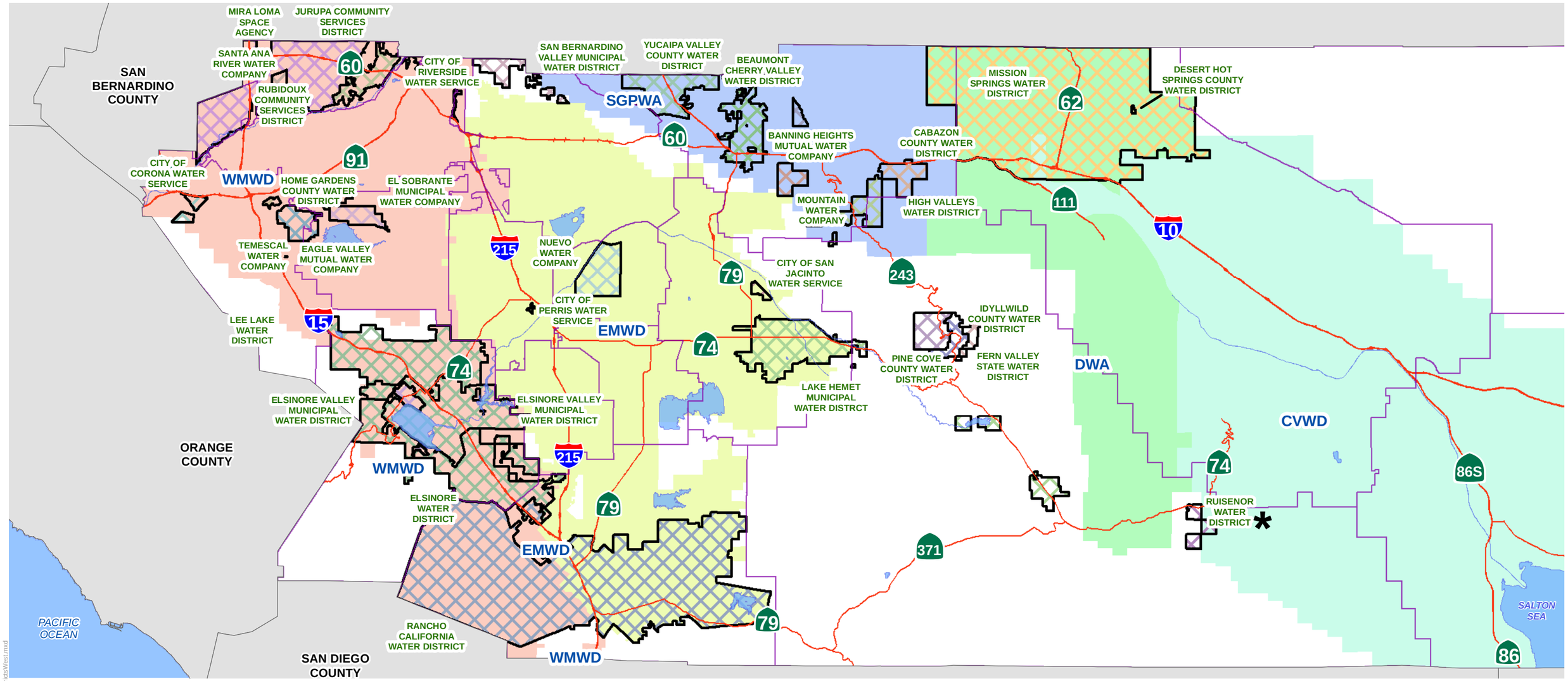
Notes:

1. State Water Contractor (SWC).
2. Wholesale provider only. No retail water connections.
3. Wholesale provider and also retail provider.
4. Provides water treatment (pre-distribution).
5. Also receives water from EMWD.
6. Imports water from both EMWD and WMWD, and has direct connection to MWD.
7. City of Beaumont is served by Beaumont-Cherry Valley Water District.
8. Serves newly incorporated cities of Jurupa Valley and Eastvale.
9. Absorbed by WMWD in 2005.
10. Multi-county service area: serves portion of Riverside County in addition to San Bernardino County (except for CVWD which serves Riverside County plus a portion of Imperial County).
11. Provides 'groundwater management' duties according to LAFCO Municipal Service Review reports.
12. Non-potable water supplier only. No domestic water service.
13. The majority of this agency's purveyors are in San Bernardino County (and are not listed here). See Table 4.19-AH.
14. *Also provides groundwater management.*

Footnotes:

1. State Water Contractors and major wholesalers in bold. Sub-agencies not predominantly serving unincorporated Riverside County areas are denoted in *italics* immediately following their associated wholesale provider.
2. Diamond denotes water entity with project (GPA No. 960) land use changes identified within its service boundaries.

Sources: DWR, California Water Plan 2009 Update, Table SC-1, 2009. Riverside County LAFCO, Water and Wastewater Municipal Service Review Reports (Western Riverside and Coachella Valley; Pass/Mountain Area), 2005. *Rancho California Water District, letter to Kristi Lovelady, June 30, 2014.*



- Banning Heights Mutual Water Company
- Beaumont Cherry Valley Water District
- Cabazon County Water District
- City of Corona Water Service
- City of Perris Water Service
- City of Riverside Water Service
- City of San Jacinto Water Service
- Desert Hot Springs County Water District
- Eagle Valley Mutual Water Company
- El Sobrante Municipal Water Company
- Elsinore Valley Municipal Water District
- Elsinore Water District
- Fern Valley State Water District
- High Valley Water District
- Home Gardens County Water District
- Idyllwild County Water District
- Jurupa Community Services District
- Lake Hemet Municipal Water District
- Mission Springs Water District
- Mountain Water Company
- Nuevo Water Company
- Pine Cove County Water District
- Rancho California Water District
- Rubidoux Community Services District
- Ruisenor Water District (Paper Only)
- San Bernardino Valley Municipal Water District
- Santa Ana River Water Company
- Temescal Water Company
- Yucaipa Valley County Water District
- CVWD
- DWA
- EMWD
- PVID
- SGPWA
- WMWD
- Exists on Paper Only
- Highways
- Area Plan Boundary

Data Source: Riverside County (2009)

Figure 4.19.1

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WATER DISTRICTS SERVING WESTERN RIVERSIDE COUNTY

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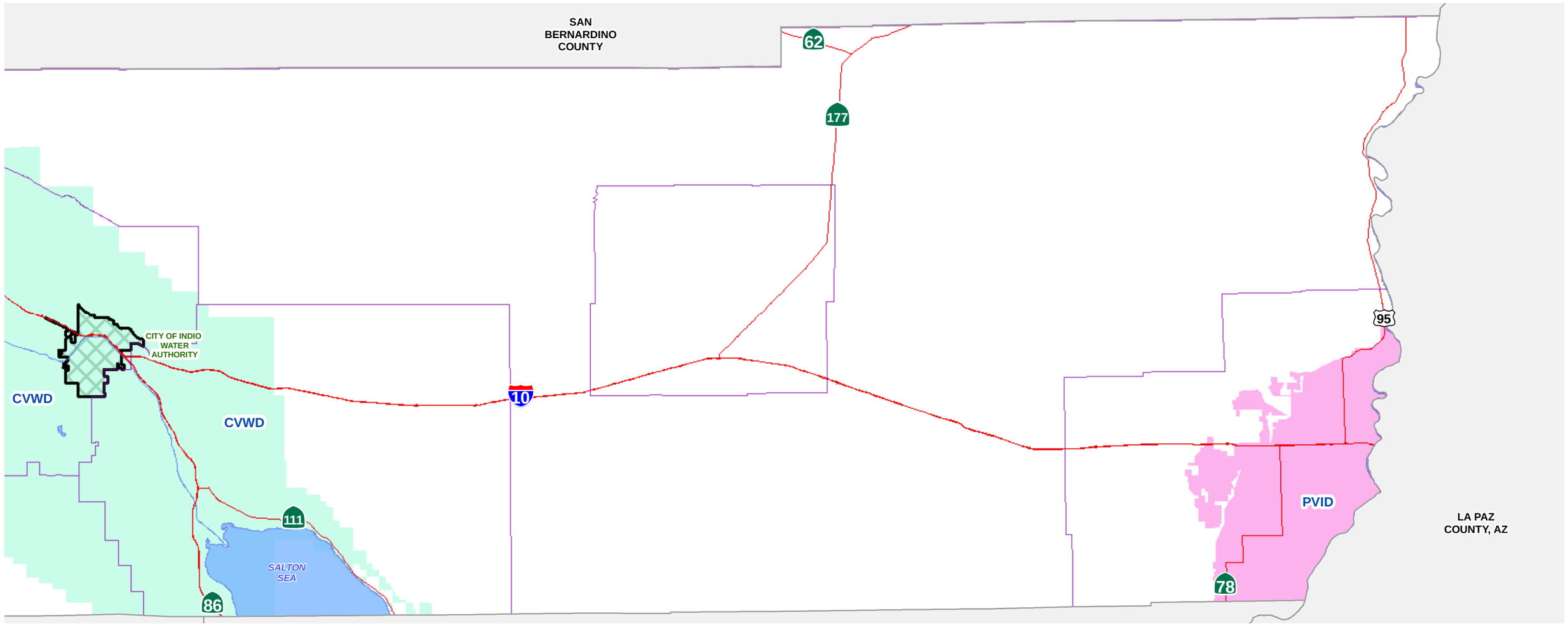

Data Source: Riverside County (2009)

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City of Indio Water Authority
CVWD
PVID
Highways
Area Plan Boundary

Figure 4.19.2

December 16, 2013

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WATER DISTRICTS SERVING EASTERN RIVERSIDE COUNTY

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In light of the thresholds identified above, it is important to recognize that the California courts have provided specific guidance with respect to the requirements of a water supply analysis that is undertaken for a long-range development project or other long-range land use planning decision, such as a general plan update. In particular, the courts have drawn a clear distinction between long-term development projects and planning decisions, on the one hand, and short-term project-specific approvals, on the other hand. In drawing this distinction, the courts have consistently upheld the rule that far less water supply certainly is required at the early stages of planning and development in comparison to the higher degree of certainty that is required at the point of authorizing a specific land use entitlement, such as a tentative tract map.

In this regard, the California Supreme Court has stated: "Requiring certainty when a long-term, large-scale development project is initially approved would likely be unworkable, as it would require water planning to far outpace land use planning. Examination of other state statutes specifically addressing the coordination of land use and water planning supports our conclusion [that] CEQA should not be understood to require assurances of certainty regarding long-term future water supplies at an early phase of planning for large land development projects" (Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, 2007, 40 Cal.4th 412, 432). The court further stated: "[T]he burden of identifying likely water sources for a project varies with the stage of project approval involved; the necessary degree of confidence involved for approval of a conceptual plan is much lower than for issuance of building permits." Indeed, it added, to "interpret CEQA itself as requiring such firm assurances of future water supplies at relatively early stages of the land use planning and approval process would put CEQA in tension with these more specific water planning statutes." In light of these rules, the court found that: "CEQA does not demand such certainty at the relatively early planning stage involved here…to satisfy CEQA, an EIR for a specific plan need not demonstrate certainty regarding the project's future water supplies." Without question these standards articulated by the Vineyard Court apply to water supply analyses prepared for purposes of the general planning process, as that stage of land use planning is even more preliminary than the specific plan stages of land use decision-making addressed by Vineyard.

In the more recent case of Watsonville Pilots Association v. City of Watsonville (2010, 183 Cal.App. 4th 1059), the EIR for the Watsonville Vista 2030 General Plan was challenged on various grounds, including water supply. Quoting from the Vineyard decision, the Court of Appeal in Watsonville Pilots upheld the water supply analysis on various grounds and determined that "[t]he burden of identifying likely water sources for a project varies with the state of project approval involved; the necessary degree of confidence involved for approval of a conceptual plan is much lower than for issuance of building permits." The EIR in that case acknowledged that water supply for the general plan area would be provided from an already overdrafted groundwater basin. The court found that the EIR contained considerable information and discussion of how the overdraft may be addressed in the future and stated: "It is not necessary for an EIR for a general plan to establish a likely source of water. Such a conceptual EIR need only adequately address the reasonably foreseeable impacts of supplying water to the project, note any uncertainties that preclude the identification of future water sources and discuss the reasonably foreseeable alternatives and environmental impacts of those alternatives."

The court held that the Final EIR satisfied this standard because it: identified the likely source of water for new development in the affected general plan area (groundwater); noted the unknown and variable factors related to the basin's overdraft condition; discussed the various measures that were being undertaken to address the long-term overdraft situation; and concluded that water demands resulting from the new development would be offset by conservation, conversion of agricultural lands to urban uses and other measures. As the Court of Appeal noted: "[T]he long-term overdraft problem will continue to be a concern regardless of the 2030 General Plan."

In another recent case, Sonoma County Water Coalition v. Sonoma County Water Agency (2010, 189 Cal.App.4th 33), the Court of Appeal upheld the legal sufficiency of a 2005 UWMP prepared by the Sonoma County Water

Agency. In that case, the court likened the long-range water supply planning function of an UWMP to the long-range development plan reviewed in Vineyard. Of particular relevance to the long-term water supply planning horizon analyzed in this EIR for purposes of GPA No. 960, the Court of Appeal reasoned: "[S]ome level of uncertainty is a permanent, inherent feature of modern water management. It arises from a wide range of scientific and legal regulatory factors that cannot be avoided. Water management is subject to the vagaries of climate, competing demands from agricultural, industrial and residential uses, environmental constraints and overlapping regulatory regimes at both the federal and state levels." The court also noted that for purposes of preparing a long-term water supply analysis there is an implicit legislative recognition that such planning and analysis "involves expectations and not certainties." While new or expanded water supply sources always have the possibility of not materializing, water agencies must have some ability to reasonably rely on planned future water projects and programs; a long-term water supply analysis is not required to assume or analyze contingencies upon contingencies for theoretical circumstances that might never arise.

Accordingly, these issues are taken up at the first tier level in this EIR; see Section 4.19.7 (Project Effects) and Section 4.19.8 (Impacts and Mitigation). The rest of this EIR chapter's sections, as well as the information included in Appendix EIR-8, serve as the basis for the conclusions made in these two aforementioned sections.

4.19.2 Existing Environmental Setting - Hydrology

A. Baseline, Data Sources and Documents Used

Pursuant to CEQA, the description of the physical environmental conditions provided in this EIR are as they existed on or about April 13, 2009, at the time the Notice of Preparation (NOP) was issued. This environmental setting will constitute the baseline physical conditions by which the County of Riverside, as Lead Agency under CEQA, determines whether an impact is significant.

Because of the countywide scope and nature of this project and its programmatic EIR, as well as the nature of the project's water supplies and water resources, much of the data presented herein cannot all be said to represent a single point in time (i.e., April 13, 2009). In such cases, the data set that is best supported by substantial evidence is used and a discussion of how it is or is not expected to differ from existing physical conditions is provided. It should be noted here that 'substantial evidence' refers to "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact" (Public Resources Code [PRC] Section 21080(e)(1)). Further, substantial evidence does not include "argument, speculation, unsubstantial opinion or narrative, evidence of social or economic impacts that do not contribute to, or are not cause by, physical impacts on the environment."

For the baseline data presented herein and as referenced in other sections of this chapter, the sources of information and analysis that were utilized and relied upon were each determined to be the best-supported and best available information. These sources of information and analyses generally represent the most recently adopted policies, plans, data and statistics for each subject matter and for each respective agency as they relate to GPA No. 960. The 2009 California Water Plan Update (CWP, herein) provides an accurate and appropriate baseline description of the prevailing water resource conditions for Riverside County, including those areas expected to be directly affected by GPA No. 960.

The CWP is published once every five years and constitutes a comprehensive policy and strategy document to address water related issues at a statewide level based on specific regional settings. See, e.g., CWC Section 10004(b)(1). The CWP update process offers a broad public forum to discuss various statewide strategies, including, but not limited to, those relating to the development of new water storage facilities, water conservation,

water recycling, desalination, conjunctive use and water transfers that may or may not be pursued to help meet future water needs of the State of California. The stated objectives of the CWP include expanding regional water management, using water more efficiently, protecting water quality and expanding environmental stewardship, reducing energy consumption, investing in new technology and improving flood management.

As set forth in further detail below, the 2009 CWP expressly endorses the water management activities being carried out by the regional wholesale and local retail water agencies that serve Riverside County, including the areas affected by GPA No. 960. For instance, the South Coast Regional Report section of the CWP states:

> *Wholesale and retail water agencies, groundwater agencies and watershed managers are working together to meet current and future demands of municipal, industrial, agricultural users and the environment, and sustain the region's economy. To achieve this they are planning and implementing large and diverse water supply and water quality projects and water use efficiency projects. Cooperation between agencies and organizations, and use of integrated resources planning have improved the flexibility and diversity of the region's water supplies.*

The Regional Report further recognizes: "The South Coast region implements to some extent nearly all of the resource management strategies in the Water Plan's Volume 2." The Colorado River Regional Report in the 2009 CWP indicates that:

> *The region is actively engaged in IRWM [Integrated Regional Water Management] planning efforts that empower stakeholders to develop integrated solutions and diversify water management portfolios to meet regional water management challenges. In combination with local and statewide planning, IRWM efforts serve a vital role to provide for sustainable water use, water quality and environmental functions.*

The information, analyses and conclusions contained in the Regional Reports that pertain to Riverside County and areas affected by GPA No. 960, in particular, are supported and confirmed by the comprehensive and more detailed sets of information and analyses contained in the 2010 UWMPs prepared by the wholesale and retail water supply agencies that serve the areas affected by GPA No. 960. These agencies, their UWMPs and applicable data are further discussed in the sections below, in Section 4.19.7 in particular, with supplementary information in Appendix EIR-8.

B. Hydrology

For planning, analytical and other specified purposes, the California Department of Water Resources (DWR) has organized the state into ten major surface water drainage regions, two of which (the South Coast region and the Colorado River region) include portions of Riverside County and encompass the areas affected by GPA No. 960. Detailed information and analyses have been prepared for these regions by DWR and that information is updated on an ongoing basis as part of the California Water Plan process.

Generally, the western one-third of Riverside County lies within the South Coast region, west of the San Jacinto Mountains, and the eastern two-thirds of Riverside County lie within the Colorado River region. Designated watershed areas are included within each region, several of which partially lie within Riverside County. Figure 4.19.3 (Major Watersheds Within Riverside County) shows the major watersheds as they fall within Riverside County. Additional information about the conditions existing in these watersheds, as set forth in the California Water Plan 2009 Update, is provided below. For the rest of this sub-section, unless otherwise noted, the information in the following discussion is derived from the 2009 CWP.

1. South Coast Hydrologic Region

The South Coast Hydrologic Region is California's most urbanized and populous region. As shown in Figure 4.19.4 (South Coast Hydrological Region), it encompasses 54% of the state's population and covers 11,000 square miles (7% of the state). It extends from the Pacific Ocean east to the Transverse and Peninsular Ranges, and from the Ventura-Santa Barbara county line south to the international border with Mexico. The region includes all of Orange County and portions of Ventura, Los Angeles, San Bernardino, Riverside and San Diego Counties. Topographically, most of the South Coast Hydrologic Region is composed of several large, undulating coastal and interior plains. Several prominent mountain ranges occur from its northern and eastern boundaries, including the San Gabriel and San Bernardino Mountains. Most of the region's rivers drain into the Pacific Ocean and many terminate in lagoons or wetland areas that serve as important coastal habitat. Many river segments on the coastal plain, however, have been concrete-lined or in other ways modified for flood control operations. The information presented here focuses on the Riverside County portion of the region to the extent practicable, which essentially includes all of western Riverside County (i.e., everything west of the San Gorgonio Pass and the San Jacinto Mountains).

The coastal and interior valleys of the South Coast Hydrologic Region feature Mediterranean climates characterized by mild, wet winters and warm, dry summers. Most (75%) of the region's precipitation falls between December and March, with varying averages. However, the region is marked by substantial climactic variability, with fluctuations in rainfall that can lead to periodic drought conditions. As an example, according to the State of California, the region experienced precipitation extremes between 2000 and 2005, with particularly dry conditions, roughly 30% of normal, occurring in 2002. Then in 2005, precipitation was above average, roughly 220-250% of normal.

Roughly 40% of the South Coast Hydrologic Region is developed with urban or suburban uses. Although agricultural land uses remain important in the region, such uses are increasingly giving way to urbanization. Of the total water supply to the region, more than half is used by native vegetation, evaporates to the atmosphere, is used for agricultural crops and managed wetlands, or flows to other states, the Pacific Ocean and salt sinks, like saline groundwater aquifers. The remaining portion, identified as consumptive use of applied water, is distributed among urban and agricultural uses, or diverted to managed wetlands. Water supply dedicated to environmental management in the region includes instream flows for fisheries, aquatic vegetation and water quality protection. As applied to Riverside County, this includes managed wetlands maintained through discharge of reclaimed water supplies, such as the Hemet/San Jacinto Multi-Purpose Constructed Wetlands and the San Jacinto Wildlife Area. There are also constructed wetlands behind Prado Dam.

a. Santa Ana Planning Area Watersheds

The Santa Ana Planning Area has experienced some of the most rapid urbanization in the state over the past 10 to 15 years, which has created numerous challenges in balancing growth with water supplies, flood protection and ecosystem preservation. The planning area consists of one major watershed, the Santa Ana River watershed, plus a few sub-watershed areas including the San Diego Creek subwatershed and the San Jacinto River subwatershed. Watershed-scale planning is provided by the Santa Ana Watershed Project Authority (SAWPA) Integrated Water Resources Management Plan (One Water One Watershed). This plan was supported by a number of subwatershed integrated plans, including the Central Orange County Integrated Regional and Coastal Watershed Management Plan, the North Orange County Integrated Regional and Coastal Watershed Management Plan, the Integrated Regional Management Plan for San Jacinto River Watershed, the Upper Santa Ana River Watershed Integrated Regional Water Management Plan and the Western Municipal Water District Integrated Regional Water Management Plan.

According to the CWP, the 2,800-mile Santa Ana River watershed is the largest coastal stream system in Southern California and spans parts of Los Angeles, Orange, San Bernardino and Riverside Counties. Approximately 400 square miles of the watershed are located in Riverside County. The Santa Ana River is the principle river in the watershed. Its headwaters are in the San Bernardino Mountains; it travels from there through the San Bernardino Valley, into Riverside County and through the coastal plains of Orange County, where it drains into the Pacific Ocean near the City of Newport Beach. Most of the river channel in Orange County has been altered for flood management purposes. Upstream, however, the river is in its natural state. Flows in the Santa Ana River are perennial and 'effluent dominated.' That is, without effluent discharges from area wastewater treatment plants into the river, surface flow within Riverside County would be rare during dry weather. A minimum flow to protect downstream water rights and groundwater recharge (measured at Prado Dam) is maintained through wastewater discharges to the Santa Ana River.

The watershed also contains several human-made water storage facilities, including Lake Perris, Lake Mathews and Big Bear Lake. Other flood control facilities along the river include Prado Dam and Seven Oaks Dam. Most of the watershed has both urban and agricultural land use activities. Generally, the northwest portion of Riverside County, north of the Santa Margarita River and west of the San Jacinto and San Bernardino Mountains, lies within the Santa Ana River watershed.

The 765-square mile San Jacinto River subwatershed is in western Riverside County and is a subwatershed to the Santa Ana River watershed. It extends from the San Bernardino National Forest in the San Jacinto Mountains to Lake Elsinore in the west. Flows in the San Jacinto River occasionally reach Canyon Lake and more rarely reach Lake Elsinore. Water from Lake Elsinore may discharge into Temescal Wash, which is a tributary of the Santa Ana River. In this way, the Santa Ana River watershed and the San Jacinto subwatershed are linked. The lower portion of the San Jacinto subwatershed is being urbanized while the upper portion is a mixture of high- and low-density urbanization, agriculture and undeveloped land. Within Riverside County, this area's surface water storage occurs in Lake Hemet, Canyon Lake, Lake Elsinore and (periodically) Mystic Lake.

Deep alluvial deposits make up the large groundwater basins in the Santa Ana River watershed, several of which are recharged by the Santa Ana River and its tributaries. The Riverside County portion of the Santa Ana River hydrologic unit contains a number of groundwater resources, as shown in Figure 4.19.14 (see Section 4.19-2.L for more information on groundwater). The San Jacinto River recharges a deep graben as it leaves the mountains and several other basins on its way to Lake Elsinore. (A 'graben' is a depressed block of land bordered by parallel faults. For more on this and other terms used in this chapter, see the water glossary included in Appendix EIR-8). Groundwater resources in the Riverside County portion of the San Jacinto River hydrologic unit include the Perris, San Jacinto and Elsinore Valley hydrologic areas, which are further discussed below in connection with the water supplies available to those areas (see Section 4.19-2.L).

The climate of the Santa Ana River watershed area is considered Mediterranean with dry summers and mild, wet winters. Average annual rainfall in the area is approximately 15 inches, with most of it falling between December and March. When rainfall in the region occurs over a period of only a few days, flooding can result. Major earthquake faults in the area include the San Andreas Fault and its large branches, the San Jacinto Fault and the Elsinore-Whittier Fault. The San Jacinto Fault splits off the San Andreas near San Bernardino and affects groundwater flows associated with both the Santa Ana and San Jacinto rivers. The Elsinore-Whittier Fault passes under Prado Dam. There are also many branching and parallel faults in the region.

b. San Diego Planning Area Watersheds

The San Diego Planning Area has nine major watersheds, including the Santa Margarita watershed which partially lies within Riverside County. The planning area includes one major watershed, the Santa Margarita River

watershed, plus a few sub-watershed areas within the Riverside County portion. The Santa Margarita River watershed totals approximately 750 square miles, of which approximately 560 square miles lie within southwestern Riverside County. This portion of the watershed drains the southern part of the Perris fault block and southern end of the Santa Ana Mountains. The Santa Margarita River is formed by the confluence of Murrieta and Temecula creeks. It empties into the Pacific Ocean near Camp Pendleton, north of Oceanside in San Diego County.

The primary surface water storage area within the Riverside County portion of this area is Vail Lake, while Lake Skinner and the Eastside Reservoir (i.e., Diamond Valley Lake) provide drinking water storage. The majority of the area's water supply is imported from the Colorado River with some water from Northern California via the State Water Project (SWP).

Groundwater basins in the Riverside County portion of the San Diego Planning Area watersheds are divided into the San Juan, Santa Margarita and San Luis Rey hydrologic units. Groundwater resources in the San Juan hydrologic unit within Riverside County include the Mission Viejo and San Mateo Canyon hydrologic areas. Groundwater resources within the Santa Margarita hydrologic unit include the Ysidora, DeLuz, Murrieta, Auld, Pechanga, Wilson, Cave Rocks, Aguana and Oak Grove hydrologic areas. Groundwater resources in the San Luis Rey hydrologic unit include the Monserate hydrologic area.

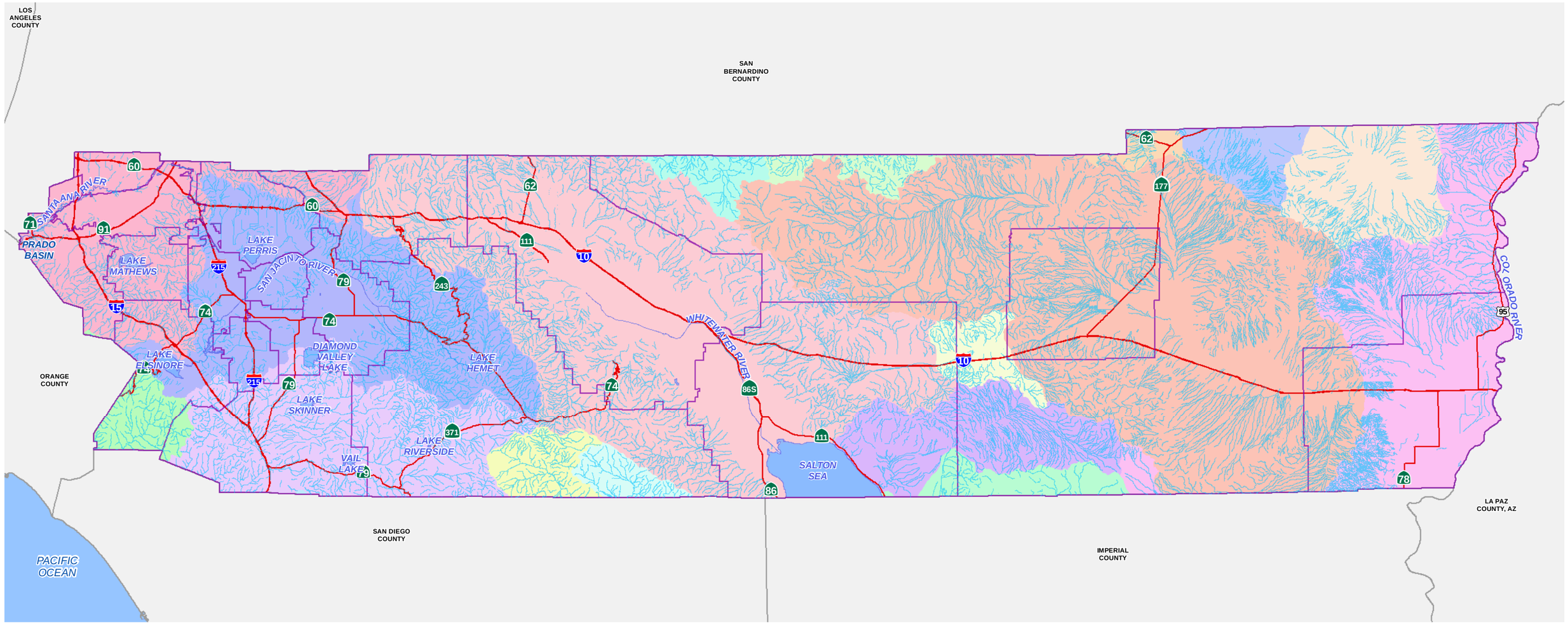
The climate in this area is considered mild. Precipitation varies widely in the Santa Margarita River watershed from 10 inches at the coast (in San Diego County) to more than 40 inches in the mountains of Riverside County. Surface runoff, with accompanying stream discharge, peaks significantly after storm events in the Santa Margarita River system and has caused significant flooding in the Murrieta and Temecula areas. Flows in some parts of the river are considered ephemeral in the absence of these significant storm events.

2. Colorado River Hydrologic Region

The Colorado River is the major watercourse in the American Southwest, spanning six states and reaching into Mexico. The river's headwaters originate as far north and east as Wyoming, Colorado and New Mexico. The Lower Colorado River basin, originating at Lake Powell on the border between Utah and Arizona, encompasses most of Arizona, as well as parts of New Mexico, Nevada and California. The River forms the boundary between California and Arizona from the southern tip of Nevada to Baja Mexico. It also forms the eastern-most boundary of the County of Riverside. Within Riverside County, the Colorado River basin extends from the eastern slopes of the San Bernardino and San Jacinto Mountains east to the state border. Figure 4.19.5 (Colorado River Hydrological Region) shows the Colorado River Hydrologic Region.

Over the years, a number of dams have been built along the Colorado River. The Palo Verde Divesion Dam occurs within the portion of the River edging Riverside County. Parker Dam to the north near Lake Havasu is the other primary dam upstream of the county segment and is also the origin point for the Colorado River Aqueduct, which runs west and south to its terminus at Lake Mathews in western Riverside County. From there, 156 miles of distribution lines, including eight tunnels, deliver water to member cities. Along the way, some of the water is diverted via the San Diego Canal, part of the San Diego Aqueduct that delivers water to San Diego County.

The Lower Colorado is navigable by moderate to large-sized craft, but it is not used for commercial navigation, such as shipping. The lower river from Davis Dam to Yuma, Arizona, however, is navigable by large paddlewheel boats and river barges. Most of the rest of the river and its lakes and reservoirs, excluding the rapids in the canyons, is navigable by small to moderate-sized river craft and power boats. As such, recreational pleasure craft are by far the predominant users of the river.



Data Source: US Geological Survey (2008)

- Anza Borrego
- Cadiz
- ChuckWalla
- Clark
- Colorado
- Dale
- East Salton
- Hayfield
- Imperial
- Joshua Tree
- Rice
- Salton Sea
- San Jacinto Valley
- San Juan
- San Luis Rey
- Santa Ana River
- Santa Margarita
- Ward
- Whitewater
- Drainage
- Highways
- Area Plan Boundary

Figure 4.19.3

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ACIT GEOGRAPHIC INFORMATION SERVICES
RIVERSIDE COUNTY PLANNING DEPARTMENT
BOARD OF SUPERVISORS Riverside County California

MAJOR WATERSHEDS WITHIN RIVERSIDE COUNTY

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Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

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Figure 4.19.4

SOUTH COAST HYDROLOGIC REGION

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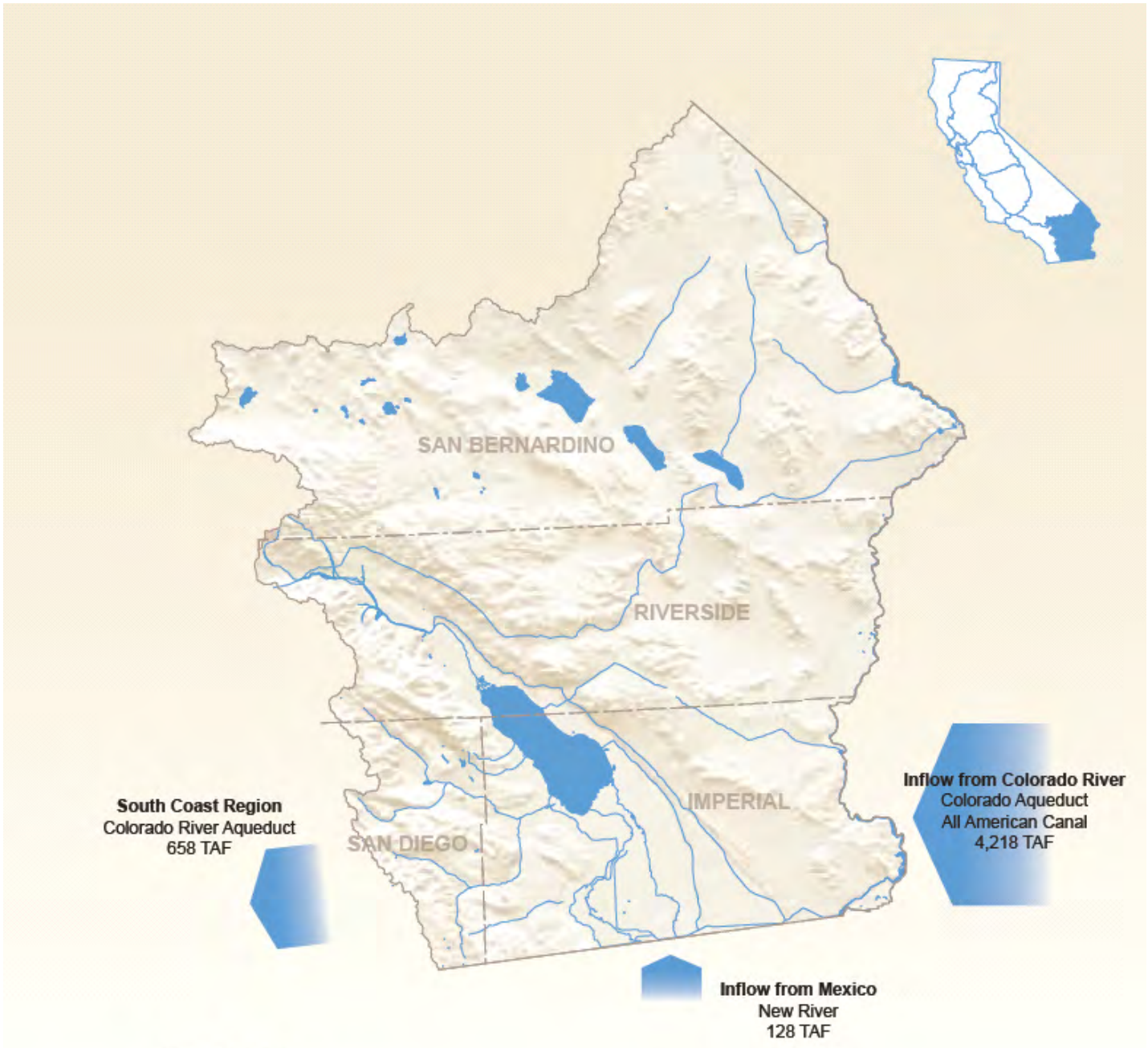

Some Statistics

Area: 19,962 square miles (12.6% of state)

Average annual precipitation: 5.7 inches

Year 2005 population: 713,726

2050 population projection: 2,309,280

Total reservoir storage capacity: 620 TAF

2005 irrigated agriculture: 658,830 acres

Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

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Figure 4.19.5

COLORADO RIVER HYDROLOGIC REGION

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According to the U.S. Bureau of Reclamation, about 88% of the total annual flow of water in the Lower Colorado River basin originates in northern Arizona from the natural runoff of precipitation and snow melt in the mountains of Colorado, Utah and New Mexico. Once water enters the lower Colorado River mainstream, its use is subject to the 'Law of the River,' a collection of laws, regulations and agreements that dictate how and where Colorado River water is distributed. The Law of the River is further discussed below and more fully in Appendix EIR-8.

The CWP identifies three prominent watershed areas within Riverside County: the easternmost Imperial Reservoir watershed; the Salton Sea Transboundary watershed which is the westernmost basin and includes the Salton Sea, Coachella Valley and the eastern San Jacinto Mountains; and the Southern Mojave watershed, which lies between the two. See Figures 4.19.3, 4.19.4 and 4.19.5.

A distinctive geographical feature of the region, the Salton Trough is a structural extension of the Gulf of California. The trough encompasses Coachella and Imperial valleys, with the Salton Sea lying between the two in the lowest part of the area. The Salton Sea was formed most recently by an overflow of the Colorado River between 1905 and 1907, and is California's largest inland body of water. The Sea's water supplies come from drainage of agricultural irrigation return water and stormwater runoff, in addition to treated and untreated municipal and industrial wastewater.

The Sea also features the Sonny Bono Salton Sea National Wildlife Refuge, an important wetland area, particularly for migratory birds. Because the Sea's drainage is internal (i.e., no outlet to the ocean), salts tend to concentrate in its water and excess nutrients build up, leading to algal blooms and, at times, fish kill-offs due to low dissolved oxygen levels in the water.

Geologically, ancient streams preceding the Colorado River laid down deep alluvial deposits of silt, clay and sand. Later, the Coachella and Imperial valleys were created when the Colorado River formed a delta, isolating the Salton Trough from the Gulf of California. At various times, the Trough has contained lakes, further depositing silt and organic matter into the soils. For these reasons, parts of the region, such as the Palo Verde Mesa, feature rich deposits of fertile soils suitable for agricultural uses. Development near the Colorado River includes the agricultural areas of the Palo Verde and Bard valleys, as well as the City of Blythe. Scattered mining operations also occur in the area. The sediments in the groundwater basins of this region are generally weakly consolidated to consolidated. The San Andreas Fault cuts across the region bordering the northeast side of the Salton Trough. The Borrego Valley is formed by the San Jacinto Fault. Valleys, mountains and dry lakes are oriented by the major fault systems. These systems also influence groundwater flow.

According to the CWP, the nearly all of the region's water comes from the Colorado River, with the Colorado Aqueduct and All American Canal (to the south, near the Mexico border) carrying nearly all of the region's water inflow. The New River also contributes a minor amount (3%) of inflow from Mexico into the watershed. Water from the Colorado River supplies both wholesale and retail domestic water purveyors, as well as irrigation districts. As mentioned earlier, the Colorado River is also a key source of imported water for the South Coast Hydrologic Region. MWD imports water from this source via the 242-mile Colorado River Aqueduct (CRA) and a regional conveyance system. See Figure 4.19.10 for a general schematic of the state's water conveyance infrastructure, including the CRA.

As with nearly all of Southern California, water use from the Colorado River is facing growing challenges in terms of allocations amongst competing entities, as well as water quality, climate change, drought stresses and other environmental issues. Water demands in the Colorado River region are met through a combination of imported surface water, supplies from the Colorado River, local groundwater basins (wells) and recycled water supplies. The CWP reports that Colorado River supplies meet either all or most of the agricultural and urban water

demands in the Imperial, Coachella and Bard valleys. The Palo Verde Irrigation District (PVID), for example, supplies water to agricultural users directly from the river. The recently concrete-lined Coachella Valley Canal transports river water into the Coachella Valley for agricultural and some urban uses. In remote areas of the desert without existing infrastructure, water supplies generally depend on self-supplied groundwater, e.g., private wells.

Within the region overall, agriculture accounts for the majority of the region's land uses and water use. In Riverside County, the region's agriculture is concentrated in the Palo Verde and Coachella valleys. Most of the region's urban uses are concentrated in the Coachella Valley, which has undergone tremendous growth in the last two decades. Scattered urban areas also occur elsewhere throughout the region. In recent years, land fallowing programs, in addition to economic conditions, have affected the region's totals for planted and harvested croplands. In the Palo Verde Valley, land fallowing programs are a result of an agreement between PVID and MWD, with PVID swapping its excess (conserved) water with MWD. The Imperial Irrigation District (IID) is also fallowing ground to meet Salton Sea mitigation conditions pursuant to the Quantification Settlement Agreement (QSA). See Section 4.19.3, as well as Appendix EIR-8, for more information on the QSA.

According to the CWP, in 2005 the Colorado River Hydrologic Region used 3.42 million acre-feet (AF) of water from the Colorado River, 429,000 AF of groundwater (normally about 7.5%), 134,000 AF from SWP, 6,000 AF of surface supplies and 7,000 AF of recycled water supplies. As the region has no direct connection to the SWP, supplies from Northern California are obtained through an exchange agreement between the Coachella Valley Water District (CVWD), the Desert Water Agency (DWA) and MWD. Combined SWP allocations for the CVWD and DWA are released by MWD from its Colorado River Aqueduct into the Whitewater River. These releases recharge the upper groundwater basin of the Coachella Valley and are later pumped by the region's providers.

Most of the Colorado River Hydrologic Region has a subtropical desert climate with hot summers and short, mild winters. The San Jacinto and San Bernardino Mountain ranges create a rainshadow effect, with most of the region's rainfall occurring on the western sides of the ranges, contributing to the arid desert conditions within the Colorado River Hydrologic Region. According to the CWP, annual rainfall amounts range between a little over 6 inches to less than 3 inches, with most of the precipitation occurring in the winter and spring. Monsoonal thunderstorms fed by subtropical air from the south, do occur in the summer and can generate significant rainfall in some years. The mountain ranges also experience higher annual rainfall amounts and milder summer temperatures. Within the Colorado River region, the minimum daily average temperature runs between 23-54 degrees Fahrenheit and the maximum daily average temperature runs between 48-81 degrees.

Since 1999, the Colorado River watershed has been experiencing drier than normal conditions. The CWP reports annual maximum and minimum temperatures were slightly higher than long-term averages between 2000 and 2005. Precipitation amounts were generally below average between 2000 and 2003, with 2002 being extremely dry, and rainfall totals were above average for 2005.

a. West Basin of the Colorado River Watershed

The West Basin, on the Coachella Valley half of eastern Riverside County, is divided into six planning areas, all but two of which drain into the Salton Trough. This area is the driest in California with very little rain. Most of the precipitation that falls evaporates or is used by vegetation during evapotranspiration. Hence, the area is characterized mainly by ephemeral streams which contain water only for short periods after thunderstorm events in the summer and, rarely, in the winter. The few perennial streams in the western half of the watershed are predominantly fed by agricultural runoff and are also used by local communities as a water supply.

Water sources are scarce in this area. Surface water is a minor source of supply and groundwater supplies, though more substantial than in the East Basin, cannot fully meet total demands. Thus, water is imported from the Colorado River to fulfill demands. Irrigation needs in the Coachella Valley are met almost exclusively by this imported supply. Historical groundwater production in the Coachella Valley led to overdraft conditions; extensive groundwater recharge efforts are currently being undertaken by the Coachella Valley Water District, which recharges groundwater basins with Colorado River water via spreading basins.

b. East Basin of the Colorado River Watershed

The East Basin is a 200-mile long strip of land with an east-west width of up to 40 miles in the easternmost portion of San Bernardino, Riverside and Imperial Counties. Its boundaries are the Nevada state line, the Colorado River, Mexico and the California stream drainage area tributary to the Colorado River. The Californian streams are bound by surrounding desert peaks of up to approximately 4,000 feet elevation. The area includes the Palo Verde and Bard valleys.

Winters in this basin are mild and summers hot. Precipitation is 3 to 4 inches annually with half coming from summer thunderstorms and the other half from mild winter storms. All drainage is to the Colorado River except for a small portion which flows into the Colorado River Aqueduct via MWD's Gene Wash and Copper Basin Reservoirs. Irrigation and domestic water are provided by the Colorado River, with only about 1% of demands being met with groundwater.

Groundwater is generally unconfined in the watershed's basins with sediments up to 700 feet in depth. Approximately 10,000 AF of precipitation percolates to the groundwater table annually. The combined total groundwater storage of the East Colorado River basin is found at a depth of at least 200 feet and is approximately 35 million AF, with approximately 20% stored within Riverside County. The groundwater basin in this area is the Colorado Hydrologic Unit.

C. Water Quality Within the Hydrological Regions

1. Water Quality in the South Coast Hydrologic Region

Water quality is a core issue in the South Coast Hydrologic Region. Population and economic growth not only affect water demand, but add contamination challenges from increases in wastewater and industrial discharges, urban runoff, agricultural chemical usage and livestock operations. Urban and agricultural runoff can contribute to local surface water sediment from disturbed areas. Oil, grease and toxic chemicals from automobiles, nutrients and pesticides from turf and crop management, viruses and bacteria from failing septic systems and animal waste, road salts and heavy metals all threaten local water supplies and quality. Three areas that are receiving intense interest are nonpoint source (NPS) pollution control, salinity management and emerging contaminants.

Surface and groundwater salinity is an ongoing challenge for South Coast water supply agencies. Higher levels of treatment are needed following long-range import of water supplies because the level of total dissolved solids (TDS), essentially, a measure of a water's 'saltiness,' increases during conveyance (as water evaporates, any salts present become more concentrated). Chemical and microbial constituents that have not historically been considered as contaminants are increasingly present in the environment due to municipal, agricultural and industrial wastewater sources and pathways. Established and emerging contaminants of concern to the region's drinking water supplies include pharmaceuticals and personal care products, disinfection byproducts, chemicals associated with rocket fuel, such as perchlorate and nitrosodimethylamine, naturally-occurring chemicals, such as

arsenic, chemicals associated with industrial processes, such as hexavalent chromium and methyl tertiary butyl ether (MTBE), a gasoline additive.

In the Santa Ana Planning Area watersheds within Riverside County, one of the most pressing water quality issues is the buildup of dissolved minerals, or salts, in the ground and surface waters. TDS and nitrogen levels in the area must meet the water quality objectives set by the Santa Ana RWQCB to protect beneficial uses of the ground and surface waters. Meeting those regulatory standards will continue to be a pressing challenge and priority for the RWQCB, water purveyors and parties that discharge to the protected waters. Among other factors, increased TDS and nitrates can be attributed to use of imported water supplies, evaporation or evapotranspiration, reduced return flows, fertilizers, dairy operations, municipal and industrial wastewater and utilization of recycled water supplies. One of the principal causes of the mineralization problem in the region is irrigated agriculture, particularly citrus, which in the past required large applications of water, resulting in large losses due to evaporation. TDS and nitrate concentrations are increased both by this reduction in volume of water and the addition of minerals through direct application of salts (e.g., fertilizers for example). As further discussed below, several desalter facilities, which help remove salts from the groundwater and produce a usable supply, are either in operation or planned for the region. These include the existing Arlington, Chino Basin, Riverside/Colton, Temescal and Menifee desalters.

Groundwater contamination is another water quality concern in the region. For example, the Stringfellow Acid Pits Federal Superfund site is located approximately 9 miles northwest of downtown Riverside. From 1956 to 1972, it was used as a hazardous waste disposal facility, where industrial wastes, primarily from metal finishing, electroplating and pesticide production were deposited in evaporation ponds. In 1969, excessive rainfall caused the ponds to overflow and contaminate Pyrite Creek. Cleanup of the site has removed approximately 6.3 million gallons of waste, yet groundwater in the area still contains volatile organic compounds (VOCs) and heavy metals. A groundwater treatment system and other clean-up efforts are gradually reducing the risk of further contamination to the surrounding area, restoring beneficial uses to the nearby ground and surface water sources.

In the San Diego Planning Area watershed of Riverside County, water quality within the Santa Margarita River watershed has been affected by non-point source runoff associated with suburban development. While programs to control point and non-point source pollution are being implemented, rapid development in the Temecula and Murrieta areas has increased stormwater runoff and will continue to present challenges to maintaining water quality standards established by the RWQCB. Using highly saline Colorado River water and recycled water for irrigation may present additional water quality concerns for the region.

2. Water Quality in the Colorado River Hydrologic Region

Water quality concerns exist in all watersheds of the Colorado River Hydrologic Region. The highest priority water quality issues, those with regional importance according to the CWP, include: the need for surface water quality monitoring, the quality of imported water, the need for onsite treatment systems, nitrate levels, leaking underground storage tanks and impacts from animal feed lots and dairy operations. The Salton Sea is a particular challenge for the region. It is the largest body of water in the region, but it has a TDS concentration of about 46,000 milligrams per liter (mg/L), which is about 40% saltier than ocean water, according to the CWP.

In the West Basin of the Colorado River watershed, the primary water quality issues are increasing salinity of the Colorado River and historic overdraft conditions in the Coachella Valley. The salinity of the Colorado River can substantially limit the reuse of irrigation runoff or recycled water supplies. As a practical matter, high salinity can increase agricultural costs by necessitating larger quantities of water to dilute the root zone and can increase urban costs by requiring higher levels of recycled water treatment to allow for reuse in irrigation and groundwater recharge projects.

The Salton Sea is a substantial water quality concern. With no natural outlet and a drainage area of approximately 7,500 square miles, it acts as a natural salt sink for the surrounding area. The Salton Sea's replenishment is generally from irrigation runoff and occasionally from storm runoff. Thus, to the extent the quality of irrigation or stormwater runoff declines, so does the water quality condition of the Salton Sea. According to the CWP, the salinity of the Salton Sea is currently above 40,000 mg/L TDS and is rising. Fish that live in the Sea may not be able to survive and reproduce in water that is above 45,000 mg/L TDS. The salinity of the Sea is projected to rise 1-2% per year if no salinity control measures are taken. Selenium from agricultural return flows is also a water quality concern in the Salton Sea, along with other chemicals found in agricultural runoff, such as nitrate and pesticides. Many options for water quality management of the Salton Sea, including those proposed for the Quantification Settlement Agreement (discussed below) are under investigation.

Water quality concerns in the East Basin of the Colorado River watershed are mostly related to the increasing salinity of Colorado River supplies, as the river is the major source of water supply to the area. As with the West Basin, high salinity can increase agricultural costs by requiring larger quantities of water to dilute salts building up in plants' root zones and can increase urban costs by requiring higher levels of recycled water treatment to allow for reuse in irrigation and groundwater recharge projects.

In some parts of the region, water quality issues, particularly salt levels (TDS), make groundwater unsuitable for potable water use. The Coachella Valley Storm Water Channel, which stretches from near Indio to the Salton Sea, does not meet federal water quality standards due to elevated pathogen levels. Leaching of septic systems into groundwater is also a major concern, particularly for areas that rely predominantly on groundwater. Perchlorate levels, salinity and the outfall of untreated wastewater into surface waters are also of concern for the region. See Section 4.19.5, as well as Appendix EIR-8, for additional information on water quality issues.

D. Stormwater, Wastewater and Urban Runoff

In California, the Porter-Cologne Water Quality Control Act is the preeminent law addressing water quality. Per this act (CWC Section 13050(d)), 'waste' is broadly defined to include sewage, all other waste of human or animal origin associated with human habitation, as well as that from any producing, manufacturing or processing operations. In contrast, 'urban runoff' is defined by the State of California to include those discharges from residential, commercial, industrial and construction areas, but excludes discharges from (unimproved) open space, feedlots, dairies, farms and agricultural fields. Urban runoff discharges consist of stormwater and non-stormwater surface runoff for drainage sub-areas with various, often mixed, land uses within all of the hydrologic drainage areas that discharge into Waters of the U.S. Urban runoff also does not include background pollutant loads or naturally occurring flows. 'Stormwater' is simply water that originates from a precipitation or snow event (i.e., rain, hail, sleet or snowfall). When it does not soak into the ground, it becomes 'surface runoff' and either flows directly into surface waterways or is channeled into storm sewers, which themselves eventually discharge to surface waters.

1. Regulatory Background

The State Water Resources Control Board ('State Board') in California has exclusive jurisdiction over wastewater as well as ultimate authority over state water quality policy. Nine Regional Water Quality Control Boards (RWQCBs) oversee water quality at the more local levels – three cover parts of Riverside County (see below).

The federal Clean Water Act (CWA) established a national policy designed to help maintain and restore the physical, chemical and biological integrity of the nation's waters. In 1972, the CWA established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants from

point sources to 'Waters of the U.S.' From 1972 to 1987, the main focus of the NPDES program was to regulate conventional pollutant sources such as sewage treatment plants and industrial facilities. As a result, on a nationwide basis, non-point sources, including agricultural runoff and urban runoff, now contribute a larger portion of many kinds of pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities.

The National Urban Runoff Program (NURP) final report to the Congress (USEPA, 1983) concluded that the goals of the CWA could not be achieved without addressing Urban Runoff discharges. Thus in 1987, CWA amendments established a framework for regulating Urban Runoff. Pursuant to these amendments, the state's RWQCBs began regulating discharges from municipal separate storm sewer systems ('MS4s') in 1990.

In addition to these federal standards, the State of California's Porter-Cologne Act also regulates the discharging of waste without regard to the source of the pollutant or waste (CWC Section 13263). The CWA NPDES program requires point-source dischargers, including dischargers of stormwater associated with industrial and construction activities to obtain permits to ensure their compliance with strict water quality standards. Municipal operations, such as MS4s, are also addressed by both state and federal regulations.

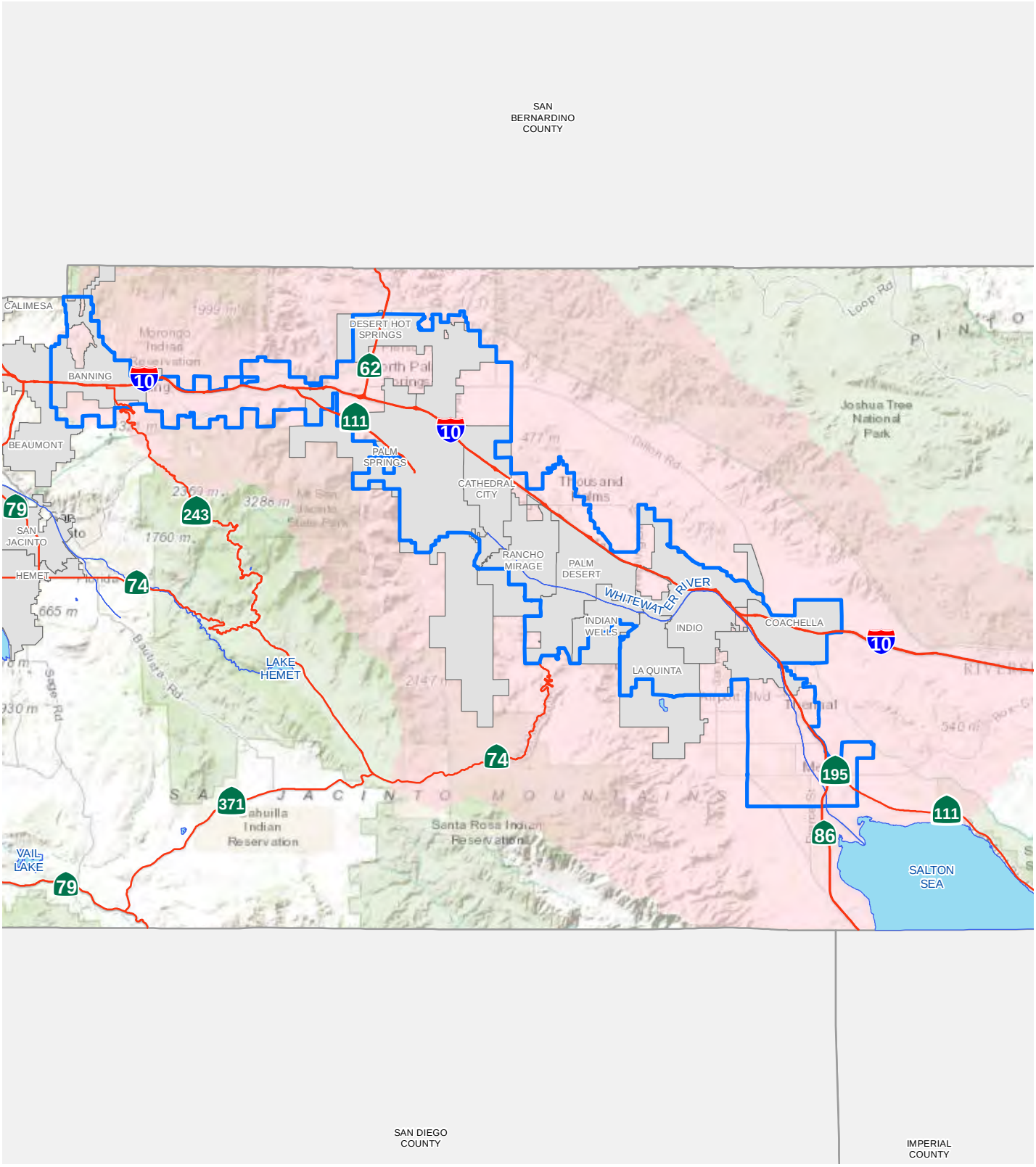
Orders from the RWQCBs establish the area-wide NPDES MS4 Permit for their respective permit areas in accordance with Section 402 (p) of the CWA and all requirements applicable to an NPDES permit issued under the issuing authority's discretionary authority. The requirements included in the Order are consistent with the CWA, the federal regulations governing urban stormwater discharges, the Water Quality Control Plan for the respective basins (Basin Plans, e.g., Santa Ana River Basin, Upper Santa Margarita River Basin, Whitewater River Basin), the California Water Code and the State Board's plans and policies.

The basin plan is the basis for the RWQCB's regulatory programs and is developed in accordance with relevant federal and state law and regulation, including the CWA and the Water Code. As required, basin plans designate the 'beneficial uses' of the waters of the region and specify water quality objectives intended to protect them. (Beneficial uses and water quality objectives together with an anti-degradation policy, comprise a federal water quality standard.) The basin plan also specifies an implementation plan, which includes certain discharge prohibitions. If available, a basin plan will include pollutant water quality objectives for specified management zones, management strategies applicable to both surface and ground waters and various total maximum daily loads (TMDLs), as well as TMDL Implementation Plans that had been adopted for the 'impaired waterbodies' within the region.

Accordingly, the County of Riverside operates MS4s under three permits issues by the three RWQCBs with jurisdiction over portions of Riverside County. The Whitewater River watershed is within the Colorado River Hydrologic Region. The other two watersheds are part of the South Coast Hydrologic Region. The areas covered by each of these three permits are shown in Figure 4.19.6 (Whitewater River Region MS4 Permit Area), Figure 4.19.7 (Santa Ana River Region MS4 Permit Area) and Figure 4.19.8 (Santa Margarita River Region MS4 Permit Area), below. See also Section 4.19.5.B for more information.

- **Region 7, Colorado River RWQCB:** Oversees the Whitewater River region (watershed); MS4 Permit No. ~~R7-2008-001~~ *R7-2013-0011*, NPDES Permit No. ~~CAS617702~~ *CAS617002*, for which the Riverside County Flood Control and Water Conservation District (FWCD) and County of Riverside itself are co-principal permittees, with nine municipalities plus the Coachella Valley Water District as co-permittees.

- **Region 8, Santa Ana River RWQCB:** Oversees the Santa Ana River region (watershed), MS4 Permit No. R8-2010-0033, NPDES Permit No. CAS601833, for which FCWCD is the principal permittee and the County of Riverside plus 13 municipalities are co-permittees.



Data Source: Riverside County NPDES Permit #CAS617002 (2012)

Whitewater MS4 Permit Boundary

Whitewater Watershed Boundary

December 16, 2013

Figure 4.19.6

WHITEWATER RIVER REGION MS4 PERMIT AREA

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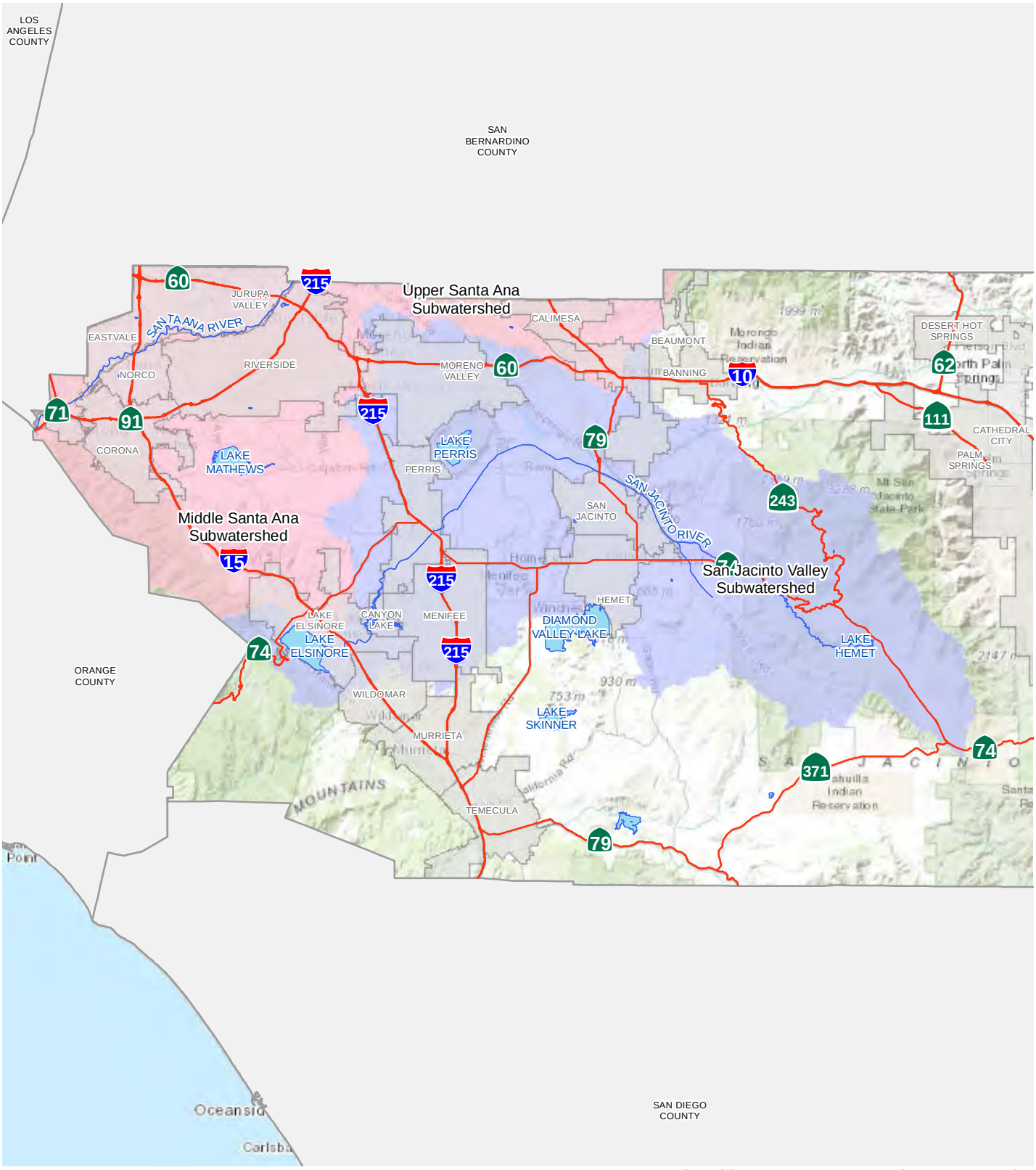

Data Source: Riverside County NPDES Permit #CAS617002 (2012)

San Jacinto Valley Watershed

Santa Ana River Watershed

December 16, 2013

Figure 4.19.7

SANA ANA RIVER REGION MS4 PERMIT AREA

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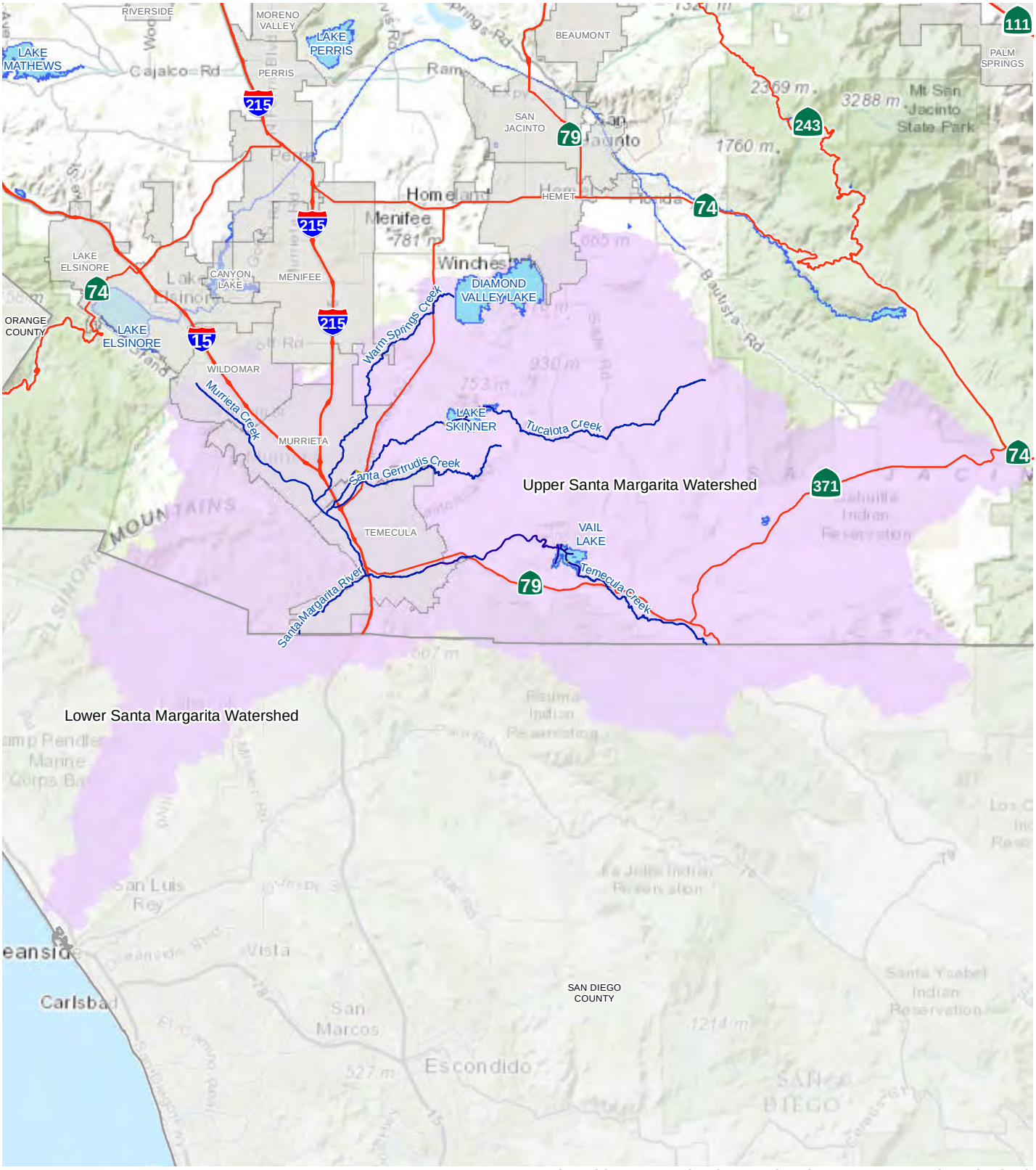

Data Source: Riverside County Flood Control and Water Conservation District (2011)

Santa Margarita Watershed

December 16, 2013

Figure 4.19.8

SANTA MARGARITA RIVER REGION MS4 PERMIT AREA

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- **Region 9, San Diego RWQCB:** Oversees the Upper Santa Margarita region (watershed), MS4 Permit No. R9-2010-0016, NPDES Permit No. CAS0108766, for which FCWCD is the principal permittee and the County of Riverside plus the cities of Menifee and Temecula are co-permittees.

Areas of Riverside County excluded or not addressed by the stormwater regulations and areas not under jurisdiction of the permittees were excluded from the areas covered by the MS4 Permits. These include the following areas and activities:

- Federal lands and state properties, including, but not limited to, military bases, national forests, hospitals, highways, colleges and universities.
- Native American tribal lands.
- Open space (undeveloped) and rural (non-urbanized areas).
- Agricultural lands (return flows from irrigated agriculture and non-point source agricultural activities are exempted under the CWA).
- Utilities, railroads and special districts (including school districts, park districts, publicly-owned treatment works and water utilities, etc.).

The RWQCBs recognize that the permittees should not be held responsible for discharges from such facilities or pollutants in those discharges. However, to the extent that the permittees authorize the connection of the discharges from these facilities into their MS4s, the MS4 permits require the permittees to notify these facilities in writing of the state and local post-construction standards and other applicable requirements of the MS4 permits.

As water flows over streets, parking lots, construction sites and industrial, commercial, residential and municipal areas, it may intercept pollutants from these areas and transport them to Waters of the U.S. Urban runoff may contain pathogens, sediment, trash, fertilizers, oxygen-demanding substances, pesticides, heavy metals and petroleum products. If not properly managed and controlled, urbanization may adversely impact water quality and quantity in the receiving waters.

Studies conducted in the Southern California area have established stormwater runoff from urban areas as significant sources of pollutants in surface waters. If not properly controlled, urban runoff could be a significant source of pollutants in the Waters of the U.S. Table 4.19-B (Pollutant Sources and Effects on Waters of the United States) lists the major pollutants, their potential sources and some of the adverse environmental consequences mostly resulting from urbanization.

2. Impaired Waterbodies in Riverside County

In general, Section 303(d) of the federal Clean Water Act (CWA) requires each state to establish Total Maximum Daily Loads (TMDLs) for waters for which certain effluent limitations are not stringent enough to achieve applicable water quality standards. (A TMDL is the maximum amount of a pollutant that a waterbody can assimilate while still meeting water quality standards.) In its 2005 manual, "California Impaired Waters Guidance," CalWater notes that the State Board's TMDL program was created to implement the CWA and State of California's minimum water quality standards to achieve clean water "where traditional controls...have proven inadequate."

Accordingly, each RQWCB routinely monitors and assesses the quality of the waters under their jurisdiction per CWA Section 303(b). If this assessment indicates that beneficial uses are not met, then the waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody. In preparing its impaired waterbodies list, the State Board and Regional Water Quality Control Boards assess water quality data for California's waters every two years to determine if they contain pollutants at levels that exceed protective water quality criteria and standards. In October 2011, the USEPA issued its final decision regarding the water bodies and pollutants identified in California's 2010 303(d) list.

From the State of California's most recent (2010) Integrated Report (on CWA Section 303(d) Water Quality-Limited Segments), the waterbodies that occur in Riverside County are indicated in Table 4.19-C (Impaired Waterbodies in Riverside County), below, along with information on the applicable pollutants and TMDLs, as applicable. The beneficial uses of waterbodies, including impaired ones, addressed under Riverside County's three MS4 permits are addressed in Table 4.19-D (Beneficial Uses of Select Waterbodies in Riverside County). Water quality pollutants in general are summarized in Table 4.19-B.

3. Watershed Characteristics

The background provided here comes from Riverside County's Drainage Area Management Plan (DAMP) which addresses both the Santa Ana River and Santa Margarita River regions pursuant to the MS4 permits for these regions. The information on the Whitewater River region comes directly from the MS4 permit (order) for that region. See below for additional information on these permits and plans.

a. Santa Ana Region Watershed

(1) Physiography and Geology

The Santa Ana River (SAR) watershed represents one of nine major California watershed systems between Santa Barbara and the US-Mexico Border at Tijuana. The SAR is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California. The highest elevations (upper reaches) of the Riverside County region of the watershed occur in the San Bernardino Mountains (San Gorgonio Peak with elevation 11,485 feet) and in the San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto with elevation 10,804 feet). The primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

Table 4.19-B: Pollutant Sources and Effects on Waters of the United States

Pollutants	Sources	Effects and Trends
Toxins (e.g., biocides, PCBs, trace metals, heavy metals)	Industrial and municipal wastewater; runoff from farms, forests, urban areas, and landfills; erosion of contaminated soils and sediments; vessels; atmospheric deposition	Poison and cause disease and reproductive failure; fat-soluble toxins may bioconcentrate, particularly in birds and mammals, and pose human health risks. Inputs into Waters of the U.S. have declined, but remaining inputs and contaminated sediments in urban and industrial areas pose threats to life.
Pesticides (DDT, diazinon, chlorpyrifos)	Urban runoff, agricultural runoff, commercial, industrial, residential and farm use	The use of legacy pesticides (DDT, chlordane, dieldrin) has been banned or restricted; still persists in the environment; some of the other pesticide uses are curtailed or restricted.
Biostimulants (organic wastes, plant nutrients)	Sewage and industrial wastes; runoff from farms and urban areas; nitrogen from combustion of fossil fuels	Organic wastes overload bottom habitats and deplete oxygen; nutrient inputs stimulate algal blooms (some harmful), which reduce water clarity and alter food chains supporting fisheries. While organic waste loading has decreased, nutrient loading has increased.

Pollutants	Sources	Effects and Trends
Petroleum Products (oil, grease, petroleum hydrocarbons, PAHs)	Urban runoff and atmospheric deposition from land activities; accidental spills; oil and gas production activities; natural seepage; and PAHs from internal combustion engines	Petroleum hydrocarbons can affect bottom organisms and larvae; spills affect birds, mammals and aquatic life. While oil pollution from accidental spills and production activities has decreased, diffuse inputs from land-based activities have not.
Radioactive Isotopes	Atmospheric fallout, industrial and military activities	Bioaccumulation may pose human health risks where contamination is heavy.
Sediments	Erosion from farming, construction activities, forestry, mining, development; river diversions; coastal dredging and mining	Reduce water clarity and change bottom habitats; carry toxins and nutrients; clog fish gills and interfere with respiration in aquatic fauna. Sediment delivery by many rivers has decreased, but sedimentation poses problems in some areas.
Plastics and Other Debris	Ships, boats, fishing nets, containers, trash, urban runoff	Entangles aquatic life or is ingested; degrades lake shores, beaches, near shore habitats and wetlands. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.
Thermal (heat)	Cooling water from power plants and industry, urban runoff from impervious surfaces	Kills some temperature-sensitive species; and displaces others. Generally, less a risk to marine life than thought 20 years ago.
Noise	Vessel propulsion, sonar, seismic prospecting, low-frequency sound used in defense and research	May disturb marine mammals and other organisms that use sound for communication.
Pathogens (bacteria, protozoa, viruses)	Sewage, urban runoff, livestock, wildlife and discharges from boats and cruise ships.	Pose health risks to swimmers and consumers of aquatic life. Sanitation has improved, but standards have been raised.
Alien Species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem.

Note: Adapted from "Marine Pollution in the United States," prepared for the Pew Oceans Commission, 2001.
Source: Santa Ana Regional Water Quality Control Board, Fact Sheet - Riverside County Urban Runoff Management Program (MS4 Permit), page 6 of 57, 2010.

Table 4.19-C: Impaired Waterbodies in Riverside County

Waterbody	Size	Hydraulic Unit(s)[1] / Pollutant	Beneficial Uses[2] / Potential Sources *(and Notes)*	1st List Year [3]	TMDL Cat[4]	Action Date[4]
Whitewater River Watershed (Colorado River RWQCB - Region 7)						
Coachella Valley Stormwater Channel	24 mi	719.47.000	FRESH, GWR, REC1*, REC2*, WARM, WILD, RARE (Note 3)			
		DDT	Source unknown (Note 1)	2010	5A	2021
		Dieldrin	Source unknown (Note 1)	2010	5A	2021
		PCBs	Source unknown (Note 1)	2010	5A	2021
		Pathogens	Source unknown (Note 2)	2002	5A	2010
		Toxaphene	Source unknown (Note 1)	2006	5A	2019
			Note 1: Applies only to 2 miles from Lincoln St. to Salton Sea.			
			Note 2: Applies only to 17 miles from Dillon Rd. to Salton Sea.			
			Note 3: REC1* and REC2* are unauthorized uses.			
Palo Verde Outfall Drain and Lagoon	19 mi.	715.40.000	REC1, REC2, WARM, WILD, RARE			
		DDT	Source unknown	2006	5A	2019
		Pathogens	Source unknown (Note 1)	2002	5A	2019
		Toxaphene	Source unknown	2010	5A	2021
			Note 1: Listing made by USEPA for 2006.			
Salton Sea	233,340 acres	728.00.000	AQUA, IND(P), REC1, REC2, WARM, WILD, RARE			
		Arsenic	Source unknown	2010	5A	2021
		Chlorpyrifos	Source unknown	2010	5A	2021
		DDT	Source unknown	2010	5A	2021
		Enterococcus	Source unknown	2010	5A	2021
		Nutrients	Agricultural return flows, out-of-state source, major industrial point source	1994	5A	2019
		Salinity	Agricultural return flows, out-of-state source, point source (Note 1)	1998	5A	2019
		Selenium	Source unknown	1994	5A	2019

Waterbody	Size	Hydraulic Unit(s)[1] Pollutant	Beneficial Uses[2] Potential Sources *(and Notes)*	1st List Year [3]	TMDL Cat[4]	Action Date[4]
			Note 1: "TMDL development will not be effective in addressing this problem, which will require an engineering solution with federal, local and state cooperation."			
Santa Ana River Watershed (Santa Ana RWQCB - Region 8)						
Canyon Lake (Railroad Cyn. Reservoir)	453 acres	801.11.000	MUN, AGR, GWR, REC1, REC2, WARM, WILD			
		Nutrients	Non-point sources	1998	5B	2005
		Pathogens	Non-point sources	1998	5A	2006
Chino Creek, Reach 1A	0.79 mi.	801.21.000	REC1, REC2, WARM, WILD, RARE			
		Nutrients	Agriculture, dairies	2010	5A	2019
		Pathogens	Agriculture, dairies, urban runoff / storm sewers	2010	5B	2007
Chino Creek, Reach 1B	7 mi.	801.21.000	REC1, REC2, WARM, WILD, RARE			
		Chemical oxygen demand	Unknown source	2010	5A	2021
		Nutrients	Agriculture	2010	5A	2019
		Pathogens	Agriculture, dairies, urban runoff / storm sewers	2010	5B	2007
Chino Creek, Reach 2	2.5 mi.	801.21.000	GWR, REC1 (UNAUTH), REC2, COLD, WILD			
		Coliform Bacteria	Unknown non-point source	1998	5B	2007
		Acidity (pH)	Unknown source	2010	5A	2021
Goldenstar Creek	2.4 mi.	801.26.000	REC1			
		Indicator Bacteria	Source unknown	2010	5A	2021
Lake Elsinore	2,431 acres	802.31.000	REC1, REC2, WARM, WILD			
		Nutrients	Unknown non-point source	1994	5B	2005
		Organic Enrichment / Low Dissolved Oxygen	Unknown non-point source	1994	5B	2005
		PCBs	Unknown non-point source	2006	5A	2019
		Sediment Toxicity	Unknown point and/or non-point sources	2010	5A	2021
		Unknown Toxicity	Unknown non-point source	1994	5A	2012
Lake Fulmor	4.2 acres	802.21.000	MUN, AGR, REC1, REC2, WARM, COLD, WILD			
		Pathogens	Unknown non-point source	1998	5A	2019
Mill Creek (Prado Area)	1.6 mi	801.21.000 / 801.25	REC1, REC2, WARM, WILD, RARE			
		Nutrients	Agriculture, dairies	1996	5A	2019
		Pathogens	Dairies	1996	5B	2007
		Total Suspended Solids	Dairies	1996	5A	2019
Santa Ana River, Reach 3	26 mi.	801.21, 801.25, 801.27	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN			
		Pathogens	Dairies, unknown non-point source	1994	5B*	2007
		Copper	Unknown non-point source (Note 1)	2010	5A*	2021
		Lead	Source unknown	2010	5A	2021
			Note 1: Applies for wet season only.			
Santa Ana River, Reach 4	14 mi.	801.27.000, 801.44	GWR, REC1, REC2, WARM, WILD, SPWN			
		Pathogens	Non-point source	1994	5A*	2019
Temescal Creek, Reach 1	2.3 mi	801.25.000	REC1, REC2, WARM, WILD			
		Acidity (pH)	Source unknown	2010	5A*	2021
Temescal Creek, Reach 6	5.4 mi.	801.35	INTERMIT – GWR, REC1, REC2, WARM, WILD			
		Indicator Bacteria	Source unknown	2010	5A	2021
Temescal Creek, Reach 6 *(Note 1)*	5.4 mi	801.25.000	INTERMIT – GWR, REC1, REC2, WARM, WILD			
		Indicator Bacteria	Source unknown	2010	5A	2021
			Note 1: Elsinore Groundwater sub-basin boundary to Lake Elsinore Outlet.			
Upper Santa Margarita Watershed (San Diego RWQCB - Region 9)						
De Luz Creek	14 mi.	902.21.000	MUN, AGR, IND, REC1, REC2, WARM, COLD, RARE, SPWN			
		Iron	Source unknown	2006	5A	2019
		Manganese	Agriculture, point and non-point sources	2006	5A	2019
		Nitrogen	Source unknown	2010	5A	2021
		Sulfates	Source unknown	2010	5A	2019

Waterbody	Size	Hydraulic Unit(s)[1] / Pollutant	Beneficial Uses[2] / Potential Sources *(and Notes)*	1st List Year [3]	TMDL Cat[4]	Action Date[4]
Long Canyon Creek (Murrieta Creek tributary)	8.3 mi.	902.32.000	MUN, AGR, IND, PROC, REC1, REC2, WARM, WILD			
		Chlorpyrifos	Source unknown	2010	5A	2019
		Fecal Coliform	Source unknown	2010	5A	2019
		Iron	Source unknown	2010	5A	2019
		Manganese	Source unknown	2010	5A	2019
		Total Dissolved Solids	Source unknown	2010	5A	2021
Murrieta Creek	12 mi.	902.52.000	MUN, AGR, IND, PROC, GWR, REC1(P), REC2, WARM, WILD			
		Chlorpyrifos	Natural sources, unknown non-point source, urban runoff / storm sewers	2010	5A	2021
		Copper	Natural sources, unknown non-point source, urban runoff / storm sewers	2006	5A	2019
		Iron	Natural sources	2006	5A	2019
		Manganese	Source unknown	2006	5A	2019
		Nitrogen	Unknown point and non-point sources, urban runoff / storm sewers	2002	5A	2019
		Phosphorus	Unknown point and non-point sources, urban runoff / storm sewers	2010	5A	2019
		Toxicity	Unknown point and non-point sources, urban runoff / storm sewers	2010	5A	2021
Redhawk Channel	0.15 mi.	902.51.000	MUN, AGR, IND, PROC, GWR, REC1(P), REC2, WARM, WILD			
		Chlorpyrifos	Crop-related sources, nurseries, storm sewers, non-point source	2010	5A	2021
		Copper	Source unknown	2010	5A	2021
		Diazinon	Point and non-point sources, storm sewers	2010	5A	2021
		E. coli	Source unknown	2010	5A	2021
		Fecal Coliform	Source unknown	2010	5A	2021
		Iron	Natural sources, unknown sources	2010	5A	2021
		Manganese	Source unknown	2010	5A	2021
		Nitrogen	Source unknown	2010	5A	2021
		Phosphorus	Source unknown	2010	5A	2021
		Total Dissolved Solids	Source unknown	2010	5A	2021
Santa Margarita River (Upper)	18 mi.	902.22.000	MUN, AGR, IND, REC1, REC2, WARM, COLD, WILD, RARE			
		Phosphorus	Urban runoff / storm sewers, unknown point and non-point sources			2002
		Toxicity	Urban runoff / storm sewers, unknown point and non-point sources			2010
Santa Gertrudis Creek	12 mi.	902.42.000	MUN, AGR, IND, PROC, GWR(P), REC1, REC2, WARM, WILD			
		Chlorpyrifos	Urban runoff / storm sewers, unknown non-point source	2010	5A	2021
		Copper	Urban runoff / storm sewers, unknown non-point source	2010	5A	2021
		E. coli	Natural sources, urban runoff / storm sewers, unknown non-point source	2010	5A	2021
		Fecal Coliform	Natural sources, urban runoff / storm sewers, unknown non-point source	2010	5A	2021
		Iron	Urban runoff / storm sewers, unknown non-point source	2010	5A	2021
		Manganese	Source unknown	2010	5A	2021
		Nitrogen	Source unknown	2010	5A	2021
		Phosphorus	Urban runoff / storm sewers, unknown non-point source	2010	5A	2021

Waterbody	Size	Hydraulic Unit(s)[1] Pollutant	Beneficial Uses[2] Potential Sources *(and Notes)*	1st List Year [3]	TMDL Cat[4]	Action Date[4]
Temecula Creek	44 mi.	902.51.000	MUN, AGR, IND, PROC, GWR, REC1(P), REC2, WARM, WILD			
		Chlorpyrifos	Source unknown	2010	5A	2021
		Copper	Urban runoff / storm sewers, unknown source	2010	5A	2021
		Phosphorus	Urban runoff / storm sewers, unknown point and non-point sources	2010	5A	2021
		Total Dissolved Solids	Urban runoff / storm sewers, unknown point and non-point sources	2010	5A	2021
		Toxicity	Urban runoff – industrial permitted, unknown point and non-point sources	2010	5A	2021
Warm Springs Creek	15 mi.	902.33.000	MUN, AGR, IND, PROC, REC1(P), REC2, WARM, WILD			
		Chlorpyrifos	Urban runoff / storm sewers	2010	5A	2021
		E. coli	Urban runoff / storm sewers	2010	5A	2021
		Fecal Coliform	Urban runoff / storm sewers	2010	5A	2021
		Iron	Natural sources	2010	5A	2021
		Manganese	Natural sources	2010	5A	2021
		Phosphorus	Urban runoff / storm sewers	2010	5A	2021
		Total Nitrogen as N	Urban runoff / storm sewers	2010	5A	2021

Footnotes:
1. State Water Resources Control Board hydrological subunit or planning watershed designation.
2. Beneficial use designations and sources: see Table 4.19-D.
3. First year listed as impaired per CWA Section 303(d).
4. Category for TDML (total daily maximum load) action:
   5A = TMDL to be prepared, due by action date listed.
   5B = TMDL approved by USEPA in year listed under 'Action Date.'

Source: California State Water Resources Control Board, Final 2010 Integrated Report (2010 California CWA Section 303(d) List of Water Quality Limited Segments), approved by USEPA October 11, 2010. Santa Ana RWQCB, Basin Plan Beneficial Uses (Attachment B-3), 1995, updated 2008.

As is true for much of California, the geology of the SAR is defined and created by seismic activity. The dominant structural feature is the San Andreas fault zone, which trends in a southeast-northwest direction at the base of the San Bernardino Mountains. The major fault structures in the SAR include the San Jacinto fault zone and the Elsinore fault zone; the San Jacinto Mountains are caused by motion from both the San Andreas and San Jacinto zones. The area between the San Jacinto zone and the Elsinore Zones is a down-dropped block that is partly in-filled with sediments from the surrounding mountains.

There are too many geologic units in the SAR to describe separately, but the predominant features are intrusive rocks of the Southern California batholith (granitic and andesitic rocks) that have been uplifted/eroded to form the mountain ranges, alluvial/fluvial sediments (materials eroded from the mountains and deposited in the basins) and semi-consolidated sedimentary units.

Table 4.19-D: Beneficial Uses of Select Waterbodies in Riverside County

Waterbody[1]	Hydraulic Unit	Beneficial Uses *(see key below)*
Santa Ana River Watershed (Santa Ana RWQCB - Region 8)		
Upper Santa Ana River		
Santa Ana River, Reach 3*	801.21, 801.25, 801.27	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN
Santa Ana River, Reach 4*	801.27, 801.44	GWR, REC1, REC2, WARM, WILD, SPWN
Temescal Creek, Reach 1*	801.25	REC1, REC2, WARM, WILD
Temescal Creek, Reach 2	801.32, 801.25	INTERMIT – AGR, IND, GWR, REC1, REC2, LWARM
Temescal Creek, Reach 3	*See Lee Lake*	
Temescal Creek, Reach 4	801.34	RARE, INTERMIT – AGR, GWR, REC1, REC2, WARM, WILD
Temescal Creek, Reach 5	801.35	AGR, GWR, REC1, REC2, WARM, WILD, RARE
Temescal Creek, Reach 6*	801.35	INTERMIT – GWR, REC1, REC2, WARM, WILD

Waterbody[1]	Hydraulic Unit	Beneficial Uses *(see key below)*
Coldwater Canyon Creek	801.32	MUN, AGR, GWR, REC1, REC2, WARM, WILD
Bedford Canyon Creek	801.32	INTERMIT – GWR, REC1, REC2, WARM, WILD
Dawson Canyon Creek	801.32	MUN, GWR, REC1, REC2, WARM, WILD
Day Creek	801.21	MUN, PROC, GWR, REC1, REC2, COLD, WILD
San Sevaine Creek	801.21	INTERMIT – MUN, GWR, REC1, REC2, COLD, WILD
San Timoteo Wash, Reach 3	801.62	INTERMIT – GWR, REC1, REC2, WARM, WILD, RARE
Little San Gorgonio Creek and Tributaries	801.62, 801.63, 801.69	MUN, GWR, REC1, REC2, COLD, WILD
Sunnyslope Channel	801.27	MUN, REC1, REC2, WARM, WILD, SPWN
Tequesquite Arroyo (Sycamore Creek)	801.27	GWR, REC1, REC2, WARM, WILD, SPWN
Chino Basin / Middle Santa Ana		
Chino Creek, Reach 1A*	801.21	REC1, REC2, WARM, WILD, RARE
Chino Creek, Reach 1B*	801.21	REC1, REC2, WARM, WILD, RARE
Mill Creek (Prado Area) *	801.25	REC1, REC2, WARM, WILD, RARE
Cucamonga Creek, Reach 1	801.21	GWR, REC1, REC2, LWARM, WILD
San Jacinto River		
San Jacinto River, Reaches 1 and 6	802.31, 802.32, 802.21	INTERMIT – MUN, AGR, GWR, REC1, REC2, WARM, WILD
San Jacinto River, Reaches 3, 4 and 5	802.11, 802.14, 802.21	INTERMIT - AGR, GWR, REC1, REC2, WARM, WILD
San Jacinto River, Reach 2	*See Canyon Lake*	
San Jacinto River, Reach 7	802.21	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Bautista Creek	802.21, 802.23	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Strawberry Creek	802.21	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Fuller Mill Creek	802.22	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Stone Creek	802.21	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Salt Creek	802.12	INTERMIT - REC1, REC2, WARM, WILD
Logan, Black Mountain, Juaro Canyon, Indian, Hurkey, Poppet, Potrero Creeks and Tributaries	802.21, 802.22	INTERMIT – MUN, AGR, GWR, REC1, REC2, WARM, WILD
Lakes in the Santa Ana Region		
Lake Elsinore*	802.31	REC1, REC2, WARM, WILD
Canyon Lake*	802.11	MUN, AGR, GWR, REC1, REC2, WARM, WILD
Lake Hemet	802.22	MUN, AGR, GWR, POW, REC1, REC2, WARM, COLD, WILD, SPWN
Lake Fulmor*	802.21	MUN, AGR, REC1, REC2, WARM, COLD, WILD
Lake Perris	802.11	MUN, AGR, IND, PROC, GWR, REC1, REC2, COMM, WARM, COLD, WILD
Lake Evans	801.27	REC1, REC2, WARM, COLD, WILD
Lake Mathews	801.33	MUN, AGR, GWR, REC1, REC2, COLD, WARM, WILD
Lee Lake	801.34	MUN, AGR, IND, PROC, GWR, REC1, REC2, WARM, WILD, RARE
Mockingbird Reservoir	801.26	AGR, REC1, REC2, WARM, WILD
Santa Margarita Watershed (San Diego RWQCB - Region 9)		
De Luz Creek*	902.21	MUN, AGR, IND, REC1, REC2, WARM, COLD, RARE, WILD, SPWN
Long Canyon*	902.32	MUN, AGR, IND, PROC, REC1, REC2, WARM, COLD, WILD, SPWN
Murrieta Creek*	902.31, 902.32, 902.52	MUN, AGR, IND, PROC, GWR, REC1(P), REC2, WARM, WILD
Santa Margarita River (Upper) *	902.21, 902.22	MUN, AGR, IND, REC1, REC2, WARM, COLD, WILD, RARE
Temecula Creek*	902.51, 902.52, 902.81, 902.83, 902.91, 902.92	MUN, AGR, IND, PROC, GWR, REC1(P), REC2, WARM, WILD
Whitewater River Watershed (Colorado River RWQCB - Region 7)		
Coachella Valley Stormwater Channel[2]*	719.47	FRESH, GWR, REC1[3], REC2[3], WARM, WILD, RARE
Little Morongo Creek	719.10	MUN, AGR, GWR, REC1, REC2, WARM, WILD

Waterbody[1]	Hydraulic Unit	Beneficial Uses *(see key below)*
Palm Canyon Creek	719.43	MUN, AGR, GWR, REC1, REC2, WARM, WILD
San Gorgonio River	719.30	MUN, AGR, GWR, REC1, REC2, COLD, WILD
Tahquitz Creek	719.47	MUN, GWR, REC1, REC2, COLD, WILD
Whitewater River[4]	719.00	MUN, AGR, GWR, REC1, REC2, INTERMIT - WARM, COLD, WILD, POW
Washes[5] (Ephemeral Streams)	719.00	MUN, AGR, GWR, REC1, REC2, WARM, WILD

KEY: Existing beneficial use designations:

AGR: agricultural supply
AQUA: aquaculture (fish farms)
COLD: cold freshwater habitat
FRSH: freshwater replenishment
GWR: groundwater recharge
IND: industrial service supply
INTERMIT: intermittent use
LWARM: limited warm freshwater habitat
(P) Potential
MUN: municipal and domestic supply
POW: hydropower generation
RARE: rare, threatened or endangered species
REC1: water-contact recreation
REC2: non-contact water recreation
SPWN: spawning, reproduction and development waters
WARM: warm freshwater habitat
WILD: wildlife habitat

Footnotes:

1. Asterisk (*) marks waterbodies listed as impaired on the 2010 Final Integrated Report/California CWA Section 303(d) List of Water Quality Limited Segments. See Table 4.19-C for more information.
2. Applies to the section of perennial flow from approximately Indio (Dillon Road) to the Salton Sea.
3. Unauthorized use.
4. Includes the section of flow from the headwaters in the San Gorgonio Mountains to (and including) the Whitewater recharge basins near Indian Avenue crossing in Palm Springs.
5. Washes – Intermittent or Ephemeral Streams, including the section of ephemeral flow in the Whitewater River and the CVSC from Indian Avenue to approximately 0.5 mile west of Monroe Street crossing.

Sources: Santa Ana RWQCB, Order No. R8-2010-0033 – NPDES Permit CAS618033, January 2010. Colorado River RWQCB, Order No. R7-2008-0001 – NPDES Permit CAS617002, May 2009.

(2) Surface Water

As the SAR is arid, there is little natural perennial surface water. Surface waters start in the upper erosion zone of the watershed - primarily the San Bernardino, Santa Ana and San Jacinto Mountains. This upper zone has the highest gradient and soils/geology that do not allow large quantities of percolation of surface water into the ground. Flows consist mainly of snowmelt and storm runoff from the lightly developed San Bernardino National Forest.

From the City of San Bernardino to the City of Riverside, the Santa Ana River flows perennially, mostly due to treated discharges from wastewater treatment plants. From the City of Riverside to Prado Dam, the flow in the Santa Ana River consists of highly treated wastewater and groundwater discharges, potable water transfers, irrigation runoff, groundwater forced to the surface by shallow/rising bedrock and minor amounts of urban runoff. Urban runoff provides a proportionately greater contribution to the flow of the river during significant storm events.

Lake Elsinore is the only natural freshwater lake of any size in the SAR. A variety of water storage reservoirs (e.g., Lake Perris, Canyon Lake, and Lake Mathews) and flood control areas (Prado Dam area) have been created to hold surface water in Riverside County.

The San Jacinto watershed is part of the southernmost portion of the Santa Ana watershed. It is tributary to the Santa Ana River through Lake Elsinore and Temescal Wash. The 780-square mile watershed includes 18.1 square miles regulated by Lake Perris and Pigeon Pass dam. Major tributaries include Bautista Creek, Poppet Creek, Potrero Creek, Perris Valley Drain and Salt Creek.

The San Jacinto watershed is bounded by two strike-slip fault zones: the San Jacinto fault zone to the northeast and Elsinore fault zone to the southwest. The San Jacinto Valley is among the most seismically active of the major

strike-slip fault zones in Southern California and also the site of rapid subsidence (20 mm per year) due to tectonic activity and groundwater withdrawal. The rapid rate of subsidence has resulted in the formation of a strike-slip *graben* ('pull-apart basin') that has developed along parallel fault strands in the fault zone. The Elsinore fault zone is also a strike-slip fault zone and subsidence along the fault formed Lake Elsinore. Due to the large amount of flood storage available in Lake Elsinore, flows from the San Jacinto River rarely reach the Santa Ana River.

Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. Lake Elsinore is one of the few natural lakes in Southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the Mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme, with alternate periods of a dry lakebed and extreme flooding. These drought/flood cycles have a great impact on lake water quality. Fish kills and excessive algal blooms have been reported in Lake Elsinore since the early 20th century. As a result, in 1994, the Santa Ana RWQCB placed Lake Elsinore on the CWA Section 303(d) list of impaired waters due to excessive levels of nutrients.

Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780-square mile San Jacinto River watershed drains to Canyon Lake. Only during wet or moderately wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake. While Canyon Lake does not have as severe an eutrophication problem as Lake Elsinore, there have been periods of algal blooms. In 1998, the RWQCB added Canyon Lake to the CWA Section 303(d) list of impaired waters due to eutrophication.

The high subsidence rate of the San Jacinto valley along the fault zone has resulted in a closed depression that periodically fills with water to form the ephemeral Mystic Lake. In very wet years, the surface area of Mystic Lake can expand up to 4,000 acres. The San Jacinto River makes a 90-degree turn and flows southwest at Mystic Lake. The very low river gradient westward from Mystic Lake forms a broad fluvial plain. The San Jacinto River then flows through the narrow Railroad Canyon, Canyon Lake and exits the Perris Block into the lower Elsinore basin created by the Elsinore fault zone.

One-fifth of Riverside County drains into waterbodies within the Santa Ana River. Surface waterbodies receiving these flows include Canyon Lake, Lake Perris, Lake Elsinore, Lake Hemet, Lee Lake, Lake Mathews and Mockingbird Reservoir. Major rivers and streams in the watershed include the Santa Ana River, Temescal Creek, Temecula Creek, Day Creek, the San Jacinto River, San Timoteo Creek, Little San Gorgonio Creek and a number of streams in the San Jacinto Mountains, including Bautista Creek, Hurkey Creek, Strawberry Creek, etc. See Table 4.19-C for full list of drainages.

As shown in Table 4.19-D, beneficial uses of these surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species. The ultimate goal of the DAMP is to protect the beneficial uses of the receiving waters from impacts related to urban runoff.

(3) Municipal Separate Storm Sewer Systems

The MS4 facilities operated by FCWCD in the SAR consist of an estimated 75 miles of underground storm drains and 59 miles of open channels. The MS4 facilities operated by the co-permittees include approximately 395 miles of underground storm drains and 65 miles of open channels. (See below for full details on MS4 permits.)

(4) Current Water Quality Issues

Urban runoff discharged to MS4s in Riverside County ultimately flow to various surface water bodies (inland streams, lakes and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in urban runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals and litter.

Because the SAR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of stormwater runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants present in urban runoff are beyond the ability of the permittees to eliminate. Examples of these include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities and leaching of naturally occurring minerals from local geography.

Some receiving waters in the SAR (for example, Reaches 3 and 4 of the Santa Ana River, Cucamonga Creek and Mill Creek) are identified as impaired due to causes such as nutrients (nitrogen and/or phosphorus), pathogens (including coliform), sediment and unknown toxicity. See Table 4.19-C for full list. The Santa Ana RWQCB has also identified receiving waters that require additional monitoring to improve the quantity and/or quality of data used to develop the Section 303(d) list. Currently, some receiving waters within the SAR have been designated as needing additional monitoring data for parameters such as metals (aluminum, copper, silver, and zinc), salinity, chlorides or TDS.

(5) Total Maximum Daily Loads

Lake Elsinore: According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads (TMDLs) staff report, prepared by the Santa Ana RWQCB (dated May 21, 2004), Lake Elsinore and Canyon Lake are located at the terminus of the San Jacinto River watershed in southwestern Riverside County. The entire San Jacinto River watershed encompasses 780 square miles. Lake Elsinore is one of the few natural lakes in Southern California. It was formed in a geologically active graben area and has been in existence over thousands of years. Due to the Mediterranean climate and watershed hydrology, lake level fluctuations in Lake Elsinore have been extreme with periods of dry lake bed during some drought cycles. These drought cycles have a great impact on lake water quality.

Fish kills and excessive algae blooms have been reported in Lake Elsinore since the early 20th century. As a result, the RWQCB placed Lake Elsinore on the 1994 Section 303(d) list of impaired waters due to excessive levels of nutrients. In December 2004 a nutrient TMDL was established for Lake Elsinore and Canyon Lake. Stormwater and non-storm water discharges from septic systems, agriculture, dairy, urban, forested and open space lands, as well as in-lake sediments, have been identified as potential sources of impairment.

Canyon Lake: According to the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads staff report, prepared by the Santa Ana RWQCB (revised 5/21/04), Canyon Lake, located approximately five miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon dam in 1928. Approximately 735 square miles of the 780-square mile San Jacinto River watershed drains to Canyon Lake. Only in wet years does Canyon Lake overflow to Lake Elsinore; during most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake.

While Canyon Lake does not have as severe an eutrophication problem as does Lake Elsinore, the RWQCB believes there have been periods of algal blooms and occasional fish kills. The RWQCB added Canyon Lake to the 1998 CWA 303(d) list of impaired waters due to eutrophication. Stormwater and non-storm water discharges from septic systems, agriculture, dairy, urban, forested and open space lands have been identified as potential sources of impairment. In December 2004 a nutrient TMDL was established for Lake Elsinore and Canyon Lake.

Santa Ana River, Reach 3 (Middle Santa Ana River): According to Santa Ana RWQCB Resolution R8-2005-001, the Santa Ana River Reach 3 watershed covers approximately 488 square miles and lies largely in the southwest corner of San Bernardino County and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included.

Several waterbodies within, and including the Middle Santa Ana River, have been listed for pathogen indicator impairments. These waterbodies include Middle Santa Ana River, Chino Creek Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek Reach 1, and Prado Park Lake. The Santa Ana RWQCB placed these waterbodies on the 1998 Section 303(d) list of impaired waterbodies for pathogen indicators. In 2005, the RWQCB adopted a pathogen indicator TMDL for these same waterbodies. Potential sources of the impairment include stormwater and non-storm water discharges from agricultural lands, dairy lands, urban lands, failed septic systems, open space areas, forested lands and natural background sources. Recreational use of these waterbodies may also serve as a source of pathogens.

b. Santa Margarita Region Watershed

The Santa Margarita River (SMR) watershed represents one of nine major California watershed systems between Santa Barbara and the US-Mexico Border at Tijuana. The basin includes a watershed area of 746 square miles, ranking it as a moderately large system among coastal drainages. Physiographically, the basin is split into a mountainous highland (upper drainage basin) and broad, flat topped sea terrace (coastal drainage basin). The boundary between the upper drainage basin and the coastal drainage basin transitions at the county line between Riverside and San Diego Counties.

The Upper Santa Margarita watershed includes two major basins, drained by Temecula and Murrieta Creeks. Over 50% of the Santa Margarita River watershed has been controlled by the construction of Vail Dam in 1949 and Skinner Reservoir in 1974, which created significant storage capacity in the upper watershed. Due to this storage capacity, peak flow rates during major flow events for both existing and future land use conditions will be lower than under natural conditions (assuming average storage conditions in the reservoirs). Temecula Creek has a drainage area of 366 square miles, with steep rugged topography in the Palomar and Thomas Mountain areas and rolling hills below. The upper 316 square miles of this basin is controlled by Vail Lake (completed in 1949). Murrieta Creek has a drainage area of 222 square miles, with over 50 square miles controlled by Skinner Reservoir (completed in 1974). Although the watershed area is somewhat smaller and less rugged than the Temecula Basin, flood flows have the potential to create greater damage as they flow through the cities of Temecula and Murrieta.

Temecula and Murrieta creeks join along the Elsinore fault zone at the head of Temecula Canyon to form the Santa Margarita River. The Temecula Canyon is approximately five miles long and is a steep, narrow and rocky canyon. The San Diego-Riverside County line crosses through Temecula Canyon. From here, the river traverses 27 miles through San Diego County to the Pacific Ocean.

(1) Urbanization Patterns

Additionally, within the SMR, approximately 155 square miles are owned by the federal government (28%) and not under the control of the permittees. Although runoff from these areas may be discharged into the MS4 owned and operated by the permittees, the permittees do not have direct or indirect authority over these areas.

In 1956, only 0.3% of the SMR (less than two square miles) was urbanized. Almost half a century later, even with a significant rate of growth in population relative to the state and neighboring counties, 94% of the SMR remains in non-urban land uses (rural residential, agriculture, preserves and open space, state lands, federal lands and tribal lands). Further, almost one-third of the SMR consists of federal, state and tribal lands that are not under the jurisdiction of the permittees' MS4 programs. Assuming that the urbanized area increases proportional to population, 92% of the SMR would remain in non-urban land uses in 2010. Much of the remaining lands will ultimately be incorporated into the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The MSHCP requires the ongoing conservation of 500,000 acres within Riverside County, a large portion of which are in the SMR.

(2) Hydrology

The upper drainage basin is formed almost solely by Murrieta Creek. Murrieta Creek is a major tributary of the greater 750-square-mile Santa Margarita River watershed. This watershed consists of three major portions; the Murrieta Creek sub-watershed to the north, Temecula Creek sub-watershed to the southeast and Santa Margarita River to the southwest.

The watershed currently contains three major water storage reservoirs: Lake Skinner and the recently completed Diamond Valley Reservoir, which are both part of the Murrieta Creek sub-watershed, and Vail Lake, which is part of the Temecula Creek sub-watershed. These reservoirs control over 50% of the Santa Margarita watershed. Runoff entering the reservoirs is initially stored. Excess flows (depending on available storage volume) are discharged downstream. The combined reservoirs have a substantial storage capacity capable of significantly reducing downstream flows from the natural condition.

(3) Physiography and Geology

Murrieta Creek flows between two lengthy strands of the Elsinore fault zone on land that has been downdropped, relatively, by the faulting. Murrieta Creek flows southeasterly from the Wildomar area through the cities of Murrieta and Temecula to the confluence with Temecula Creek. It courses through the Elsinore trough at an average elevation of 1,100 feet above sea level. The lower 12.5 miles of Murrieta Creek drops in elevation 200 feet from an elevation of 1,200 feet. Physiographic features to the southwest include the Santa Rosa Plateau and the foothills of the Elsinore and Santa Ana Mountains which rise as much as 2,200 feet above Murrieta Creek. Land to the northeast of the creek consists of rolling hills and valleys which rise much less abruptly and are known as the 'Perris block,' a structural geologic feature that has been uplifted relative to the creek. Over the first 1.5 miles northeast of the creek, these rolling hills rise gradually to about 300 feet above the creek. Ultimately, they reach as much as 1,025 feet above the creek.

Geologically, the Upper Santa Margarita watershed may originally have been a part of the Santa Ana River drainage system with the ancestral Temecula-Murrieta Creek flowing westward through Lake Elsinore. Over geologic time, the Santa Margarita River eroded the coastal mountain ridge headward sufficiently to 'capture' the ancestral stream and eventually reverse the direction of Murrieta Creek. These processes are continuing due to

continued down-faulting and soils conditions, leading to significant natural erosion and sedimentation processes along the SMR.

(4) Surface Water

Murrieta and Temecula creeks are perennial interrupted streams, that is, they include reaches in which the flow is continuous and others where flow is ephemeral. The areas of perennial flow are located in mountain area tributaries. The perennial flows disappear by seeping into the sands and gravels and resurfacing upstream of the confluence of Murrieta and Temecula creeks. The creeks in the urbanized areas of the watershed, located primarily in the valley, are ephemeral and flows are observed only during and immediately after significant storm events. During major storms, after initial wetting, periods of intense rainfall result in rapid increases in stream flow in steep foothill and mountain areas. Runoff in streams in the watershed is derived primarily from rainfall and as a result, stream flow exhibits monthly and seasonal variations similar to those shown by the precipitation records. Absence of snow pack in the tributary watershed results in a rapid decrease in stream flow at the conclusion of the winter precipitation season. Following severe storms, discharge in the larger streams often increases in a few hours' time from practically no flow to a rate of thousands of cubic feet per second. Stream flows vary greatly from month to month and from season to season.

Rising groundwater is currently observed in Murrieta Creek below its confluence with the Santa Gertrudis Channel. This is consistent with the observations with the rising groundwater conditions observed by the State of California in 1956. Rising groundwater is also observed in Temecula Creek approximately one-quarter mile upstream of the Interstate 15 bridge. In 1956, rising groundwater was observed as far upstream as the Highway 74 bridge. Based on the virtual absence of non-stormwater flows and the rising groundwater conditions in lower Murrieta and Temecula creeks observed prior to development of the watershed, there is no evidence that the rising groundwater is due to urban runoff or that urban runoff has affected the quality of rising groundwater. However, use and disposal of reclaimed water, and agricultural and landscape irrigation in the watershed may affect groundwater quality. Until October 2002, the Rancho California Water District augmented the flow of the Santa Margarita River with reclaimed water at a point about five miles upstream from the Temecula gage station. Since that time, the Rancho California Water District has discharged imported water downstream of the confluence of Murrieta and Temecula creeks.

For the average annual event, it is estimated that approximately 89% of the volume of runoff in the SMR is due to non-urban land uses not regulated under the federal stormwater program. For the 100-year 24-hour event, 93% of the volume of runoff would be due to non-urban land uses. These estimates are based on the assumption that precipitation is constant across the watershed. However, precipitation (and resultant runoff volumes) in the non-urbanized upland areas is as much as four times greater than that from the urbanized valley areas.

Approximately 8% of Riverside County drains into surface waterbodies within the SMR. These inland surface waters include the Santa Margarita River, Murrieta Creek, Warm Springs Creek, Diamond Valley Reservoir, Santa Gertrudis Creek, Tucalota Creek, Lake Skinner, Temecula Creek, Vail Lake, Wilson Creek, Cahuilla Creek, Pechanga Creek and DeLuz Creek. See Table 4.19-C for full list.

The beneficial uses of these inland surface water bodies include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and preservation of rare and endangered species.

(6) Municipal Separate Storm Sewer System

MS4 facilities operated by the permittees in the SMR consist of an estimated 145 miles of major MS4 facilities (e.g., storm drains, channels, retention basins, etc.). Each SMR permittee maintains a labeled map of their entire MS4 and the associated drainage areas.

(7) Current Water Quality Concerns and Issues

Urban runoff discharged to MS4s in Riverside County ultimately flows to various surface water bodies (inland streams, lakes, and reservoirs) and typically carries pollutants that originate from numerous dispersed and uncontrolled sources. Examples of pollutants that may be present in Urban runoff are fertilizer, heavy metals, nutrients, petroleum products, sediment, bacteria, chemicals and litter.

Because the SMR is large and has many land uses, the water quality concerns in sub-watersheds vary. However, each land use can potentially contribute pollutants to nearby streams, rivers and lakes. The infrastructure that supports people's activities (e.g., roads, parks, MS4, and wastewater collection and treatment facilities) may contribute to water quality concerns if not properly managed. Other sources of stormwater runoff, including agricultural areas, are exempt from the requirements of the NPDES permitting program established under the CWA. In addition, some pollutants, such as total suspended solids, may be found at elevated levels in runoff from non-urban land uses. Further, certain activities that generate pollutants in urban runoff are beyond the ability of the permittees to eliminate. Examples include operation of internal combustion engines, atmospheric deposition, brake pad wear, tire wear, residues from lawful application of pesticides, nutrient runoff from agricultural activities and leaching of naturally occurring minerals from local geography.

Some receiving waters in the SMR (for example, Murrieta Creek and the Upper Santa Margarita River) are identified as impaired due to phosphorus. See Table 4.19-C. The San Diego RWQCB has also identified receiving waters that require additional monitoring to improve the quantity and/or quality of data used to develop the Section 303(d) list. Currently, some receiving waters within the SMR have been designated as needing additional monitoring data for parameters such as metals (iron, manganese), TDS, sediment or sulfates. No TMDLs have been established for receiving waters in the SMR.

c. Whitewater River Watershed

The Whitewater River region lies within the Whitewater River Hydrologic Unit of the California desert and is that river's major drainage course. Several distinct characteristics make this area unique relative to other MS4 regulated entities. There is perennial flow in the surrounding mountains, but because of diversions and percolation into the basin, this perennial flow infiltrates in the Whitewater River prior to reaching the urbanized area of the Coachella Valley.

The Coachella Valley Stormwater Channel (CVSC) is the constructed downstream extension of the Whitewater River channel starting near Indio. It serves as a drainage way for irrigation return flows, treated community wastewater and urban runoff. The Coachella Valley Water District (CVWD) operates and maintains the CVSC and the regional subsurface drainage collection system for the Coachella Valley. General information from CVWD 2006-07 Annual Review and Water Quality Report states approximately 245,900 AF of water was provided for irrigation.

(1) Climate

Precipitation in the Whitewater River region is typically only 3.6 inches per year in the urbanized areas of the Coachella Valley. In addition to the overall lack of precipitation in the Whitewater River region, there is no defined rainy (wet) season within the watershed; winter storms may occur during late fall and early winter months. However, the General Industrial Storm Water Permit defines the rainy season to be between October 1st and May 31st.

Commonly, winter storms result from moisture-laden air from extra-tropical cyclones. Winter storms tend to be low intensity storms that cover large areas of the Whitewater River watershed. The Whitewater River region is also subject to summer thunderstorms, common from July through September. These summer storm events occur when moist and unstable air is subject to convective lifting. Summer thunderstorms tend to be highly localized and commonly result in high intensity precipitation. Finally, the region is also subject to rare summer storms, which normally occur from July to September. These storms are the result of moisture-laden air originating over the Gulf of Mexico or the South Pacific Ocean. These storms can result in heavy precipitation and last several days.

(2) Urbanization Patterns

Although portions of the watershed are experiencing rapid growth, only 3.5% of the watershed is comprised of urban (residential, commercial and industrial) land uses. Non-urban land uses, including rural residential, agriculture and open space constitute the majority of the land uses. Assuming that the urbanized area of the watershed increases proportionally to population, 96% of the watershed would remain in non-urban land uses in 2010. Also, over half (57%) of the watershed consists of federal, state and tribal lands that are not under the jurisdiction of the permittees.

(3) Hydrology

Non-storm urban runoff discharges to the receiving waters in the Whitewater River region are relatively minor based on flow volume due to natural soils conditions and permittees' requirements that new development infiltrate urban runoff. The soils in the Whitewater River region consist primarily of sands that promote rapid infiltration of runoff. During most years, perennial mountain streams tributary to the Whitewater River infiltrate or evapotranspirate prior to reaching urbanized areas.

The CVSC has been identified as impaired for pathogens in that portion from Dillon Road to the Salton Sea and for toxaphene in that portion from Lincoln Street to the Salton Sea. Thus, further monitoring must be conducted to adequately characterize the impacts of non-storm water urban runoff discharges into the receiving waters.

The City of Banning, although included as a permittee on Riverside County's MS4 Permit, does not share an interconnected MS4 with the remainder of the permittees. The MS4 operated by the City of Banning discharges directly into the San Gorgonio River, a receiving water. Most MS4 discharges from Banning infiltrate (e.g., drain into the ground). During significant runoff events, storm drainage may flow as far as the CVWD infiltration basins near the City of Palm Springs, which are several miles upstream of urban runoff discharges from the MS4s operated by the other permittees. However, the City of Banning is included in this MS4 Permit to facilitate coordination with the regional programs implemented by the permittees and to reduce the administrative duties on the RWQCB.

Similarly, the City of Desert Hot Springs also does not share an interconnected MS4 with the remainder of the permittees. The MS4 operated by Desert Hot Springs drains to several washes tributary to the Little and Big Morongo Washes, which are receiving waters. Most discharges from the City of Desert Hot Springs infiltrate. Rarely, and only during significant storm events, does any storm drainage flow into the Whitewater River. However, Desert Hot Springs is likewise included in this MS4 Permit to facilitate coordination with the regional programs implemented by the permittees and to reduce the administrative duties.

(4) Salton Sea

The Salton Sea restoration legislation requires that the Secretary for Resources of the Salton Sea Ecosystem Restoration Program to undertake a restoration study to determine the preferred alternative for the restoration of the Salton Sea ecosystem and the permanent protection of wildlife dependent on that ecosystem. The Salton Sea ecosystem is defined to include, but not limited to, the Salton Sea, agricultural lands surrounding the Salton Sea and the tributaries and drains within the Imperial and Coachella valleys that deliver water to the Salton Sea. The CVSC is also tributary to the Salton Sea.

In June of 2007, the Secretary for Resources of the Salton Sea Ecosystem Restoration Program certified the Final Programmatic EIR in compliance with CEQA and in January 2008, the Legislative Analyst's Office released a report titled "Restoring the Salton Sea." The report discusses the history and current state of the Salton Sea and the legal and policy reasons for restoring the Salton Sea. The report also makes recommendations on how the California legislature should proceed with restoration.

(5) Urban Runoff Characterization

Urban runoff contains waste, as defined in the CWC, which contains pollutants that could adversely affect the quality of the Waters of the State. The discharge of pollutants in urban runoff from a MS4 is also a "discharge of pollutants from a point source into Waters of the United States" as defined in the CWA. Urban runoff includes discharges from residential, commercial, industrial and construction areas within the Whitewater River region.

Urban runoff may contain elevated levels of pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, compounds of nitrogen and phosphorus), pesticides (DDT, chlordane, diazinon, chlorpyrifos), heavy metals (cadmium, chromium, copper, lead, zinc) and petroleum products (oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons). Urban runoff can carry these pollutants to receiving waters within the Whitewater River region and, in addition, although infrequently, the region's urban runoff can carry these pollutants to other receiving waters as well. These pollutants can then impact the beneficial uses of the receiving waters and cause pollution or create a nuisance.

Pathogens (from sanitary sewer overflows, septic system leaks and spills and leaks from portable toilets, pets, wildlife and human activities) may affect water-contact and non-contact water recreation. Floatables (from trash) are an aesthetic nuisance and may provide a substrate for algae and insect vectors. Oil and grease may coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation. Other petroleum hydrocarbon components may be toxic to aquatic organisms and may impact human health. Suspended and settleable solids (from sediment, trash and industrial activities) may be deleterious to benthic (deep water) organisms and may cause anaerobic conditions (lack of oxygen in the water). Sediments and other suspended particulates may cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. Sediment and other suspended particles may also screen out light, hindering photosynthesis and normal aquatic plant growth and development.

Stormwater flows from non-urbanized areas such as National Forests, State Parks, wilderness and agricultural uses naturally exhibit high levels of suspended solids due to climate, hydrology, geology and geography. Runoff from these non-urbanized areas may flow into the MS4 and affect flow and water quality. Toxic substances (from pesticides, petroleum products, metals and industrial wastes) can cause acute and/or chronic toxicity, and may bioaccumulate in organisms to levels that may be harmful to human health. Nutrients (from fertilizer use, fire-fighting chemicals, decaying plants, confined animal facilities, pets and wildlife) can cause excessive algal blooms. These blooms may lead to problems with taste, odor, color and increased turbidity, and may depress the dissolved oxygen content leading to fish kills.

There is a direct correlation between urbanization and impacts to receiving water quality. In general, the more heavily developed the area, the greater the potential impact to receiving waters from urban runoff. During urban development two important changes may occur: Natural pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops and parking lots. Natural soil can both absorb rainwater and remove pollutants, but pavement and concrete can do neither, thus, the absorptive characteristics of the land are greatly reduced. Secondly, urban development may create new pollution sources as human population density increases and brings with it proportionately higher levels of vehicle emissions, vehicle maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc., which may either be washed into or directly dumped into the MS4. Because of these two changes, the runoff leaving a developed urban area may be significantly greater in volume, velocity and pollutant load than the predevelopment runoff from the same area. These effects are minimized when effective Best Management Practices (BMPs) to manage urban runoff are implemented and maintained.

Urban runoff may contain pollutants that may threaten human health. Individually and in combination, pollutants discharged from MS4s may cause or threaten to cause a condition of pollution (i.e., an alteration of water quality by waste to a degree which unreasonably affects the waters for designated beneficial uses and/or facilities which serve them), contamination or nuisance. The discharge of pollutants from MS4s may cause the concentration of pollutants to prevent attainment of applicable receiving water quality objectives and thereby impair or threaten to impair designated beneficial uses.

Within the Whitewater River region, a number of constituents of concern commonly associated with urban runoff can occur and are monitored. These include metals, such as arsenic, barium, cadmium, chromium, lead, mercury and selenium; the pathogen, *E. coli;* and nutrients, such as nitrogen (nitrate, nitrite, ammonia), ortho-phosphorous and TDS. See Table 4.19-C for full list.

(6) Objectives of MS4 Permit

The objectives of the MS4 Permit for the Whitewater River watershed are to:

- Renew Board Order No. 01-077 NPDES No. CAS617002, which regulates urban runoff within the Whitewater River watershed.
- Regulate the discharge of potential pollutants in urban runoff that discharge to surface waters in the Whitewater River region.
- Regulate non-storm water discharges associated with retrofit, maintenance and construction activities at permittees' maintenance yards, facilities or roads.

- Implement regulatory requirements prescribed in the Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) and requirements of Section 402(p) of the CWA and Title 40 Code of Federal Regulations (40 CFR) Part 122.

4. Stormwater Management Plans

MS4 permits start with a Report of Waste Discharge (ROWD) as the application. Based on this, the applicable RWQCB issues an NPDES permit and waste discharge requirements 'Order' as the basis for the MS4 permit. The permittees must then develop stormwater management plans and local implementation plans to implement the details of the Order/MS4 Permit.

Towards this end, the County of Riverside developed a single Drainage Area Master Plan (DAMP) the addresses both the Santa Ana and Santa Margarita Regions. The Whitewater Region has its own Stormwater Management Plan (SWMP) and, to address post-construction urban runoff, a Water Quality Management Plan for Urban Runoff.

The DAMP addresses the requirements of the municipal separate storm sewer system (MS4) Permits issued to the Riverside County permittees by the Santa Ana RWQCB in 2002 and the San Diego RWQCB in 2004, and incorporates programs developed since 1993 and amendments since 2004. Since the DAMP addresses both regions, additional plans and programs specific to a given region, where different, are attached as appendices to the DAMP. For example, the requirements of the watershed SWMP are addressed throughout the DAMP but those specific to the Santa Margarita watershed are also addressed in an appendix (i.e., Appendix S) to the DAMP.

The DAMP describes a wide range of continuing and enhanced Best Management Practices (BMPs) and control techniques, which are being implemented during the five-year terms of the Third-term MS4 Permits and describes the overall Urban Runoff management strategies planned by the permittees in the Santa Ana and Santa Margarita regions of Riverside County. The DAMP has been prepared to meet the complex urban runoff management needs in the Santa Ana and Santa Margarita regions consistent with the MS4 Permits.

Among other provisions, the MS4 Permits require the permittees to comply with the following in order to meet the provisions contained in Division 7 of the CWC and regulations adopted there under, and the provisions of the CWA, as amended and the regulations and guidelines adopted there under:

- Under CWA Section 122.26(d)(2)(i)(F), the Permittees must continue to prohibit illicit connections and illegal discharges (non-storm water) from entering their MS4.

- The discharge of urban runoff from each permittee's MS4 facilities to the waters of the U.S. containing pollutants that have not been reduced to the maximum extent practicable is prohibited.

- Discharges from the MS4 that cause or contribute to receiving water quality standards for surface or groundwater being exceeded are prohibited.

The permittees must also continue to effectively prohibit the discharge of non-storm water into their respective MS4s and to the Waters of the U.S., unless such discharge is authorized by a separate NPDES permit or specifically allowed by the following provisions. The Permittees are not required to prohibit the discharges identified below. If, however, any of the following allowable non-storm water discharges are identified as a significant source of pollutants, coverage under their own or other NPDES Permit or waste discharge requirements, may be required.

a. Discharges covered by a NPDES permit, Waste Discharge Requirements or waivers issued by a Regional Water Quality Control Board or the State Board. Unless a permittee is the discharger, the permittees are not responsible for any exceedances of receiving water limitations associated with such discharges.

b. Discharges from potable water line flushing and other potable water sources.

c. Discharges from landscape irrigation, lawn/garden watering and other irrigation waters.

d. Air conditioning condensate; dechlorinated swimming pool discharges.

e. Diverted stream flows; rising groundwaters and natural springs; and, flows from riparian habitats and wetlands.

f. Groundwater infiltration (as defined in 40 CFR 35.2005(20)) and uncontaminated pumped groundwater.

g. Passive foundation drains and passive footing drains; water from crawl space pumps.

h. Waters not otherwise containing wastes as defined in CWC Section 13050(d).

i. Other types of discharges identified and recommended by the permittees and approved by the RWQCB.

The RWQCB may issue Waste Discharge Requirements for discharges exempted from NPDES requirements, such as agricultural irrigation waters, if identified to be a significant source of pollutants. The RWQCB may also amend the MS4 Permit to add categories of allowable non-stormwater discharges based on a finding that they are not significant sources of pollutants, or remove categories of allowable non-storm water discharges listed above, based upon a finding that the discharges are a significant source of pollutants.

5. County Drainage Plans

Within western Riverside County, the FCWCD oversees implementation and compliance of both general and MS4 permits under the NPDES. Within the Coachella Valley, this function is maintained by the Coachella Valley Water District (CVWD). In addition, these agencies also oversee Riverside County's municipal storm drain systems for conveying stormwater flows. This is done via two main planning instruments: the master drainage plan and the area drainage plan.

According to FCWCD, a master drainage plan (MDP) addresses the current and future drainage needs of a given community. The boundary of the plan usually follows regional watershed limits. The proposed facilities covered by a MDP may include channels, storm drains, levees, basins, dams, wetlands or any other conveyance capable of economically relieving flooding problems within the plan area. The plans also include estimates of facility capacities, sizes and costs.

MDPs are prepared for a variety of purposes. First, the plans provide a guide for the orderly development of the County of Riverside. Second, they provide an estimate of costs to resolve flooding issues within a community and are used by the County of Riverside to determine capital project expenditures for each budget year. In addition, the MDPs can be used to establish Area Drainage Plan fees for a given community, which prevent existing taxpayers from having to shoulder the burden of land development costs.

An Area Drainage Plan (ADP) is a financing mechanism used to offset taxpayer costs for proposed drainage facilities. The State of California's Subdivision Map Act requires that agencies imposing *drainage* fees have a

general drainage plan for the fee area, a special fund for the fees and an equitable distribution of the fees prior to implementation. The ADP is essentially the master drainage plan for an area with additional language supporting the costs and distribution of the fee within the plan area. Under an ADP, fees are imposed on new development *projects* within the area covered by the ADP. *Not all areas within the County are within an MDP, nor do all MDP's have an associated ADP.*

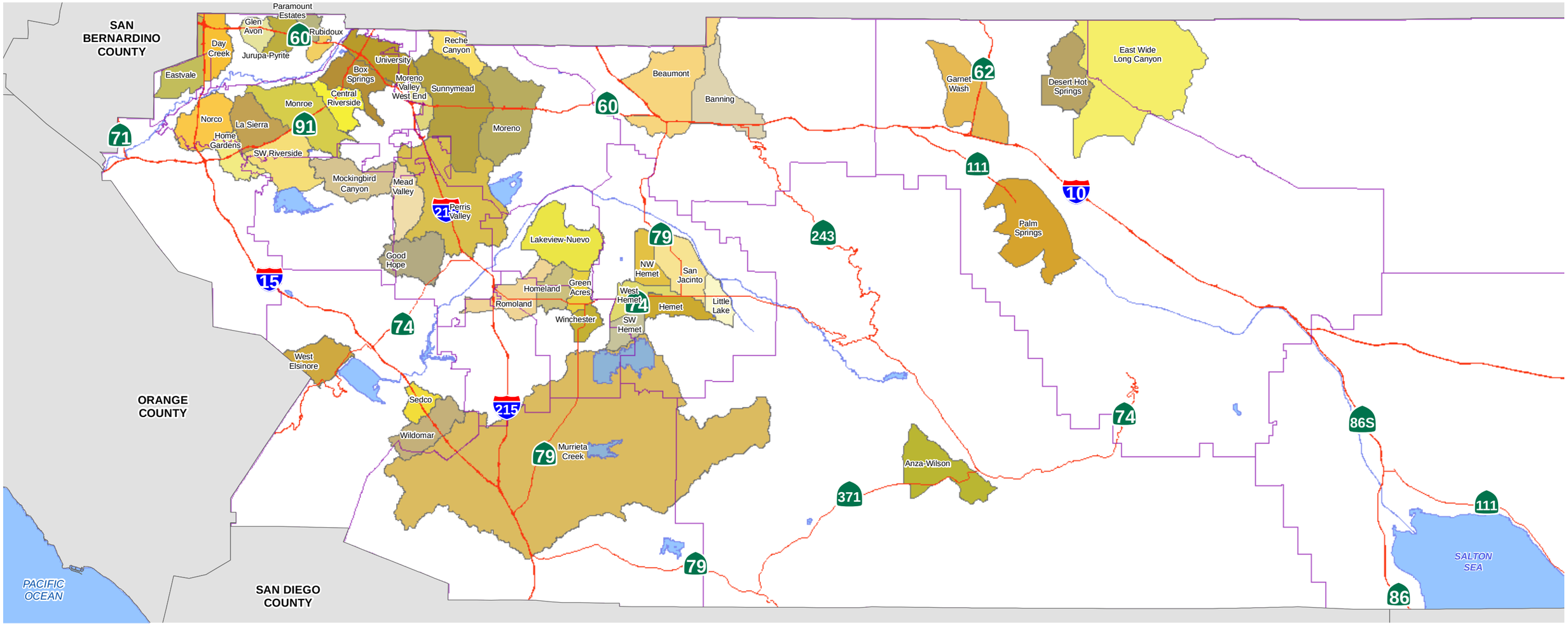
Developments falling under the Subdivision Map Act (those requiring a division of lands) pay fees on a per-acre basis. Developments falling outside of the Subdivision Map Act (known as discretionary developments) can only be assessed fees based on their impacts to the watershed. The ADP Rules and Regulations state that these impacts can be related to the amount of impervious surface area that the development creates. Therefore, discretionary developments are charged not on a gross acreage basis, but on the total impervious acreage created by their development. The ADP Rules and Regulations also establish guidelines used in the administration of ADPs including design and construction responsibilities and fee credit determination.

As shown in Figure 4.19.9 (Master Drainage Plans in Riverside County) and Table 4.19-E (Riverside County Master Drainage Plans and Area Drainage Plans), there are presently 48 Master Drainage Plans within Riverside County, encompassing areas from the western edge of the county all the way out through the Coachella Valley region to the east and encompassing both incorporated city and unincorporated county territories.

Table 4.19-E: Riverside County Master Drainage Plans and Area Drainage Plans

Zone	Plan	Zone	Plan	Zone	Plan
Master Drainage Plans					
1	Box Springs	3	Sedco	4	Sunnymead
1	Central Riverside	3	West Elsinore	4	Southwest Hemet
1	Day Creek	4	Good Hope	4	West End Moreno
1	Glen Avon	4	Green Acres	4	West Hemet
1	Home Gardens	4	Hemet	4	Winchester
1	Jurupa / Pyrite	4	Homeland	5	Banning
1	La Sierra	4	Lakeview / Nuevo	5	Beaumont
1	Monroe	4	Little Lake	~~6~~	~~Cathedral City~~
1	Monroe System "B"	4	Mead Valley	6	Desert Hot Springs
1	Paramount Estates	4	Moreno	~~6~~	~~East Wide Canyon, Long Cyn & Tribs~~
1	Reche Canyon	4	Northwest Hemet	~~6~~	~~Garnet Wash and Tributaries~~
1	Rubidoux	4	Perris Valley	6	Palm Springs
1	*San Sevaine Channel*	4	Perris Valley Channel	7	Anza / Wilson Creek
1	Southwestern Riverside	4	Romoland	7	Murrieta Creek
1	University	4	Salt Creek	7	Wildomar
2	Eastvale	4	San Jacinto		
2	Norco (*No Report*)	4	San Jacinto River *Basin*		
Area Drainage Plans					
1	Day Creek	4	Hemet Regional	4	San Jacinto River
1	Reche Canyon	4	Homeland / Romoland	4	Sunnymead
1	Southwest Riverside	4	Lakeview / Nuevo	4	West End Moreno
2	Eastvale	4	Moreno	7	Anza
2	Lake Mathews	4	Perris	7	Murrieta Creek
~~3~~	~~Elsinore Benefit Assessment~~	4	Salt Creek *Channel*		~~Mockingbird Canyon~~
3	West Elsinore	4	San Jacinto Regional		

Source: Riverside County Flood Control and Water Conservation District, departmental website [http://rcflood.org/content/MDPADP.htm], accessed October 2012, *Updated November 2014.*



Data Source: Riverside County (2012)

- Anza-Wilson
- Banning
- Beaumont
- Box Springs
- Central Riverside
- Day Creek
- Desert Hot Springs
- East Wide Long Canyon
- Eastvale
- Garnet Wash
- Glen Avon
- Good Hope
- Green Acres
- Hemet
- Home Gardens
- Homeland
- Jurupa-Pyrite
- La Sierra
- Lakeview-Nuevo
- Little Lake
- Mead Valley
- Mockingbird Canyon
- Monroe
- Moreno
- Moreno Valley West End
- Murrieta Creek
- NW Hemet
- Norco
- Palm Springs
- Paramount Estates
- Perris Valley
- Reche Canyon
- Romoland
- Rubidoux
- SW Hemet
- SW Riverside
- San Jacinto
- Sedco
- Sunnymead
- University
- West Elsinore
- West Hemet
- Wildomar
- Winchester
- Highways
- Area Plan Boundary

Figure 4.19.9

December 16, 2013

0 5 10 Miles

MASTER DRAINAGE PLANS IN RIVERSIDE COUNTY

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4.19.3 Existing Environmental Setting – State and Regional Water Supply

Riverside County water supplies are comprised of both imported and local water resources. As shown in Figure 4.19.10 (Major California Water Conveyance Facilities), two primary sources of imported water supplies serve Riverside County from the water infrastructure that spans the state: the State Water Project (SWP) and the Colorado River. Sources of local water supplies include surface water, groundwater, recycled water, stormwater and desalinated and other remediated supplies. In addition and as further discussed below, urban and agricultural water conservation has been ~~aggressively~~ implemented since the 1990s, which has led to lower per-capita water use and more efficient irrigation and agricultural practices.

In recent years, various circumstances have converged to restrict the timing, availability and reliability of imported water supply deliveries. For instance, the state *has experienced and is currently experiencing* ~~recently experienced~~ a severe multi-year drought ~~period~~. In addition, environmental, legal and regulatory issues have reduced the amount of water available from the Sacramento-San Joaquin Delta through the SWP and the federal Central Valley Project (CVP). Other legal and regulatory issues have affected deliveries from the Colorado River. Global climate change is another factor having the potential to affect the timing, delivery amounts and reliability of the state's major water supply projects. All of these and other potentially limiting factors are briefly summarized below, as well as discussed in greater detail in Appendix EIR-8. This section also includes data and analysis on both the existing and future projected supply and demand for imported water from the SWP.

This section focuses on statewide and regional (i.e., imported) water supplies and large-scale factors affecting its availability. The subsequent section, 4.19.4, discusses water supplies from a more local perspective and includes discussions on groundwater and local water availability.

A. Major Imported Water Supplies Available to Riverside County

1. State Water Project (SWP)

Like more than two-thirds of California's residents, much of the drinking water used by Riverside County residents is SWP water originating from the San Francisco-San Joaquin Bay-Delta (the Delta). First approved in 1959, the SWP is the nation's largest state-built water and power development and conveyance system. See Figure 4.19.10. Planned, designed, constructed and now operated and maintained by the California DWR, this unique facility provides water supplies for 25 million Californians and 750,000 acres of irrigated farmland. California's SWP is a water storage and delivery system of reservoirs, aqueducts, power plants and pumping plants. Its main purpose is to store water and distribute it to 29 urban and agricultural water suppliers (State Water Contractors) in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast and Southern California. Of the contracted water supply, 70% goes to urban users and 30% goes to agricultural users. In all, the SWP makes deliveries to two-thirds of California's population. It also is operated to improve water quality in the Delta, control Feather River flood waters and to provide recreation and enhance fish and wildlife throughout the state. Statewide, the SWP includes 34 storage facilities, reservoirs and lakes, 20 pumping plants, four pumping-generating plants, five hydroelectric power plants and about 701 miles of open canals and pipelines.

The SWP's water supply capability depends on rainfall, snowpack, runoff, reservoir storage, pumping capacity from the Delta and legal environmental constraints on project operations. SWP water supply comes primarily from storage at Lake Oroville (fed from the Sierra Nevada Mountains) and high runoff flows in the Delta. Water

deliveries have ranged from 1.4 million AF in dry years to roughly 3.7 million AF in wet years (MWD RUWMP 2010).

The DWR governs the State Water Project and determines SWP water allocations to State Water Contractors (SWCs) according to a variety of factors, including watershed status relative to snowpack, precipitation, environmental needs and other factors (see discussion, below). The end result is the release of a delivery reliability report that forecasts SWP water yields. The SWP contracts lay out the contractors' and the State of California's obligations concerning delivery of water under both surplus and drought conditions. In each contract, there is a 'Table A' schedule that details how much water the contractor is 'entitled' each year. These 'entitlements' quantify the maximum delivery of SWP water that each contractor could expect, and the share of SWP costs for which the SWC would bear. These entitlements, however, do not guarantee water delivery.

Rather, SWP deliveries are based on the State of California's determination of water availability and for a variety of reasons can be less than the entitled amounts. For example, for 2010 the DWR initially approved 208,580 AF of Table A water for long-term SWP contractors in late November 2009. (One acre-foot of water equals 325,851 gallons; roughly equal to a year's water usage for a suburban family household). Subsequently, several factors including "existing storage in SWP conservation reservoirs [and] SWP operational constraints" lead the DWR to increase Table A supply allotments to a total of 625,800 AF in February 2010. This amount was 15% of the 4,172,000 AF total requested by SWCs. Then, as water availability became more certain, as 2010 progressed the DWR continued to raise the amount available to SWCs. By June 2010, the final Table A allocation total amounted to 2,086,000 AF, roughly 50% of most SWP contractors' 2010 requested Table A amounts. *It is difficult for the SWP to deliver a 100% allocation even in wet years, because of the Delta's pumping restrictions to protected threatened and endangered fish. The most recent 100% allocations occurred in 1999 and 2006.*

Due to the extreme drought conditions in California, the SWP is currently allocating a very limited amount of water to the requesting public agencies. The 2013 year recorded sparse snowpack, and many areas ended the year with the lowest rainfall amounts on record. The final SWP allocation for calendar year 2013 was 35% of the 4 million acre-feet requested. The drought continued into 2014, with the some of the driest periods on record. In January 2014, the DWR estimated that it would be able to deliver only 5% of the approximately 4 million acre feet requested from the SWP. See section 4.19.3-D for further discussion of factors that can affect water delivery reliability.

Since their inception, a variety of amendments to the State Water contracts have developed. Article 21 of the SWP contract provides for sale of surplus water available during periods of heavy flow. Under the Monterey Agreement, the Article 21 water surplus program was developed in 1995 to allow contractors to take delivery of water over and above approved and schedules contract deliveries on a short-term, interruptible basis. Both Table A and Article 21 water deliveries are based on the 2011 SWP Final Delivery Reliability Report.

2. Sacramento-San Joaquin Bay-Delta

As detailed in DWR's 2011 SWP Final Delivery Reliability Report, the Delta is a network of natural and artificial channels and reclaimed islands at the confluence of the Sacramento and San Joaquin rivers. The Delta forms the eastern portion of the San Francisco estuary, receiving runoff from more than 40% of the state's land area. It is a low-lying region where over the years sediment from the Sacramento, San Joaquin, Mokelumne, Cosumnes and Calaveras rivers has mingled with organic matter deposited by marsh plants. Covering 738,000 acres interlaced with hundreds of miles of waterways, much of the land is below sea level and relies on more than 1,100 miles of levees for protection against flooding. The SWP and the federal CVP, which delivers Delta water to the Central Valley, use Delta channels to convey water to the southern Delta for diversion, making the Delta ~~is~~ the focal point for water distribution throughout the state. In fact, the Delta is one of the few estuaries in the world that is used as a major source of drinking water supply: about one quarter of California's drinking water comes from the Delta

and two-thirds of all Californians get some portion of their drinking water from the Delta. However, the Delta also provides a unique estuarine habitat for many resident and migratory fish and birds, some of which are listed as threatened or endangered. Most of the region's native fish either migrate through the Delta or move into it for spawning.

While CVP pumps have a maximum pumping capacity of 4,600 cubic feet per second (cfs) and SWP pumps have a combined pumping capacity of 10,300 cfs, the pumping rates are often restricted and, therefore, water diversions are usually much lower than they would be if the pumps operated at maximum capacity. CVP and SWP reservoir releases and the resulting amount of water exported from the Delta must follow the Coordinated Operating Agreement, which sets guidelines for the sharing of supply and responsibility for meeting water quality standards in the Delta, as well as other regulatory mechanisms. During wet conditions, the SWP and CVP can often divert water considered as excess in the Delta and store it in other locations in-state for release during dry conditions. Diversions during excess Delta conditions are still governed by various determinations and rules.

Besides legal and regulatory constraints, the amount of water the SWP can deliver to State Water Contractors depends on key factors such as rainfall amounts, snowpack and stored water levels, and pumping capacity from the Delta. The inherent yearly variability in timing, amount, location and form of precipitation in California, as well as the frequently changing regulatory restrictions, introduce some unpredictability as to the availability of future SWP source water and resulting SWP deliveries. SWP operations are closely regulated by the State Water Resources Control Board (SWRCB) pursuant to Decision 1641 (D-1641) and, more recently, have been increasingly restricted due to regulations relating to certain fish species listed under the federal Endangered Species Act (FESA) and California Endangered Species Act (CESA).

3. Colorado River

In addition to SWP supplies, the other primary source of imported water supply utilized within Riverside County is the Colorado River. Since 1941, the Colorado River has played a critical role in supplying supplemental water to Southern California and Riverside County. As with the SWP, changed conditions and legal challenges involving Colorado River water have resulted in less water available for much of Southern California than in past years. However, the amount of Northern California water available to Southern California through the SWP can vary greatly with the weather and in an extremely dry year Southern California may be able to secure very little Northern California water for delivery. For this reason, Colorado River water remains vitally important to Southern California's water supply.

Seven states, including California, Nevada and Arizona, share usage of waters originating from the Colorado River, the second longest river in the continental United States. Division and use of this water is governed by 'the Law of the River,' a collection of laws, compacts and agreements established over the last century. In 1918, the seven states and the federal government began meetings in an attempt to settle the rights to the use of Colorado River water. This culminated in 1924 in the Colorado River Compact, which allocated 7.5 million AF per year (AFY) of river water between the seven states.

To satisfy a condition imposed by Congress in the Boulder Canyon Project Act, California's legislature enacted the Limitation Act in 1929, in which it agreed to limit California's consumptive use of Colorado River water to 4.4 million AFY, plus not more than one-half of any excess or surplus water unapportioned by the Colorado River Compact. In 1931, the Seven Party Agreement was signed and provides the basis for the priorities among California's contractors to use of Colorado River water made available to California. The Palo Verde Irrigation District (PVID), the Yuma Project, Imperial Irrigation District (IID), Coachella Valley Water District (CVWD) and MWD are the entities that currently hold the priorities. These priorities are included in the contracts that the

U.S. Department of the Interior executed with the California agencies in the 1930s for delivery of river water from Lake Mead.

As summarized in Table 4.19-F (Colorado River Seven-Party Agreement Priorities and Water Contracts), under Priorities 1 through 3, an amount not to exceed 3.85 million AF was apportioned to PVID, the Yuma Project, IID and CVWD, all agricultural suppliers, for beneficial consumptive use; MWD has the fourth and fifth priorities. However, the Seven Party Agreement did not specify individual quantities for each of the first three priorities; rather, the amount of water available under the third priority was limited to the amount unused by the holders of priorities 1 and 2 on designated areas of land. This lack of quantification among the agricultural priorities posed an obstacle to the acquisition of water from the agricultural entities for use by urban users in other service areas. The first four priorities total the 4.4 million AFY available to California. However, Arizona and Nevada did not use their full apportionment for many years and, until fairly recently, this water was available to California's lower-priority water rights holders.

In the 1980s, certain Indian reservations, federal wildlife refuges and other users, some but not all of whom were identified in the Seven Party Agreement, were found to also hold superior rights to Colorado River water. Consumptive use by these entities could reach as much as 61,000 AF annually. Because over 5.36 million AF of Colorado River water had already been allocated by California's Seven Party Agreement, it was not clear which rights would be affected by the use of the holders of these newly identified rights. At that time, no formal guidelines existed to determine whether surplus water would be available. Decisions regarding surplus water availability were to be made at the discretion of the U.S. Secretary of the Interior.

As a result, the year-to-year availability of Colorado River water to urban users became much more variable and unpredictable. The State of California acknowledged that urban users would obtain less water from the Colorado River in the future than they had in the past, but the lack of clearly quantified water rights hindered efforts to promote water management projects. The Secretary of the Interior asserted that California's users of Colorado River water had to limit their use to a total of 4.4 million AF per year, plus any available surplus water. Under the auspices of the State of California's Colorado River Board, these users developed a draft plan to resolve the problem, which was known as "California's Colorado River Water Use Plan" or the "California Plan." It characterized how California would develop a combination of programs to allow the State of California to limit its annual use of Colorado River water to 4.4 million AF per year plus any available surplus water.

Table 4.19-F: Colorado River Seven-Party Agreement Priorities and Water Contracts

Priority	Description	Water (AFY)
1	Palo Verde Irrigation District (PVID) – gross area of 104,500 acres of land in the Palo Verde Valley	3,850,000
2	Yuma Project (Reservation Division) – not exceeding a gross area of 25,000 acres in California	
3(a)	Imperial Irrigation District (IID) and land in Imperial and Coachella valleys[1] to be served by All American Canal	
3(b)	PVID – 16,000 acres of land on the Lower Palo Verde Mesa	
4	Metropolitan Water District of Southern California (MWD) for use on the coastal plain of Southern California	550,555
	Subtotal	**4,400,000**
5(a)	MWD for use on the coastal plain of Southern California	550,000
5(b)	MWD for use on the coastal plain of Southern California[2]	112,000
6(a)	IID and land in Imperial and Coachella valleys[1] to be served by the All American Canal	300,000
6(b)	PVID – 16,000 acres of land on the Lower Palo Verde Mesa	
7	Agricultural use in the Colorado River Basin in California	*Remaining surplus*
	Total Prioritized Apportionment	**5,362,000**

Footnotes:
1. The Coachella Valley Water District now serves Coachella Valley.
2. In 1946, the City of San Diego, the San Diego County Water Authority, MWD and the U.S. Secretary of the Interior entered into a contract that merged and added the City of San Diego's rights to store and deliver Colorado River water to the right of MWD. The conditions of that agreement have long since been satisfied.

Source: DWR, 2009 California Water Plan Update, Existing Regional Water Supplies, Table A.2-5, page A.2-11, 2009.

Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

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Figure 4.19.10

MAJOR WATER CONVEYANCE INFRASTRUCTURE IN CALIFORNIA

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B. State Water Contracts and Existing SWP Supplies

As outlined in chapter 3 of the DWR's 2011 SWP Final Delivery Reliability Report, during the 1960s, as the SWP was created, long-term contracts were signed by DWR and 29 urban and agricultural water suppliers ('SWP contractors') in various locations within California. The contracts are essentially uniform and will expire in 2035. This section explains the basics of SWP water contracts and the various types of SWP water, especially 'Table A' water. The discussion also outlines some of the factors influencing Table A water delivery. Unless noted otherwise, all data in this section comes from DWR's 2011 Final Delivery Reliability Report for the State Water Project (issued June 2012).

The SWP contractors are located in the south San Francisco Bay Area, along the Central Coast, in the San Joaquin Valley and in Southern California. They include cities, counties, urban water agencies and agricultural irrigation districts. Most contractors use the SWP water they receive for municipal purposes; a few use the water for agriculture. The SWP contractors mostly use project water to supplement local supplies, including groundwater, or other imported water. The State of California's 29 SWP contractors include 13 in Southern California, of which four serve Riverside County:

- Coachella Valley Water District
- Desert Water Agency
- Metropolitan Water District of Southern California
- San Gorgonio Pass Water Agency

1. How State Water Contracts Work

Under the terms of their long-term water supply contracts with DWR, the 29 SWP contractors receive specified amounts of water from the SWP each year, called 'annual allocations.'

The SWP's long-term water supply contracts define the terms and conditions governing water delivery and repayment of project costs. In return for the allocated water, the SWP contractors repay principal and interest on both the bonds that initially funded construction of the SWP and the bonds that paid for additional facilities. The contractors also pay all costs, including labor and power, to maintain and operate project facilities. They also pay transportation charges based on the distance between the Delta and each contractor's water delivery point. The contractors also contribute mitigation costs for any environmental impacts of SWP operations on fish and wildlife.

2. SWP 'Table A' Water

Table A is an exhibit to the SWP's water supply contracts. A number of factors affect the amount of Table A water available and the amount of such water actually delivered to SWP contractors in a given year.

The water supply-related costs of the SWP are paid for by SWP contractors. All water contracts signed in the 1960s included an estimate of the date that SWP water would first be delivered and a schedule of the amount of water the contractor could expect to be delivered annually. That amount of water, known as the contractor's annual Table A amount, was designed to increase gradually until the designated maximum for that SWP contractor was reached.

The total combined maximum Table A amount for all SWP contractors was initially 4.23 million AFY, assuming full development of the SWP. At that time, this amount was referred to as the 'maximum project yield.' As a result of amendments to the water supply contracts in the 1990s, the current combined maximum Table A amount is 4.172 million AFY. Of this amount, 4.133 million AFY is the maximum Table A water available for delivery from the Delta. It is recognized that deliveries will be less than the established maximum Table A amount in some years and more than this amount in other years.

The maximum Table A amount is the basis for apportioning water supply and costs to the SWP contractors. Once the total amount of water to be delivered is determined for the year, all available water is allocated in proportion to each contractor's annual maximum SWP Table A amount. To reiterate, however, in some years the SWP cannot deliver the maximum amount of 4.172 million AF, but in other years, the supply exceeds that amount. Additionally, in some years contractors receive other classifications of water from the SWP, such as Article 21 water and turnback pool water (see descriptions, below).

The established maximum Table A amounts for the 29 SWP contractors vary widely. The median is 42,000 AF; thus, the maximum allocations of Table A water for half of the SWP contractors exceed this amount and for the other half they are less. The largest Table A amount is held by the Metropolitan Water District of Southern California (MWD) at 1.912 million AF; the smallest is held by the Littlerock Creek Irrigation District at 2,300 AF.

The Table A amounts determine the maximum water a contractor may request each year from DWR. Table A amounts may also be used as a factor to allocate other available water supplies to each contractor. 'Table A,' or 'Table A water,' represents a portion or all of the annual Table A requested by the SWP water contractors and approved for delivery by DWR, based on hydrologic conditions, current reservoir storage and combined requests from the SWP water contractors. The DWR is not always able to deliver the quantity of water requested by contractors. In these cases, and under certain conditions, a lesser amount is allocated and delivered according to the long-term water supply contracts by prorating the amount in proportion to each SWP water contractor's maximum Table A amount.

Thus, the maximum Table A amount listed in any particular contract should not be read as a guarantee that the SWP contractor will receive that amount. Rather, the maximum Table A amount is a tool in an allocation process that defines an individual contractor's "slice of the pie" (and a factor in allocating each contractor's share of the SWP's costs).

SWP contractors will receive a certain percentage of the maximum Table A amounts in their contracts. As discussed below, the water year type and the contractors' demand levels are among the factors involved in determining the amount of Table A water that will be delivered by DWR to each contractor. At various times of the year, DWR issues projections of anticipated Table A allocations based on then-current conditions and updates those projections as warranted. Deliveries of Table A water to SWP contractors in Riverside County are shown by arrows in Figures 4.19.4 and 4.19.5. See Table 4.19-G (South Coast Region - SWP Table A Deliveries for Existing Conditions) and Table 4.19-H (Colorado River Region - SWP Table A Deliveries for Existing Conditions) for delivery data.

3. Factors Influencing SWP Table A Water Delivery Amounts

The percentage of its maximum Table A amount that an SWP contractor will receive in any given year will vary depending on a variety of factors. For example, the amount and timing of precipitation and ensuing runoff to streams are important in determining how much water will be physically available to the SWP to pump and export from the Delta. The type of precipitation matters as well, along with anticipated patterns of use and consumption

of the source water by entities other than the SWP. The answers to the following questions influence the amount of water delivered to contractors each year:

- How much rain and snow fell within the last year?
- Which parts of California received the precipitation and how much runoff resulted?
- Did rain come as a short intense storm or a long wet spell?
- Did more of the precipitation occur as snow in colder storms or were storms warmer, resulting in more rain that produced higher peak runoff?
- Was snowmelt fast or gradual, and when did the bulk of the runoff occur?

For example, if substantial snowfall occurs late in the wet season, Sierra Nevada rivers can be full of melting snow later than usual in the year, as occurred in 2011. This allows the SWP's Delta pumping to continue at or near capacity for an extended duration, increasing the percentage of Table A water delivered. Conversely, if rain falls on snow early in the year, the resulting early snowmelt results in less water available for Delta pumping later in the year. *Currently, the Sierra Nevada Mountains are experiencing a substantial decrease in snowpack over the past three years, when compared to historical averages. This has a significant and direct effect on how much water can be delivered through the SWP.* Other factors affecting SWP delivery reliability are discussed in more detail in Section 4.19.3.D.

A contractor's local diversion, storage and conveyance facilities are also important considerations in receiving water and in storing the water it receives. A contractor's water demands can also be affected by local weather patterns and water conservation measures. In some years, some contractors may rely more on water from sources such as groundwater or the Colorado River, while in other years they may rely more on the SWP.

The pattern of water demand on a water system can greatly affect the system's reliability. For example, if the demand occurs for only three months in summer, a water system with sufficient annual supply but insufficient water storage may not be able to reliably meet its customers' demands. If, however, the demand is distributed over the year, the system can more easily meet the demand because the need for water storage is reduced or storage could be increased.

4. Other Types of SWP Water

Regardless of water year type, Table A water is given first priority for delivery over other types of SWP water. Contractors have several options for what to do with the water that is allocated to them: use it, store it for later use or transfer it to another contractor. Each long-term water contract describes several types of SWP water that are available to SWP contractors to supplement Table A water: 'Article 21' water, carryover water and turnback pool water, as follows.

a. Article 21 Water

'Article 21 water' (so named because it is described in Article 21 of the water contracts) is water that SWP contractors may receive on a short-term basis in addition to their Table A water, if they request it. Because most SWP contactors often cannot meet their full demands with Table A water, Article 21 water should not be viewed as 'surplus' or 'extra' water. In fact, Article 21 water is used by many SWP contractors to help meet demands

when allocations are less than 100%. Article 21 water is available to an SWP contractor only if the following conditions are met:

- 'Excess water' is flowing through the Delta – that is, when releases from SWP and CVP reservoirs and unregulated flows into the Delta exceed Sacramento Valley water diversions, Delta exports and flows needed to meet Delta water quality and flow requirements. If this scenario occurs, it is usually during December through May.

- The contractor is able to use the surplus water, such as by offsetting the use of groundwater that would otherwise occur, or can store it in its own system. (That is, the water will not be stored in an SWP facility, such as San Luis Reservoir.)

- Delivering this water would not interfere with Table A allocations, other SWP deliveries or SWP operations.

SWP contractors requesting Article 21 water receive this water in the same proportion as their Table A water. Article 21 water becomes available only during wet months of the year, generally December through March. Unless the SWP contractor has facilities to routinely store or manage the Article 21 water it receives, such water is not likely to contribute significantly to local water supply reliability.

b. Carryover Water

'Carryover water' is SWP water that is allocated to an SWP contractor and approved for delivery to that contractor in a given year, but not used by the end of the year. (Note that SWP water deliveries are managed by calendar year, January 1 - December 31, while hydrology is measured by the 'water year,' which is measured October 1 - September 30, to place California's wet season at the year's start.) This water is exported from the Banks Pumping Plant, but instead of being delivered to the contractor, it is stored in the SWP's share of San Luis Reservoir, when space is available, for the contractor to use in the following water year.

Carryover water is like a water savings account that allows water managers flexibility in tough times, such as if the next year is a drought year and the contractor's allocation of SWP water is small. Carryover water was designed to encourage the most effective and beneficial use of water and to avoid obligating the contractors to use or lose the water by December 31 of each year.

With advance notice, SWP contractors can carry over water when they submit their initial request for Table A water or within the last 3 months of the delivery year. They might do this for various reasons, such as local wet conditions or exchange and transfer arrangements. Storage for carryover water, however, no longer becomes available to the contractors if it interferes with storage of SWP water for project needs.

c. Turnback Pool Water

SWP contractors may offer the portion of their allocated Table A water within the current year that exceeds their needs to a 'turnback pool,' where another contractor may purchase this water. DWR sets the price for water offered in turnback pools, which are established in February and March. Contractors that sell their extra Table A water in a turnback pool receive payments from contractors that buy the turnback pool water.

5. Existing SWP Deliveries

The Reliability Report includes an appendix listing historical annual deliveries from the Delta by various water classifications for each SWP contractor for 2001–2010. During this period, deliveries of SWP Table A water from the Delta for 2001–2010 ranged from an annual minimum of 1,049,000 AF to a maximum of 2,963,000 AF, with an average of 2.087 million AF. It is important to note that historical deliveries of SWP Table A water from the Delta over this 10-year period are less than the maximum of 4.132 million AF per year and the DWR indicates this trend is forecast to continue into the future. Tables 4.19-G and 4.19-H, below, detail the existing conditions SWP Table A water deliveries for the State Water Contractors within Riverside County for the South Coast and Colorado River regions, respectively. Future conditions are describes later in this section.

Table 4.19-G: South Coast Region - SWP Table A Deliveries for Existing Conditions

State Water Contractor (in thousands of acre-feet)	Delivery Without Article 56 Carryover	Article 56 Carryover	Total Table A Delivery	Max. Table A Amount	Percent of Max. Table A
Coachella Valley Water District					
Average	79	3	83	138.35	60%
Maximum	128	9	137		99%
Minimum	15	0	15		11%
Desert Water Agency					
Average	29	3	32	55.75	58%
Maximum	44	11	54		98%
Minimum	6	0	6		11%
Metropolitan Water District of Southern California					
Average	1,064	63	1,126	1,911.5	59%
Maximum	1,685	181	1,853		97%
Minimum	200	0	210		11%
San Gorgonio Pass Water Agency					
Average	10	0	10	17.3	59%
Maximum	17	0	17		100%
Minimum	2	0	2		10%

Footnotes:
1. Years surveyed: 1922 – 2003 for 2011 study.
2. The maximum Table A amount for SWP deliveries from the Delta in the 2011 update is 4,133,000 AFY.
3. For Future, 2011 Article 56 Carryover used is the same as that in the 2009 Future Condition scenarios.

Source: DWR, Technical Addendum to 2011 SWP Delivery Reliability Report, Table 10, pp. 101, 107, 119 and 133, 2012.

Table 4.19-H: Colorado River Region - SWP Table A Deliveries for Existing Conditions

State Water Contractor (in thousands of acre-feet)	Delivery Without Article 56 Carryover	Article 56 Carryover	Total Table A Delivery	Max. Table A Amount	Percent of Max. Table A
Coachella Valley Water District					
Average	59	24	84	138.35	60%
Maximum	82	69.18	134		100%
Minimum	9	0	9		7%
Desert Water Agency					
Average	24	10	34	55.75	60%
Maximum	33	28	56		100%
Minimum	4	0	4		7%
Metropolitan Water District of Southern California					
Average	1,031	97	1,128	1,911.5	59%
Maximum	1,408	200	1,498		78%
Minimum	123	0	167		9%
San Gorgonio Pass Water Agency					
Average	8	3	10	17.3	60%
Maximum	10	8	17		98%
Minimum	1	0	2		9%

Footnotes:
1. Years surveyed: 1922 – 2003 for 2011 study.
2. The maximum Table A amount for SWP deliveries from the Delta in the 2011 update is 4,133,000 AFY.
3. Revised Article 56 data used the SWP Analysis Office's requested 2010 data and from SWC input.

Source: DWR, Technical Addendum to 2011 SWP Delivery Reliability Report, Table 9, pages 46, 52, 64 and 78, 2012.

C. State Future Water Forecasts

As reported in the 2009 California Water Plan (page 5-23), before the 2005 Update, state water planning assumptions were based on a "single 'likely' future." Today, the DWR issues three scenarios in order to provide "decision-makers, water managers and planners [with] more information about how different management actions might perform under a range of possible future conditions."

1. Three Baseline Water Scenarios

The 2009 CWP uses three scenarios to forecast "different, but plausible" estimates of future water demands: the 'current trends,' 'slow and strategic growth,' and 'expansive growth' scenarios. Together, these three scenarios are considered the state's 'baseline' because they "represent changes that are plausible and could occur without additional management intervention beyond those currently planned."

As outlined in the CWP, each scenario affects water demands and supplies differently and each includes assumptions about how various factors, such as population and amount of irrigated farmlands, would occur in and affect the future. The 'current trends' scenario assumes recent (as of roughly 2007) trends continue into the future. This includes a state population of nearly 60 million people, increased residential development in interior valleys and longer commuter trips, as well as decreases in irrigated croplands and increases in environmental water uses. It also includes the State of California facing lawsuits on a regular basis: from flood damages to water quality and endangered species protections, as well as regulations that are "not comprehensive or coordinated."

The 'slow and strategic growth' scenario estimates a future where population growth is lower, about 45 million people by 2050. Compact urban development is foreseen as having eased commuter travel and Californians as having "embrace[ed] water and energy conservation." Also, conversion of agricultural land to urban development has slowed and occurs mostly for environmental restoration and flood protection. Lastly, the expansive growth scenario is described as being more resource intensive and with faster population growth (reaching 70 million people in 2050, 60% greater than that of the slow growth scenario). Patterns of low-density suburban and rural development continue, though urban areas also expand while irrigated croplands decrease significantly. Water and energy conservation programs are implemented at a slower rate than earlier trends (5% instead of 10-15%) and protection of water quality and endangered species is driven "mostly by lawsuits, creating uncertainty."

2. Issues Affecting Future Water Demands

Key factors that will affect future water demand include those which are certain, if variable (for example, population growth rates), and those that are unpredictable and thus nearly unforeseeable (for example, the timing and location of 100-year floods due to rainfall). Together, these types of factors lead to "uncertainty" for future water availability – that is a high degree of variation and wide range in forecast precision. Demographic factors that affect future water demand and that are modeled varyingly for the three scenarios, include population, the number of single and multi-family homes, as well as the number of jobs in the state. Agricultural water needs are affected by the amount of irrigated land, climate and individual cropping patterns.

The results of "unmet environmental objectives," such as future environmental requirements or court decisions also affect supplies. In particular, the CWP [page 5-28] reports that none of the three scenarios include, "Additional water to protect species in the Delta resulting from the December 2008 Delta Smelt Biological Opinion issued by the [USFWS] or to protect salmon and several other species resulting from the June 2009 biological opinion issued by the National Marine Fisheries Service."

The scenarios are also subject to affects by future climate change, which can affect rain and snow levels, temperature, drought patterns and plant growing patterns, among others. Even without taking account climate change, general weather patterns, such as average annual precipitation levels, as well as the timing and location of rainfall, have a strong effect on future water supply and demand. Lastly, degree to which water conservation savings would be realized is also variable and unpredictable. (The three scenarios call for conservation rates of 10%, 15% and 5%, for current, slow and expansive trends, respectively.)

3. State Future Scenario Results

Figure 4.19.11 (Statewide – Change in Future Water Demand by Scenario) shows the statewide change in water demand for each sector (urban, agricultural and environmental) by scenario and then summed across all three sectors. The subsequent two figures show the same for the South Coast and Colorado River Hydrological regions. The change in water demand shown is the difference between the average demands for 2043-2050 (projected future) and 1998-2005 (historical). The change in water demand shown by the solid bar assumes a repeat of historical hydrology while the hatched bar shows the change in water demand when considering 12 different climate change scenarios. These climate change scenarios are based on recent scientific studies of future trends in precipitation and temperature, as described in Chapter 4 of the 2009 CWP. Both of these factors heavily influence water demand for outdoor landscaping and irrigated agriculture.

Without considering climate change, the annual combined statewide water demand shows a decrease of about 2.5 million AF under the slow-growth scenario and a 6 million AF increase with the expansive-growth scenario. The 'current trends' scenario lies between these, with a 2 million AF increase per year. With climate change, all three

scenarios show higher water demands than under a repeat of historical climates, reflecting a future "either warmer, drier, or both warmer and drier."

Overall, all three statewide scenarios also show an increase in urban water demand; ranging from under 1.5 million AF for slow-growth to 10 million AF for fast, with 6 million AF for current trends. All three scenarios also show a decrease in demand for agricultural water, due mainly to the projected continued loss of farmlands to development pressures, as well as environmental conservation needs. Similarly, all three scenarios also reflect water savings due to conservation programs, though the amounts saved vary as indicated previously. Lastly, as the CWP notes, "Having response packages for multiple future scenarios can help identify management responses that perform well across the array of possible future conditions."

4. Regional Future Scenario Results

The CWP (page 5-33) notes that the three baseline scenarios for 2050 would "play out differently in various hydrologic regions." The way these water demands change reflect a number of variables, including the relative amount of water demand in the region for cities, farms and environment; how the modeled factors (population, irrigated crop acreage and environmental water use) are expected to increase or decrease for each region; and how temperature and precipitation are projected to change. (For example, less precipitation during the growing season increases that need for applied irrigation water.) See Table 4.19-I (SWP Future Conditions Water Delivery Projections) for SWP estimates for year 2031.

a. South Coast Hydrologic Region

The CWP reports that hydrologic regions expecting higher population growth under the current trends and expansive growth scenarios, such as the South Coast Hydrologic Region, show higher changes in water demands. It adds, "Population growth also tends to drive urbanization of agricultural lands, reducing irrigated crop acreage." Accordingly, as shown in Figure 4.19.12 (South Coast Region – Change in Future Water Demand by Scenario) and reported by the CWP (page SC-59), the total forecast water demand for 2050 for the South Coast Hydrologic Region (above the current baseline demand value of 4.80 million AF and without including climate impacts) increase under both the current trends and expansive growth scenarios, by 1.33 million AF and 2.86 million AF, respectively, while the slow growth scenario manages to decrease its annual water demand by 0.14 million AF. When the increase in demand and variability forecast for climate change is taken into account, the scenarios' total water demands increase to an estimated 1.30-1.60 million AF for current and 2.80-3.20 million AF for expansive growth. The decrease associated with the slow-growth scenario lessens slightly, to a total demand of between 0.15 million AF less water to an increase of up to roughly 0.07 million AF more compared to today. Consistent with statewide trends, across all three scenarios for the South Coast Hydrologic Region, urban water demand increases and agricultural water demand lessens. For environmental water demand, the CWP (page SC-60) notes that the baseline is about 0.13 million AF and that no additional environmental water demands are assumed beyond current commitments.

b. Colorado River Hydrologic Region

As shown in Figure 4.19.13 (Colorado River Region – Change in Future Water Demand by Scenario) and reported by the CWP (page CR-41), the total forecast water demand for 2050 for this region (above current baseline demand, 4.0 million AF, and without including climate impacts) increases under both the current trends and expansive growth scenarios. These increases are slightly more modest compared to South Coast values, 0.30 million AF and 0.74 million AF, respectively. The slow growth scenario decreases its annual water demand by 0.38 million AF. When the increase in demand and variability forecast for climate change is taken into account,

the scenarios' total water demands increase to 0.25-0.45 million AF for current and 0.68-0.92 million AF for expansive growth. The decrease associated with the slow-growth scenario lessens slightly, to a total demand of between 0.25-0.41 million AF less water compared to today.

The increases and decreases in water demand seen in this region are generally similar to the statewide trends noted above, as well as those of the South Coast. For environmental water demand, the CWP (page CR-42) notes that the baseline is about 0.03 million AF with no additional environmental water demands assumed beyond current commitments as the State of California was unable to estimate additional environmental objectives in this case.

Table 4.19-I: SWP Future Conditions Water Delivery Projections

Future (2031) Conditions Scenarios	SWP Water Deliveries (in thousands of acre-feet)		
	Table A Water[4]	Article 21 Water	Total Delivery
Long-Term Average[1,2]	2,466	60	2,526
Long-Term Ave., Maximum[1]	4,063	291[3]	4,354
Long-Term Ave., Minimum[1]	443	4[3]	447
Single Dry Year (1977)[1,2]	443 (11%)	4	447
4-Year Drought (1931-1934)[1,2]	1,401 (34%)	50	1,451
Single Wet Year (1983)[1,2]	4,063 (98%)	291	4,354
4-Year Wet (1980-1983)[1,2]	3,396 (82%)	120	3,516

Footnotes:
1. Table A data from Reliability Report, Tables 7-1 (ave.), 7-2 (dry) and 7-3 (wet).
2. Article 21 data from Reliability Report, Tables 7-4 (ave. and dry) and 7-5 (wet).
3. Extrapolated from below.
4. Percents of maximum SWP Table A water delivery amount (4,133 TAFY).

Source: DWR, 2011 SWP Delivery Reliability Report, 2012.

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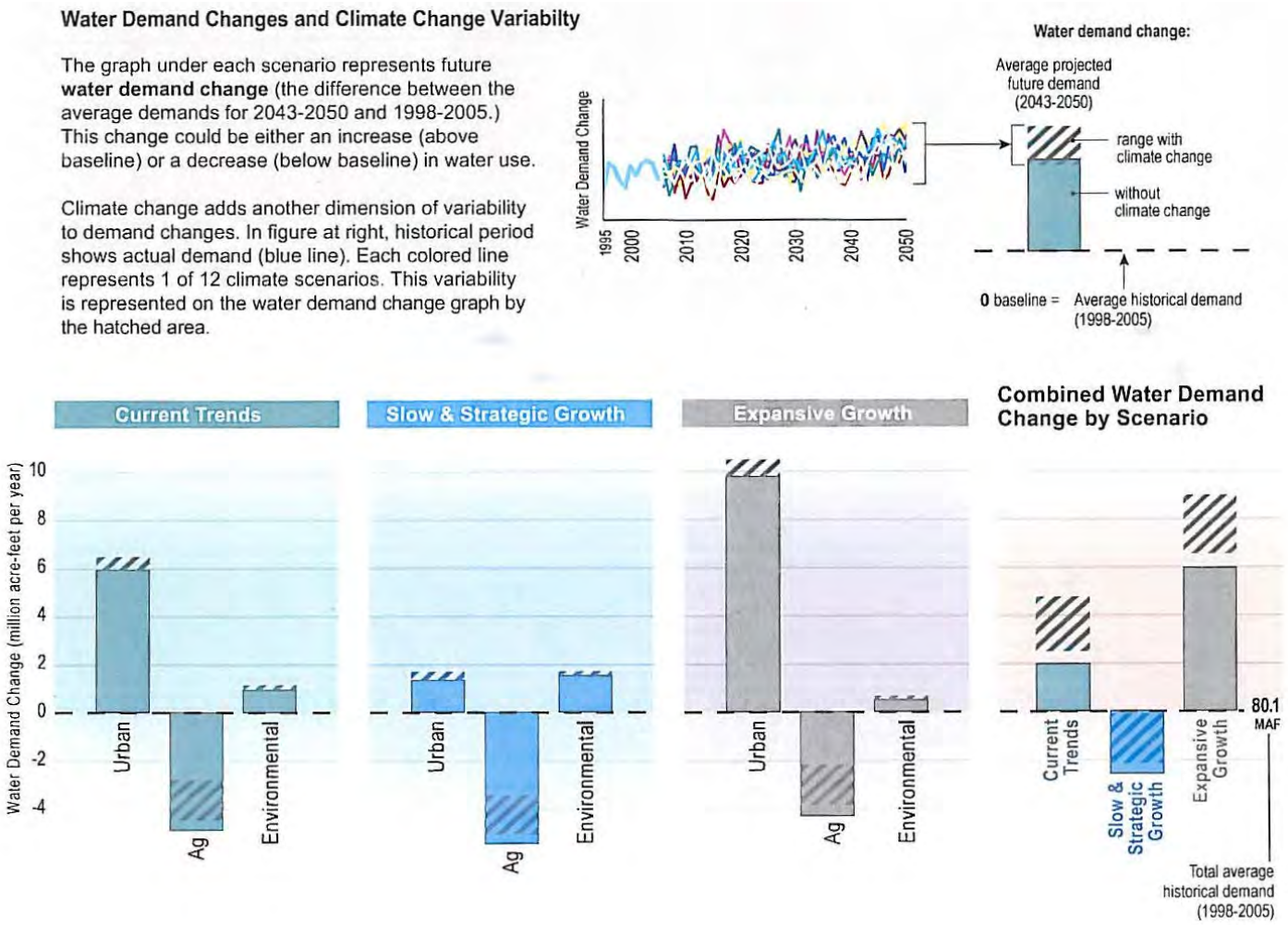

Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

December 16, 2013

Figure 4.19.11

STATEWIDE - CHANGE IN FUTURE WATER DEMAND BY SCENARIO

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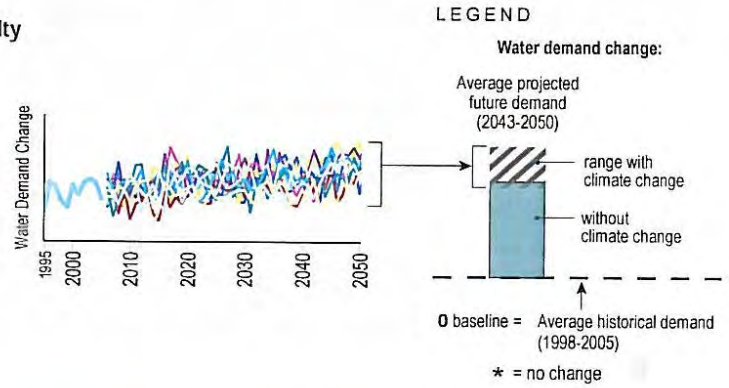
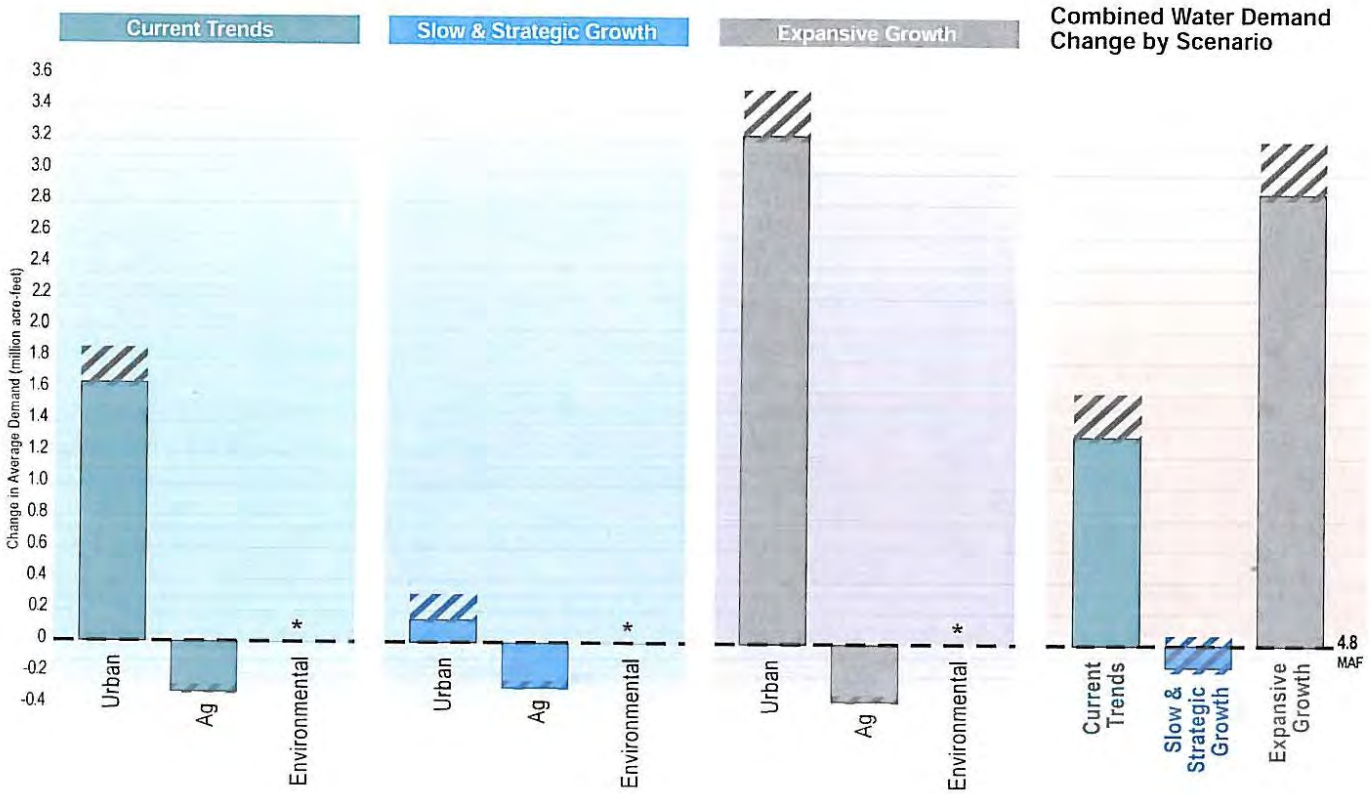
Water Demand Changes and Climate Change Variabilty

The graph under each scenario represents future **water demand change** (the difference between the average demands for 2043-2050 and 1998-2005.) This change could be either an increase (above baseline) or a decrease (below baseline) in water use.

Climate change adds another dimension of variability to demand changes. In figure at right, historical period shows actual demand (blue line). Each colored line represents 1 of 12 climate scenarios. This variability is represented on the water demand change graph by the hatched area.





Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

December 16, 2013

Figure 4.19.12

SOUTH COAST REGION - CHANGE IN FUTURE WATER DEMAND

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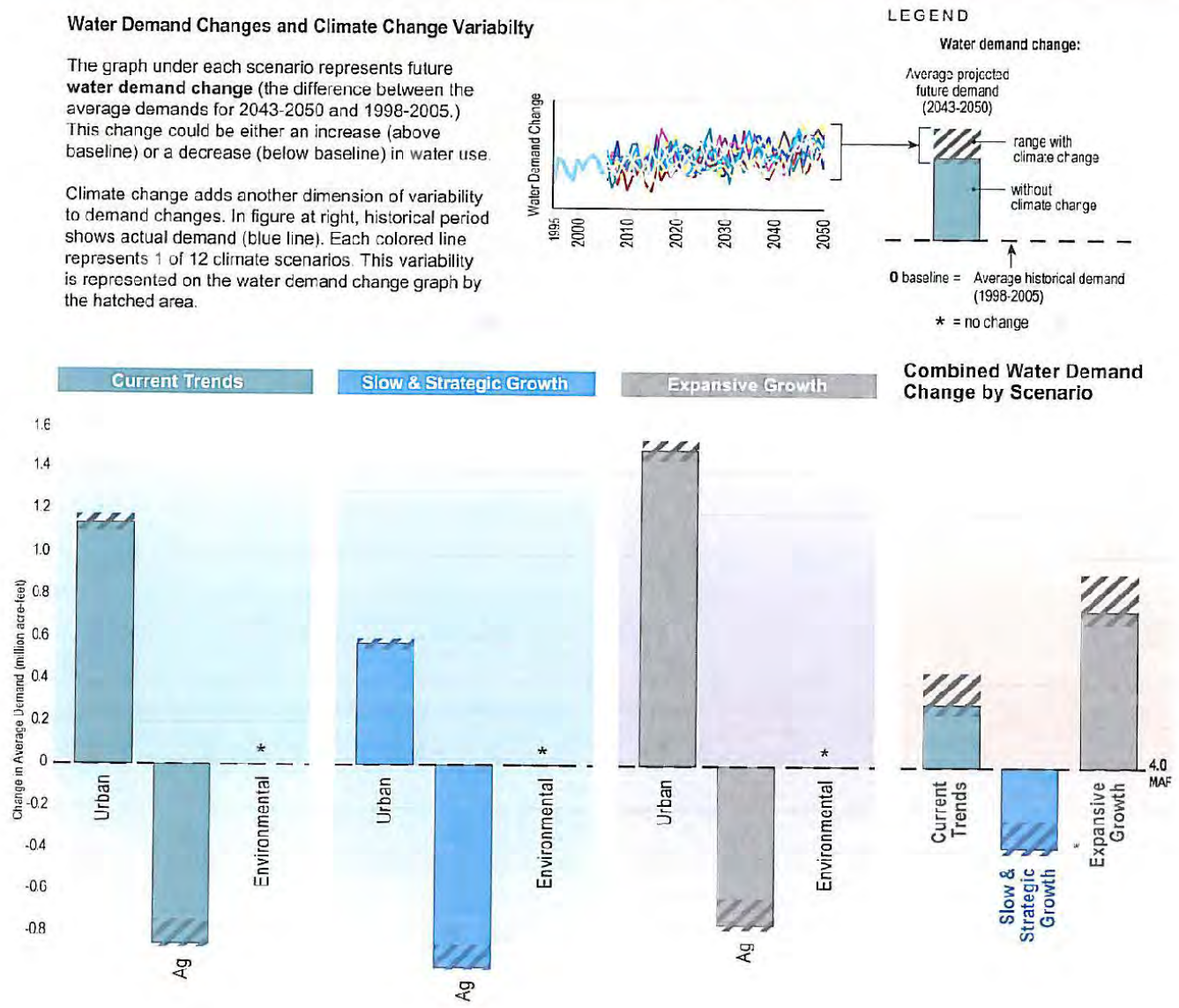

Data Source: California Department of Water Resources (DWR), California Water Plan (2009)

December 16, 2013

Figure 4.19.13

COLORADO RIVER REGION - CHANGE IN FUTURE WATER DEMAND

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5. Regional Water Balances

As a result of a number of factors, including SWP import availability (as outlined above) and a variety of external factors (as outlined below), the State of California has issued a series of water balance and water budget data for its hydrologic regions. The most recent data available for the two regions in which Riverside County is located are presented in Table 4.19-J (Regional Water Balance Data), below (2005 is the most recent year for which water balances were issued broken down by category).

Table 4.19-J: Regional Water Balance Data

Water Balance Data (in thousands of acre-feet)	2001 Water Data		2005 Water Data	
	South Coast	Colorado River	South Coast	Colorado River
Water Entering the Region				
Precipitation	9,327	4,770	15,344	9,755
Percent of Normal Precipitation[1]	92%	80%	143%	158%
Inflow from Colorado River	1,250	5,197	773	3,445
Inflow from Mexico	0	155	---	128
Inflow from Other Regions	1,255	0	2,331	0
Subtotal	***11,832***	***10,122***	***18,448***	***13,328***
Inflow Sources within the Region				
Local Deliveries	217	4	ns	ns
Local Imports	272	0	ns	ns
Federal Deliveries[2]	0	0	ns	ns
State Water Project Deliveries	959	24	ns	ns
Recycled Water – Urban	189	18	ns	ns
Recycled Water – Groundwater	36	0	ns	ns
Groundwater Extractions – Adjudicated	841	0	ns	ns
Groundwater Extractions – Unadjudicated	1,021	409	ns	ns
Reuse of Return Flows – Agriculture	0	135	ns	ns
Reuse of Return Flows – Managed Wetlands	112	0	ns	ns
Reuse of Return Flows – Urban	0	0	ns	ns
Subtotal	***3,647***	***590***	***ns***	***ns***
Water Leaving the Region				
Consumptive Use of Applied Water[3]	1,628	2,775	1,515	2,356
Exports to Other Regions	0	1,250	0	658
Statutorily-Required Outflow to Salt Sink	0	0	202	0
Additional Outflow to Salt Sink	2,325	1,228	2,128	1,112
Other Sources of Outflow[4]	8,947	5,049	14,803	9,006
Subtotal	***12,900***	***10,302***	***18,648***	***13,131***
Outflow Sources Within the Region[2]				
Groundwater Recharge – Contract Banking	0	- 9	ns	ns
Evaporation from Lakes	18	1,552	ns	ns
Evaporation from Reservoirs	161	121	ns	ns
Ag Effective Precipitation on Irrigated Lands	166	76	ns	ns
Applied Water Use – Agriculture	758	3,562	ns	ns
Applied Water Use – Managed Wetlands	37	30	ns	ns
Urban Residential Use – Single-Family Homes[5]	1,853	190	ns	ns
Urban Residential Use – Multi-Family Homes[5]	661	44	ns	ns
Urban Commercial Use	886	145	ns	ns
Urban Industrial Use	210	5	ns	ns
Urban Large Landscape Use	188	122	ns	ns
Urban Energy Production	40	77	ns	ns
Evapotranspiration of Applied Water – Agri.	543	2,548	ns	ns
Evap. of App. Water – Managed Wetlands	37	30	ns	ns
Evapotranspiration of Applied Water – Urban	1,048	196	ns	ns
Total Net Use – Agriculture	***665***	***3,723***	***ns***	***ns***

Water Balance Data (in thousands of acre-feet)	2001 Water Data		2005 Water Data	
	South Coast	Colorado River	South Coast	Colorado River
Total Net use – Urban	***3,621***	***412***	***ns***	***ns***
Total Net Use – Environmental	***37***	***30***	***ns***	***ns***
Storage Changes in the Region[6]				
Change in Surface Reservoir Storage	+ 332	+ 1	+ 509	- 35
Change in Groundwater Storage[7]	- 1,400	- 181	- 709	+ 232
Subtotal	***- 1,068***	***- 180***	***- 200***	***+ 197***
Applied Water Total[4]	**4,633**	**4,714**	**4,564**	**3,681**

ns = not supplied in 2011 report.

Footnotes:

1. The precipitation percentages are based on a running 30-year average for the region and can vary from those published for other, earlier documents or data.
2. Total federal deliveries. However, federal Central Valley Project (CVP) deliveries were zero for both regions.
3. Consumptive use is the amount of applied water used and no longer available as a source of supply. Applied water is greater than consumptive use because it includes consumptive use, reuse and outflows.
4. Includes evaporation, evapotranspiration from native vegetation, groundwater subsurface outflows, natural and incidental runoff, agricultural effective precipitation and other outflows.
5. Total is sum of interior and exterior water uses.
6. Positive numbers equal water added to storage; negative numbers equal water removed from storage.
7. Change in groundwater storage values were based upon best available information. Both regions were calculated using the equation: GW change in storage = intentional recharge + deep percolation of applied water + conveyance deep percolation and seepage - withdrawals. This equation does not include unknown factors, such as natural recharge and subsurface inflow/outflow.

Source: DWR, California Water Plan, 2009 Update, Table SC-3 (page SC-27) and Table CR-7 (page CR-24), 2012.

D. Factors Affecting Water Delivery Reliability

As noted in prior sections, a variety of factors affect water delivery reliability, for both local and imported water sources. Chapter 4 of the DWR's 2011 Final Delivery Reliability Report examines this very issue, as it relates to SWP water and its delivery. Since the chapter provides a concise and comprehensive summary of the issues, it is in essence reproduced here to explain the issues facing county water supplies. For the sake of clarity, edits and information related directly to Riverside County and this EIR are shown in brackets to differentiate them from the State of California's text. In some cases, headers are revised to suit this EIR section. Also, some text and figures not directly germane to Riverside County issues are omitted.

[Start of excerpt from SWP Final Delivery Reliability Report 2011]

This [portion of the 2011 Final Delivery Reliability Report] explains the concept of SWP water delivery reliability and how it is calculated by DWR [and] describe[s] the most important factors that combine to affect SWP water delivery reliability. Among these natural and human-created factors are the availability of source water, regulatory restrictions on SWP operations and the effects of climate change. Uncertainty also exists because of the potential for an emergency such as an earthquake striking in or near the Delta, which, if substantial enough, could interrupt SWP exports from the Delta. This [subsection] describes various statewide efforts by DWR and other agencies to reduce risks to the Delta and enhance emergency response capabilities.

1. About Water Delivery Reliability

Water delivery reliability is the annual amount of SWP water that can be expected to be delivered to SWP contractors with a certain frequency. But what does that actually mean in practice? In essence, it is a matter of probability – specifically, the likelihood that a contractor will receive a certain amount of water from the SWP in a particular year. From the contractor's perspective, water delivery reliability indicates an acceptable or desirable level of dependability of water deliveries to the people receiving the water.

Usually, a local water agency, in coordination with the public it serves, determines the level of water delivery reliability that it considers acceptable. The water agency then plans for new facilities, programs or additional sources of water to meet or maintain this level of reliability.

2. Calculating SWP Water Delivery Reliability

DWR calculates the water delivery reliability of the SWP using the CalSim-II computer model, which simulates existing and future operations of the SWP. No model or tool can predict what actual, natural water supplies will be for any year or years, but a system of probability can be used to calculate water delivery reliability. The analyses of SWP delivery reliability contained in Chapters 6 and 7 of [the 2011 Final Delivery Reliability Report; both of which are provided in Appendix EIR-8] are based on modeling conducted using 82 years of historical data (water years 1922–2003) for rainfall and runoff. Those data were adjusted to reflect current and future levels of development in the source areas. The resulting data were then used to forecast the amount of water available to the SWP under current and future conditions (with the effects of climate change factored into the modeling for future conditions). The annual amounts of estimated SWP water deliveries are ranked from smallest to largest and the probability that various quantities of SWP Table A water will be delivered to each SWP contractor is estimated.

3. Factors Influencing SWP Water Delivery Reliability

Forecasting water delivery reliability is a difficult task because California is such a large state with numerous microclimates. In a typical year, some areas receive as little as 2 inches of rain, while others receive more than 100 inches. In addition, the determinants of water delivery for a specific water supply system continually change over time and can be difficult to determine and/or model. For example, water use in Sacramento River watersheds has increased over time. The historical data upon which a water supply forecast is based must be adjusted to reflect the current and, if necessary, future use in these watersheds. The following factors affect the ability to estimate existing and especially future water delivery reliability:

- Water availability at the source.
- Water rights with priority over the SWP.
- Regulatory restrictions on SWP Delta exports (imposed by federal biological opinions [BOs] and State water quality plans).
- Climate change.
- Ongoing environmental and policy planning efforts.
- Delta levee failure.

4. Water Availability at the Source

This factor affects the SWP's water delivery reliability because it is inherently variable; availability of water at the source depends on the amount and timing of rain and snow that fall in any given year, the amount and timing of runoff, and the level of development (that is, the use of water) in the SWP's source areas. The location, amount

and form of precipitation in California in any given year cannot be accurately predicted, introducing the greatest variability in the availability of future SWP source water and hence future SWP deliveries.

Generally, during a single dry year or two, surface water and groundwater storage can supply most water deliveries, but dry years can result in critically low water reserves. Greater reliance on groundwater during dry years results in high costs for many users and increases groundwater overdraft. Further, the ability of some contractors to use local groundwater may be limited; some groundwater basins may be contaminated by toxins such as methyl tertiary butyl ether (commonly known as MBTE), an ingredient in gasoline, and other aquifers may be too deep to reach economically. This makes the availability of the SWP's surface water to contractors especially important.

DWR manually measures snowpack in the northern Sierra Nevada monthly between early January and early May to forecast snowmelt runoff. These surveys and real-time electronic measurements taken throughout the winter measure the snowpack's water content. The size of the snowpack in the Feather River watershed on April 1 – when snowpack water content normally is at its peak before the spring runoff – and the storage in Lake Oroville are key components of the SWP's delivery capabilities from April through September.

5. Water Rights with Priority Over the SWP

California's water rights system affects the SWP indirectly. There are two types of legally protected rights to surface water in California:

Appropriative water rights allow the user to divert surface water for beneficial use. The user must first have obtained a permit from the State Water Resources Control Board (State Water Board), unless the appropriative water right predates 1914. Appropriative water rights may be lost if the water has gone unused for 5 years. The SWP diverts water from the Delta under appropriative water rights.

Riparian water rights apply to lands traversed by or bordering on a natural watercourse. No permit is required to use this water, which must be used on riparian (adjacent) land and cannot be stored for later use.

Generally, the priority of an appropriative water right in California is "first in time, first in right;" therefore, an appropriative water right is subordinate to all prior water rights, whether appropriative or riparian. This means that if another entity with a prior water right increases its use of one of the SWP's sources of water supply – the Delta, the upstream Sacramento or San Joaquin rivers, or a tributary to either river – the overall amount of water available to the SWP will decrease. Thus, water users with prior water rights are assigned top priority for water in DWR's modeling of the SWP's water delivery reliability, even ahead of SWP Table A water deliveries.

6. Regulatory Restrictions on SWP Delta Exports

Multiple needs converge in the Delta: the need to protect a fragile ecosystem, to support Delta recreation and farming, and to provide water for agricultural and urban needs throughout much of California. Various regulatory requirements are placed on the SWP's Delta operations to protect special-status species, such as delta smelt and spring- and winter-run Chinook salmon. As a result, as described below, restrictions on SWP operations imposed by State and federal agencies contribute substantially to the challenge of accurately determining the SWP's water delivery reliability in any given year.

a. Biological Opinions on Effects of SWP Operations

Several fish species listed under the federal Endangered Species Act (ESA) as endangered or threatened are found in the Delta. The continued viability of populations of these species in the Delta depends in part on Delta flow levels. For this reason, the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have issued several BOs since the 1990s on the effects of coordinated SWP/CVP operations on several species. [See Appendix EIR-8 for additional details on these legal matters.]

These BOs affect the SWP's water delivery reliability for two reasons. Most obviously, they include terms that specifically restrict SWP pumping levels in the Delta at certain times under certain conditions. In addition, the BOs' requirements are based on physical and biological phenomena that occur daily while DWR's water supply models are based on monthly data.

The first BOs on the effects of SWP (and CVP) operations [*note:* the Central Valley Project, CVP, is a separate federal water system that also used Delta water] were issued in February 1993 (NMFS BO on effects of project operations on winter-run Chinook salmon) and March 1995 (USFWS BO on project effects on delta smelt and splittail). Among other things, the BOs contained requirements for Delta inflow, Delta outflow and reduced export pumping to meet specified incidental take limits. These fish protection requirements imposed substantial constraints on Delta water supply operations. Many were incorporated into the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta (1995 WQCP), as described under "Water Quality Objectives."

The terms of the USFWS and NMFS BOs have become increasingly restrictive in recent years. In December 2008, USFWS issued a new BO covering effects of the SWP and CVP on delta smelt, and in June 2009, NMFS issued a BO covering effects on winter-run and spring-run Chinook salmon, steelhead, green sturgeon and killer whales. These BOs replaced BOs issued earlier by the federal agencies.

The USFWS BO includes additional requirements in all but two months of the year. The BO calls for 'adaptively managed' (adjusted as necessary based on the results of monitoring) flow restrictions in the Delta intended to protect delta smelt at various life stages. USFWS determines the required target flow, with the reductions accomplished primarily by reducing SWP and CVP exports. Because this flow restriction is determined based on fish location and decisions by USFWS staff, predicting the flow restriction and corresponding effects on export pumping with any great certainty poses a challenge. The USFWS BO also includes an additional salinity requirement in the Delta for September and October in wet and above-normal water years, calling for increased releases from SWP and CVP reservoirs to reduce salinity. Among other provisions included in the NMFS BO, limits on total Delta exports have been established for the months of April and May. These limits are mandated for all but extremely wet years.

The 2008 and 2009 BOs were issued shortly before and shortly after the Governor proclaimed a statewide water shortage state of emergency in February 2009, amid the threat of a third consecutive dry year. NMFS calculated that implementing its BO would reduce SWP and CVP Delta exports by a combined 5% to 7%, but DWR's initial estimates showed an impact on exports closer to 10% in average years, combined with the effects of pumping restrictions imposed by BOs to protect delta smelt and other species.

The 2008 USFWS and 2009 NMFS BOs have been subject to considerable litigation. Recent decisions by U.S. District Judge Oliver Wanger changed specific operational rules for the fall/ winter of 2011–2012, and both the USFWS BO and NMFS BO have been remanded to the agencies for further review and analysis. However, the operational rules specified in the 2008 and 2009 BOs continue to be legally required and are the rules used in the analyses presented in [Chapters 5, 6 and 7 of the 2011 Final Delivery Reliability Report]. Chapter 5 [of the

Report] presents a comparison of monthly Delta exports as estimated for this 2011 Report with those estimated for the 2005 Report, illustrating how the 2008 and 2009 BOs have affected export levels from the Delta. [Note: Chapters 6 and 7 of the Report present existing (2011) and future (2031) SWP water delivery reliability information, respectively. Copies of chapters 5, 6 and 7 all are provided in Appendix EIR-8.]

The California Department of Fish and Wildlife (DFW) issued consistency determinations for both BOs under Section 2080.1 of the California Fish and Game Code. The consistency determinations stated that the USFWS BO and the NMFS BO would be consistent with the California Endangered Species Act (CESA). Thus, DFW allowed incidental take of species listed under both the federal ESA and CESA to occur during SWP and CVP operations without requiring DWR or the U.S. Bureau of Reclamation to obtain a separate State-issued permit.

Specific restrictions on Delta exports associated with the USFWS and NMFS BOs and their effects on SWP pumping levels are described further in Chapter 5 ('SWP Exports') of [the 2011 Final Delivery Reliability Report; as included in Appendix EIR-8.]

b. Water Quality Objectives

Because the Delta is an estuary, salinity is a particular concern. In the 1995 WQCP, the State Water Board set water quality objectives to protect beneficial uses of water in the Delta and Suisun Bay. The objectives must be met by the SWP (and federal CVP), as specified in the water right permits issued to DWR and the U.S. Bureau of Reclamation. Those objectives – minimum Delta outflows, limits on SWP and CVP Delta exports, and maximum allowable salinity levels – are enforced through the provisions of the State Water Board's Water Right Decision 1641 (D-1641), issued in December 1999 and updated in March 2000. DWR and Reclamation must monitor the effects of diversions and SWP and CVP operations to ensure compliance with existing water quality standards.

Among the objectives established in the 1995 WQCP and D-1641 are the 'X2' objectives. D-1641 mandates the X2 objectives so that the State Water Board can regulate the locations of the Delta estuary's salinity gradient during the months of February-June. X2 is the position in the Delta where the electrical conductivity (EC) level, or salinity, of Delta water is 2 parts per thousand. The location of X2 is used as a surrogate measure of Delta ecosystem health. For the X2 objective to be achieved, the X2 position must remain downstream of Collinsville in the Delta for the entire 5-month period, and downstream of other specific locations in the Delta on a certain number of days each month from February through June. This means that Delta outflow must be at certain specified levels at certain times – which can limit the amount of water the SWP may pump at those times at its Harvey O. Banks Pumping Plant in the Delta. Because of the relationship between seawater intrusion and interior-Delta water quality, meeting the X2 objective also improves water quality at Delta drinking-water intakes; however, meeting the X2 objectives can require a relatively large volume of water for outflow during dry months that follow months with large storms.

The 1995 WQCP and D-1641 also established an export/inflow (E/I) ratio. The E/I ratio, presented in Table 3 of the 1995 WQCP (SWRCB 1995:18–22), is designed to provide protection for the fish and wildlife beneficial uses in the Bay-Delta estuary (SWRCB 1995:15). The E/I ratio limits the fraction of Delta inflows that are exported. When other restrictions are not controlling, Delta exports are limited to 35% of total Delta inflow from February through June and 65% of inflow from July through January.

7. Climate Change

The California Water Plan Update 2009 identified climate change as a key consideration in planning for the state's water management. California's reservoirs and water delivery systems were developed based on historical

hydrology; future weather patterns have long been assumed to be similar to those in the past. However, as climate change continues to affect California, past hydrology is no longer a reliable guide to future conditions. This [sub]section discusses effects on the SWP that could result from specific aspects of climate change. [See also Appendix EIR-8.]

a. Decreased Water Availability with Reduced Snowpack

As the effects of climate change continue, mean temperatures are predicted to increase, both globally and regionally. Climate projections used to assess the reliability of California's future water supply forecast average air temperature increases for the Sacramento region of 1.3 to 4.0 degrees Fahrenheit by the middle of the 21st century and 2.7 to 8.1 degrees by the end of the century (California Climate Change Center 2009a:8). Climate change is anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing total snowpack. Loss of snowpack is projected to be greater in the northern Sierra Nevada – and thus closer to the Feather River watershed, the origin of SWP water – than in the southern Sierra Nevada because of the relative proportions of land at low and middle elevations.

Snowmelt provides an average of 15 million AF of water for California per year, slowly released from about April to July each year (DWR 2006:2-22). Much of the state's water infrastructure, including the SWP, was designed to capture slow spring runoff and deliver it during the drier summer and fall months. However, during the 20th century, the average early-spring snowpack in the Sierra Nevada decreased by about 10%, resulting in the loss of 1.5 million AF of snowpack storage (DWR 2008:3). Using historical data and modeling, DWR projects that by 2050 the Sierra snowpack will be reduced from its historical average by 25% to 40% (DWR 2008:4). Increased precipitation falling as rain instead of snow during winter could result in a larger number of 'rain-on-snow' events. This would cause the snow to melt earlier in the year and over fewer days than historically, thus adversely affecting availability of water for pumping by the SWP during summer.

Such reductions in snowpack could have dire consequences. Under climate change and in some years, water levels in Lake Oroville, the SWP's main supply reservoir, could fall below the lowest release outlets, making the system vulnerable to operational interruption. DWR expects that a water shortage worse than the one during the 1977 drought could occur in 1 out of every 6-8 years by the middle of the 21st century and in one out of every three to four years at the end of the century (California Climate Change Center 2009a:46). In those years, it is estimated that an additional 575,000–850,000 AF per year of water would be needed to meet current regulatory requirements and to maintain minimum system operations. This could preclude the SWP from pumping as much water as it would otherwise.

Climate change is also expected to reduce the SWP's median reservoir carryover storage. Carryover water is like a water savings account for water managers to use during shortage periods. Thus, a climate change–generated reduction in the amount of carryover water available to SWP contractors would reduce the system's flexibility during dry and critical water years.

b. Increased SWP Water Demands

Even as water shortages may result from reduced snowpack, climate change may also cause water demand by SWP contractors to increase. Warmer temperatures may increase rates of evapotranspiration (loss of water from soil by evaporation and plant transpiration) and may extend growing seasons. A larger amount of water may be needed for irrigation of certain crops, urban landscaping, and environmental needs. Warmer temperatures will also increase evaporation from surface reservoirs. Reduced soil moisture and surface flow will disproportionately

affect the environment and other water users that rely heavily on annual rainfall such as rain-fed [i.e., non-irrigated] agriculture, livestock grazing on non-irrigated rangeland, and recreation.

c. Sea Level Rise

During the last century, sea level rose 7 inches along California's coast. Estimates of future sea level rise range from 4 to 16 inches by the middle of the 21st century and 7-55 inches by 2100 (DWR 2009b:4-37). The increases in sea level that are expected to continue could affect SWP water delivery reliability in several ways:

- Most of the land in the Delta is below sea level – by as much as 20 feet – as a consequence of ongoing subsidence. Increases in sea level could place more pressure on the Delta's already fragile levee system and, as a consequence, cause levee breaches that could threaten SWP Delta exports.

- As salty water from the Pacific Ocean moves farther upstream into the Delta, DWR could be required to increase the amounts of freshwater released from Lake Oroville to maintain compliance with Delta water quality standards.

- Sea level rise is expected to cause salt water to flow farther inland. The resulting increase in saltwater intrusion into coastal aquifers would make increasing amounts of groundwater unsuitable for water supply or irrigation (California Climate Change Center 2009b:80–81). The reduced availability of groundwater would likely contribute to further increases in demands for surface water from the SWP, especially by the coastal SWP contractors.

d. Adapting to Climate Change Effects in Forecasting Water Delivery Reliability

Chapter 7, "Future SWP Water Delivery Reliability (2031)," [of the 2011 Final Delivery Reliability Report] estimates the SWP's delivery reliability for conditions 20 years in the future (2031), reflecting potential hydrologic changes that could result from climate change. Further details on these future projections are included in a technical addendum to this report (posted on the Internet and available upon request). [See Appendix EIR-8.]

For purposes of this report and the technical addendum, the 2031 delivery estimates are based on a single median-impact future climate projection. To identify this projection, DWR analyzed the twelve climate projections for midcentury that were used in "Using Future Climate Projections to Support Water Resources Decision Making in California" (California Climate Change Center 2009a). The resulting water supply effects were examined to determine which one most closely represented the central or 'median' projection. The analysis examined the following projected climate and hydrology variables and their effects on SWP exports: temperature, precipitation, total inflow to major reservoirs, shifts in timing of runoff and Delta exports.

8. Ongoing Environmental and Policy Planning Efforts

As discussed earlier, the Delta is an essential part of the conveyance system for the SWP. SWP pumping at the Banks Pumping Plant is regulated to protect the many uses of the Delta. However, today's uses in the Delta are not sustainable over the long term under current management practices and regulatory requirements. As discussed below, two large-scale plans for the Delta that are in development could affect SWP water delivery reliability: the Delta Plan and the Bay Delta Conservation Plan (BDCP).

a. Delta Plan

After years of concern about the Delta amid rising water demand and habitat degradation, the Delta Stewardship Council was created in legislation to achieve State-mandated coequal goals for the Delta. As specified in Section 85054 of the California Water Code:

> *'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.*

The draft Delta Plan seeks to reduce reliance on Delta water supplies. In a series of policies and recommendations, the draft plan aims to encourage farms and cities to increase conservation and become more self-sufficient, particularly in the event of a disaster in the Delta. It calls for agricultural water agencies to change pricing to encourage conservation. It also urges the State Water Board to set enforceable flow objectives for the Delta and its tributaries that take into account wildlife and habitat needs. In the future, government projects in the Delta must prove they are consistent with the Delta Plan.

The Delta Stewardship Council is preparing the draft Delta Plan and environmental impact report. Scheduled for adoption and implementation in 2012, the Delta Plan is intended to serve as California's guiding policy document for the Delta and Suisun Marsh for the next 88 years (that is, through the year 2099), with frequent updates.

b. Bay Delta Conservation Plan

The BDCP is being prepared by a group of local water agencies, environmental and conservation organizations, state and federal agencies, and other interest groups. An outgrowth of the CALFED Bay-Delta Plan's Ecosystem Restoration Program Conservation Strategy, the BDCP has been in development since 2006. The heart of the BDCP is a long-term conservation strategy that sets forth actions needed for a healthy Delta. The BDCP would do all of the following:

- Identify conservation strategies to improve the overall ecological health of the Delta;
- Identify ecologically friendly ways to move freshwater through and/or around the Delta;
- Address toxic pollutants, invasive species, and impairments to water quality; and
- Establish a framework and funding to implement the plan over time.

A draft environmental impact report is planned to be released for public review in mid-2012. The report is targeted to be final in 2013, after which a decision to proceed with the program would be made. Upon adoption, the BDCP would provide the basis for issuance of endangered species permits for the continued operation of the SWP and CVP. The plan would be implemented over a 50-year period.

9. Delta Levee Failure

The fragile Delta faces a multitude of risks that could affect millions of Californians. Foremost among those risks, as they could affect the SWP's water delivery reliability, are the potential for levee failure and the ensuing flooding and water quality issues.

The Delta Risk Management Strategy (DRMS) was initiated in response to Assembly Bill 1200 (2005), which directed DWR to use 50-, 100- and 200-year projections to evaluate the potential impacts on Delta water supplies associated with continued land subsidence, earthquakes, floods, and climate change. In DRMS Phase 1, risks are as assessed and DRMS Phase 2 evaluates various solutions. Also discussed are other efforts currently being undertaken by DWR and other agencies to reduce risks to the Delta, enhance emergency response capabilities and reduce the risk of interruption of Delta water exports by the SWP and CVP.

a. Effects of Emergencies on Water Supplies

Phase 1 of the DRMS, completed in 2008, assessed the performance of Delta and Suisun Marsh levees under various stressors and hazards and evaluated the consequences of levee failures to California as a whole. The Delta is protected by levees built about 150 years ago. The levees are vulnerable to failure because most original levees were simply built with soils dredged from nearby channels, and were never engineered. Most islands in the Delta have flooded at least once over the past 100 years. For example, on June 3, 2004, a huge dry-weather levee failure occurred without warning on Upper Jones Tract in the south Delta, inundating 12,000 acres of farmland with about 160,000 AF of water. Because many Delta islands are below sea level, deep and prolonged flooding could occur during a levee failure event, which could disrupt the quality and use of Delta water.

Levee failure can result from the combination of high river inflows, high tide, and high winds; however, levees can also fail in fair weather – even in the absence of a flood or seismic event – in a so-called 'sunny day event.' Damage caused by rodents, piping (in which a pipe-like opening develops below the base of the levee) or foundation movement could cause sunny-day levee breaches.

A breach of one or more levees and island flooding may affect Delta water quality and SWP operations. Depending on the hydrology and the size and locations of the breaches and flooded islands, a large amount of salt water may be pulled into the interior Delta from Suisun and San Pablo Bays. When islands are flooded, DWR may need to drastically decrease or even cease SWP Delta exports to evaluate the distribution of salinity in the Delta and avoid drawing saltier water toward the pumps.

An earthquake could also put Delta levees, and thus SWP water supplies, at risk. In 2008, the 2007 Working Group on California Earthquake Probabilities estimated a probability of 63% that a magnitude 6.7 or greater earthquake would strike the San Francisco Bay Area in the next 30 years (Working Group 2008:6). An earthquake could severely damage Delta levees, causing islands to flood with salty water. The locations most likely to be affected by an earthquake are the west and southwest portions of the Delta because these areas are closer to potential earthquake sources. Flooding of the west and southwest Delta is also more likely to interfere with conveyance of freshwater to export pumps (DWR 2007, page 17).

Modeling of the effects of earthquakes on Delta islands was conducted by DWR for the DRMS Phase 1 report. Described in the California Water Plan Update 2009, the assessment found a 40% probability that a major earthquake occurring between 2030 and 2050 would cause 27 or more islands to flood at the same time. If 20 islands were flooded as a result of a major earthquake, the export of freshwater from the Delta could be interrupted by about a year and a half (DWR 2009b:5-15). Water supply losses of up to 8 million AF would be incurred by SWP (and CVP) contractors and local water districts.

b. Managing and Reducing Risks

The Phase 2 report for the DRMS, issued in June 2011, evaluates alternatives to reduce the risk to the Delta and the state from adverse consequences of levee failure (DWR 2011b). 'Building blocks' (individual improvements

or projects, such as improving levees or raising highways) and trial scenarios (various combinations of building blocks) were developed for the DRMS Phase 2 report. The building blocks fall into three main categories: conveyance improvements/flood risk reduction and life safety; infrastructure risk reduction; and, environmental risk mitigation.

The first of these categories is most relevant to the SWP in terms of reducing the risk of disruption of SWP Delta exports, but the environmental risk mitigation category includes a building block (Building Block 3.6) calling for reduction of water exports from the Delta.

Four trial scenarios were developed to represent a range of possible risk reduction strategies [and state and various concerned agencies, including MWD, continue to study these levee issues.]

c. Delta Flood Emergency Preparedness and Multi-Hazard Coordination

In the last 5 years, DWR has worked to improve its ability to respond quickly and effectively to simultaneous levee failures on multiple islands within the Delta. The Delta Emergency Operations Plan Concept Paper released in April 2007 (DWR 2007) was the initial product of this effort. To enhance the state's ability to prepare for, respond to, and recover from a catastrophic Delta levee failure, DWR subsequently began development of the Delta Flood Emergency Preparedness, Response, and Recovery Program. This program is intended to supplement DWR's emergency operations plan. The goal is to protect lives, property, and critical infrastructure in the Delta while minimizing impacts on the ecosystem. The program consists of three components: develop DWR's Delta response and recovery plan; coordinate DWR's plan with other Delta flood emergency response agencies; and, design and implement flood emergency response facilities within the Delta.

The flood emergency response plan for the Delta will describe the actions DWR will take before, during, and after a levee-endangering event or levee failure in the Delta. The Delta Flood Emergency Preparedness, Response, and Recovery Program is conducting an extensive effort to model water quality implications of levee failure and salinity changes associated with different levee repair strategies. DWR is coordinating this effort with the U.S. Army Corps of Engineers and expects to reach out to the five Delta counties during plan development.

DWR is also a member of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force, which was created in 2008 in the wake of passage of the Sacramento-San Joaquin Delta Emergency Preparedness Act of 2008 [and is] led by the California Emergency Management Agency (CalEMA). [This] task force was created to make recommendations to CalEMA on creating a framework for an interagency unified command system, coordinate the development of a draft emergency preparedness and response strategy for the Delta region, and develop and conduct an all-hazards emergency response exercise in the Delta.

[End of excerpt from SWP Final Delivery Reliability Report 2011]

E. Factors Affecting Colorado River Water Supplies

1. Colorado River Supplies and the Quantification Settlement Agreement

The 2003 Quantification Settlement Agreement (QSA) executed by IID, CVWD and MWD is a critical component of the California Plan. It establishes the baseline Colorado River water use for each of the agencies and facilitates the transfer of water from agricultural agencies to urban uses. It also specifies that IID, CVWD and MWD would forebear use of water to permit the U.S. Secretary of the Interior to satisfy the uses of the water rights holders that had been newly identified in the 1980s. On November 5, 2003, IID filed a validation action in

Imperial County Superior Court, seeking a judicial determination that thirteen agreements associated with the IID - San Diego County Water Agency (SDCWA) water transfer and the QSA are valid, legal and binding. Other lawsuits also were filed challenging the execution, approval and subsequent implementation of the QSA on various grounds. All of the QSA cases were coordinated in Sacramento County Superior Court.

After a number of pleading challenges, appeal of rulings dismissing one Imperial County case and dismissing portions of another, and pretrial rulings, the first phase of the trial ran from November 9 to December 2, 2009. One of the key issues of contention was the constitutionality of the QSA Joint Powers Authority Agreement, pursuant to which IID, CVWD and SDCWA agreed to commit $133 million toward certain mitigation costs associated with implementation of the transfer of 300,000 AF of water conserved by IID pursuant to the QSA and the State of California agreed to be responsible for any mitigation costs exceeding this amount.

A final judgment was issued on February 11, 2010, holding that the State of California's commitment was unconditional in nature and, as such, violated the State of California's debt limitation under the California Constitution and that 11 other agreements, including the QSA, are also invalid because they are inextricably interrelated with the QSA Joint Powers Authority Agreement and the funding mechanism it established to cover such mitigation costs. The court also ruled that all other claims raised by the parties, including CEQA claims related to the QSA Programmatic EIR and the IID Transfer Project EIR, were moot. The court's decision was appealed and the ruling was stayed pending the outcome of the appeal. If the ruling stands, it could delay the implementation of programs authorized under the QSA or result in increased costs or other adverse impacts. The impact, if any, that the ruling might have on the availability of Colorado River supplies for urban water users simply cannot be known at this time, but may echo the days of uncertainty and litigation that previously had led to the creation of the QSA and related agreements (MWD RUWMP 2010).

In March 2010, MWD, IID, CVWD, SDCWA, the State of California and others filed notices of appeal challenging various aspects of the trial court's ruling. On December 7, 2011, the court of appeal issued its ruling reversing, in part, the trial court's ruling. In particular, the court of appeal held that while the State of California's commitment to fund mitigation costs in excess of $163 million was unconditional, actual payment of such costs was subject to a valid appropriation by the legislature, as required under the California Constitution. Moreover, the State of California's commitment did not create a present debt in excess of the State of California Constitution's $300,000 debt limit. Thus, the QSA Joint Powers Agreement was held to be constitutional. The court of appeal also rejected other challenges to the agreement. Lastly, in light of its ruling, the court of appeal remanded the matter back to the trial court for further proceedings on the claims that had been dismissed as moot. The impact, if any, which this litigation might have had on MWD's water supplies cannot be adequately determined at this time, according to MWD (Official Statement, page A-18, 2012).

2. Colorado River Water Rights and Conservation Programs

In addition to MWD's 2010 Regional Urban Water Management Plan (RUWMP), a great deal of further information and analyses regarding Colorado River water supplies are set forth in MWD's Appendix A to its "Official Statement," dated September 12, 2012, describing MWD's Water Revenue Refunding Bonds (2012 Series F). According to MWD, the Colorado River was MWD's original source of water after MWD's establishment in 1928. MWD has a legal entitlement to receive water from the Colorado River under a permanent service contract with the U.S. Secretary of the Interior. Water from the Colorado River or its tributaries is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming, collectively with California, the 'Colorado River Basin States,' resulting in both competition and the need for cooperation among these holders of Colorado River entitlements.

In addition, under a 1944 treaty, Mexico has an allotment of 1.5 million AF of Colorado River water annually except in the event of extraordinary drought, or serious accident to the delivery system in the United States, when the water allotted to Mexico would be curtailed. Mexico also can schedule delivery of an additional 200,000 AF of Colorado River water per year if water is available in excess of the requirements in the United States and the 1.5 million AF allotted to Mexico. The Colorado River Aqueduct, which is owned and operated by MWD, transports water from the Colorado River approximately 242 miles to its terminus at Lake Mathews in Riverside County. After deducting for conveyance losses and maintenance requirements, up to 1.2 million AF of water a year may be conveyed through the Colorado River Aqueduct to MWD's member agencies, subject to availability of Colorado River water for delivery to MWD as described below.

The long-term availability and reliability of Colorado River supplies delivered to California to help meet the state's agricultural, farming and development needs was extensively addressed as part of MWD's regional water supply analyses. As described above, California is apportioned the use of 4.4 million AF of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona and Nevada when such supplies have been requested for use in California. Under the 1931 priority system that has formed the basis for the distribution of Colorado River water made available to California, MWD holds the fourth priority right to 550,000 AF per year. This is the last priority within California's basic apportionment of 4.4 million AF. In addition, MWD holds the fifth priority right to 662,000 AF of water, which is in excess of California's basic apportionment.

Until 2003, MWD had been able to take full advantage of its fifth priority right as a result of the availability of surplus water and apportioned but unused water. However, Arizona and Nevada increased their use of water from the Colorado River, leaving no unused apportionment available for California since the late 1990s. In addition, a severe drought in the Colorado River basin has reduced storage in system reservoirs, resulting in no surplus water being available since 2003. Prior to 2003, MWD could divert over 1.2 million AF in any year, but since that time, MWD's deliveries of Colorado River water have varied from a low of 633,000 AF in 2006 to a high of 1.105 million AF in 2009. In 2007, MWD received approximately 713,500 AF of Colorado River water. Average annual net deliveries for 2003 through 2011 were approximately 830,300 AF, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. MWD's Colorado River supply was about 855,000 AF in 2011, of which approximately 699,000 AF was delivered through the Colorado River Aqueduct and about 186,000 AF of intentionally created surplus water was stored in Lake Mead.

MWD has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water. Under a 1988 water conservation agreement between MWD and IID, IID constructed and operates a number of conservation projects that are currently conserving 105,000 AF of water per year. In 2007, the conserved water augmented the amount of water available to MWD by 85,000 AF and by prior agreement to the Coachella Valley Water District (CVWD) by 20,000 AF.

In 1992, MWD entered into an agreement with the Central Arizona Water Conservation District (CAWCD) to demonstrate the feasibility of CAWCD storing Colorado River water in central Arizona for the benefit of an entity outside the State of Arizona. Pursuant to this agreement CAWCD created 80,909 AF of long-term storage credits that may be recovered by CAWCD for MWD. MWD, the Arizona Water Banking Authority and CAWCD executed an amended agreement for recovery of these storage credits in December 2007. All 80,909 AF were recovered and delivered to MWD between 2007 and 2010 (Official Statement, page A-15, 2012).

Water recovered by CAWCD under the terms of the 1992 agreement allows CAWCD to reduce its use of Colorado River water, leaving Arizona with an unused apportionment. The U.S. Secretary of the Interior is

making this unused apportionment available to MWD under its Colorado River water delivery contract. In April 2008, MWD's Board authorized the expenditure of $28.7 million to join the CAWCD and the Southern Nevada Water Authority (SNWA) in funding the construction of a new 8,000 AF off-stream regulating reservoir near Drop 2 of the All-American Canal in Imperial County. The reservoir, constructed by the U.S. Bureau of Reclamation, was completed in October 2010. Newly named the Warren H. Brock Reservoir, it is expected to save up to 70,000 AF of water per year by capturing and storing water that would otherwise be lost. In return for its funding, MWD received 100,000 AF of water that is stored in Lake Mead until recovered, with annual delivery of up to 34,000 AF of water through 2010 and up to 25,000 AF between 2011 and 2036. Besides the additional water supply, the new reservoir adds flexibility to Colorado River operations.

MWD and the Palo Verde Irrigation District (PVID) signed a program agreement for a "Land Management, Crop Rotation and Water Supply Program" in August 2004. Per the MWD (Official Statement, page A-15, 2012), this program provides up to 133,000 AF of water to MWD in certain years through 2040. Under this program, fallowing of approximately 20,000 acres of land began January 1, 2005, and resulted in water savings of approximately 108,700 AF in 2005, 122,200 AF in 2011 and an estimated high of 144,300 AF in 2009 (including water from the supplemental fallowing program). With both Arizona and Nevada increasing use of their water apportionments and the variability and unpredictability of continued Colorado River surpluses, in 1997 the Colorado River Board of California, in consultation with MWD, IID, PVID, CVWD, SDCWA and the Los Angeles Department of Water and Power embarked on the development of an interagency plan for reducing California's use of Colorado River water to its basic apportionment of 4.4 million AF when use of that basic allotment is necessary.

In 1999, IID, CVWD, MWD and the State of California agreed to a set of 'Key Terms' aimed at managing California's Colorado River supply. These key terms were incorporated into the Colorado River Board's May 2000 California Plan that proposed to optimize the use of the available Colorado River supply through water conservation, transfers from higher priority agricultural users to MWD's service area and storage programs. In 2000, California voters approved Proposition 13, which authorized the State of California to issue $1.97 billion of its general obligation bonds for water projects. Additionally, California voters approved Proposition 50 in 2002 and Proposition 84 in 2006, which authorized the issuance by the State of California of $3.4 billion and $5.4 billion, respectively, of its general obligation bonds for water projects. Types of water projects eligible for funding under Propositions 13, 50 and 84 include water conservation, groundwater storage, water treatment, water quality, water security and Colorado River water management projects, many of which are within the scope of the California Plan. As a result of all these actions, since 2003 California's use of Colorado River water has been limited to its basic apportionment of 4.4 million AF per year.

In all, many of the core elements of the California Plan have been put into effect under the October 2003 QSA executed by CVWD, IID and MWD. The QSA establishes Colorado River water use limits for IID, CVWD and MWD, provides for specific acquisitions of conserved water and water supply arrangements for up to 75 years and restores the opportunity for MWD to receive any 'special surplus water' under a set of Interim Surplus Guidelines. The QSA also allows MWD to enter into other cooperative Colorado River supply programs. Related agreements modify existing conservation and cooperative water supply agreements consistent with the QSA and set aside several disputes among California's Colorado River water agencies. Specific programs authorized under the QSA include: lining portions of the All-American and Coachella Canals, which is projected to conserve 96,200 AF annually, with 80,200 AF of conserved water to be delivered to SDCWA by exchange with MWD and 16,000 AF to be delivered to the San Luis Rey Indian tribes by exchange under a water rights settlement; an amendment to the 1988 Conservation Agreement and the associated 1989 Approval Agreement extending the term of the 1988 Conservation Agreement and providing for the transfer of up to 105,000 AF of water conserved by IID to MWD less the amount (up to 20,000 AF of the conserved water) used by CVWD; and the transfer of 200,000 AF of water conserved annually by IID to SDCWA.

With full implementation of the programs identified in the QSA, at times when California is limited to its basic apportionment of 4.4 million AF per year, MWD expects to be able to annually divert to its service area 852,000 AF of Colorado River water plus any unused agricultural water that may be available, as was the case in 2004 and 2005. This is further augmented by the PVID program, which provides up to 118,000 AF of water per year. Challenges filed against the QSA are addressed above and any potential effects of those matters on the availability or reliability of MWD's Colorado River supplies remain speculative at this time.

In 2001, the U.S. Secretary of the Interior adopted guidelines (the "Interim Surplus Guidelines") for use through 2016 in determining if there is surplus Colorado River water available for use in California, Arizona and Nevada. The purpose of the Interim Surplus Guidelines is to provide a greater degree of predictability with respect to the availability and quantity of surplus water through 2016. The Interim Surplus Guidelines were later extended through 2026. The Interim Surplus Guidelines contain a series of benchmarks for reductions in agricultural use of Colorado River water within California by set dates.

Under the Interim Surplus Guidelines, MWD initially expected to divert up to 1.25 million AF of Colorado River water annually under foreseeable runoff and reservoir storage scenarios from 2004 through 2016. An extended drought in the Colorado River basin initially reduced these expectations. From 2000 to 2004, snow pack and runoff in the Colorado River basin were below average. Although runoff was slightly above average in 2005, the runoff in 2006 and 2007 was again below average, making 2000 through 2007 the driest eight-year period on record. Above-average precipitation occurred in 2008, however, producing April through June inflows into Lake Powell that measured 144% of inflows for the same period in 2007. As of June 2008, storage in Lake Mead was at 49% of capacity and Lake Powell was at 53% of capacity. MWD's deliveries for 2007 were approximately 713,400 AF. MWD's 2008 Colorado River diversion approval from the U.S. Bureau of Reclamation totals 783,500 AF, including 4,777 AF for emergency delivery to Tijuana, Mexico.

In 2002, the Southern Nevada Water Authority (SNWA) and MWD entered into an "Agreement Relating to Implementation of Interim Colorado River Surplus Guidelines" in which SNWA and MWD agreed to the allocation of unused apportionment as provided in the Interim Surplus Guidelines and on the priority of SNWA for interstate banking of water in Arizona. SNWA and MWD entered into a storage and interstate release agreement on October 21, 2004. Under this program, Nevada can request MWD to store unused Nevada apportionment of Colorado River water in California. The amount of water stored through 2011 under this agreement was 70,000 AF. In subsequent years, Nevada may request recovery of this stored water. However, as part of a recently executed amendment, it is expected that Nevada will not request return of this water before 2022. The stored water provides flexibility to MWD for blending Colorado River water with less-saline SWP water and improves water quality.

In February 2007, the Bureau of Reclamation issued a Draft Environmental Impact Statement (EIS) regarding new federal guidelines concerning the operation of the Colorado River system reservoirs. These new guidelines establish water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin, provide a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead and extend the Interim Surplus Guidelines through 2026.

The Bureau of Reclamation released the Final EIS in November 2007 and the U.S. Secretary of the Interior issued the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among the Colorado River Basin States protect reservoir levels by reducing deliveries during drought periods, encourage agencies to develop conservation programs and allow the states to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from shortages in all but the most extreme hydrologic conditions. The U.S. Secretary of the Interior issues the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among

the Colorado River Basin States protect reservoir levels by reducing deliveries during drought periods, encourage agencies to develop conservation programs and allow the states to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from water shortages in all but the most extreme hydrologic conditions, according to the MWD (Official Statement, page A-20, 2012).

In addition, in May of 2006, MWD and the U.S. Bureau of Reclamation executed an agreement for a demonstration program that allows MWD to leave conserved water that MWD would otherwise use in Lake Mead. Only 'intentionally created surplus' water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) was eligible for storage in Lake Mead under this program. MWD may store additional intentionally created surplus water in Lake Mead under the federal guidelines for operation of the Colorado River system reservoirs. The Secretary of the Interior delivers intentionally created surplus water to MWD in accordance with the terms of a December 2007 Delivery Agreement between the United States and MWD. As of January 2012, MWD had nearly 435,000 AF in its intentionally created surplus accounts, made up of water conserved by fallowing in the Palo Verde Valley and from the yield allocated to MWD from the Drop 2 Reservoir project and the Yuma Desalting Plant pilot run. MWD stored 193,350 AF of intentionally created surplus water in 2011, including 7,650 AF resulting from the Yuma Desalting Plant pilot run.

Federal and state environmental laws protecting fish species and other wildlife species could affect Colorado River operations, thus changing certain hydropower operations and the amount of water deliveries to the Colorado River Aqueduct. A number of species that are on either endangered or threatened lists under FESA are present in the area of the Lower Colorado River, including among others, bonytail chub, razorback sucker, southwestern willow flycatcher and Yuma clapper rail.

To address biological issues, a broad-based partnership of federal, state, tribal and private entities, including water, hydroelectric power and wildlife management agencies in Arizona, California and Nevada, have developed a multi-species conservation program for the main stem of the Lower Colorado River (the Lower Colorado River Multi-Species Conservation Program, LCR-MSCP). The LCR-MSCP allows MWD to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any unpredictability from additional listings of endangered species. The MSCP also covers operation of federal dams and power plants on the river that deliver water and hydroelectric power for use by MWD and other agencies. The LCR-MSCP covers 27 species and habitat in the Lower Colorado River from Lake Mead to the Mexican border for a term of 50 years.

3. Colorado River Water Quality

As noted by the CWP (page 4-1), the primary water quality concern regarding Colorado River water is its high salinity. In addition, MWD and others have been engaged in efforts to protect their Colorado River water supplies from threats of uranium, perchlorate and Chromium VI. (See full discussion in Section 4.19.4.E.6.b). MWD has been active in efforts to protect these supplies from potential increases in nutrient loading due to urbanization, as well as investigating the sources and occurrence of constituents of emerging concern, such as N-nitrosodimethylamine (NDMA) and pharmaceuticals and personal care products (PPCPs). To date, MWD has not identified any water quality risks that cannot be mitigated (CWP, page 4-1). The only foreseeable water quality constraint to the use of Colorado River water would be the need to blend (mix) it with SWP supplies to dilute it to meet adopted salinity standards.

4. Quagga Mussel Threat

In January 2007, quagga mussels were discovered for the first time in Lake Mead. Quagga mussels can reproduce quickly and, if left unmanaged, can clog intake and raw water conveyance systems, alter or destroy fish habitats and affect lakes and beaches. Quagga mussels were first introduced in the Great Lakes in the late 1980s. These organisms infest much of the Great Lakes basin, the St. Lawrence Seaway and much of the Mississippi River drainage system. The most likely source of the quagga mussel infestation is recreational boats from water bodies around the Great Lakes, which were transported over 1,000 miles west to Lake Mead. In response to the Lake Mead finding, the CDFW created a multi-agency task force with MWD as one of its members. An initial survey of the Colorado River to ascertain the extent of the quagga mussel colonization detected low densities in Lake Mead, Lake Mohave and Lake Havasu, and in the intake of the Central Arizona Project. Quagga mussels were also detected at the Colorado River Aqueduct intake pumping plant, Gene Wash and Copper Basin reservoirs, in portions of the Colorado River Aqueduct and in Lake Skinner. A three-week shutdown of the Colorado River Aqueduct for rehabilitation and repairs in March 2007 also permitted inspection for quagga mussels. Desiccation of mussels from emptying the aqueduct during the shutdown followed by a week of chlorination to kill or limit spread of any remaining mussels after the aqueduct was placed back in service, helped control mussels found there. Shutdowns of the Colorado River Aqueduct in July 2007, October 2007 and March 2008 permitted additional quagga mussel inspection and facilitated some control measures.

MWD reports (Official Statement, page A-21, 2012) that it is working to enhance its ability to detect the mussels, studying mussel transport and settling in MWD conveyance systems, assessing additional, more cost-effective methods to control mussels and developing and implementing control strategies for mussels in MWD's lakes and reservoirs. Future quagga mussel control efforts are expected to include infrastructure upgrades and recommendations on boating practices or additional facilities to control the spread of mussels in the Colorado River Aqueduct system and additional long-term measures. In September 2007, MWD appropriated $5.91 million for design and construction of interim chlorination facilities at Copper Basin and Lake Mathews, design of permanent chlorination facilities at Copper Basin, Lake Mathews and Diamond Valley Lake, and related quagga mussel control measures. In February 2008, MWD appropriated $1.77 million for a new chlorine injection point at the Lake Skinner Outlet Conduit and for the procurement of liquid chlorine trailers and mobile chlorination units. In August 2008, MWD appropriated an additional $1.87 million to complete the chlorination facilities at Copper Basin and Lake Mathews, and in June 2009, MWD appropriated $1.13 million for design and construction of a chlorination system to control quagga mussel growth at the Skinner oxidation retrofit facilities. All told, MWD estimates that its costs for controlling quagga mussels could exceed $10 million per year.

F. Other Factors Affecting Water Supplies

1. Statewide Drought Conditions

Much of Riverside County can be subject to extreme weather events, including drought and the resulting impacts of such events. Drought, like other extreme events, may be localized or wide-spread, and hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere or for water users having a different water supply. A determination of the existence of regional or statewide drought conditions is based on a combination of hydrologic and water supply factors. Because much of Southern California's water supply originates in Northern California in the Sacramento and San Joaquin River basins, DWR relies on hydrologic indices to define water year types for those areas. Snowpack is an important indicator of the water year type, since runoff from Sierra Nevada watersheds is the source of much of California's developed water supply. Based on snowpack and precipitation indices, DWR uses five water-year classifications: critical (being the driest), dry, below normal, above normal and wet.

While there is no accurate, long-term weather forecasting that allows the prediction of when droughts will occur or how long they will last, multi-year droughts are not an infrequent occurrence in California, happening at least once a decade, including the recent periods of 1987-1992, 2006-2009 *and 2013 to present*. Fortunately, droughts exceeding three years are *less likely to occur in* ~~relatively rare in~~ Northern California, the source of much of California's water supply. However, on average, the last decade has been one of the driest on record *across all of California.* According to DWR (Drought FAQs, 2011), parts of California experienced a series of consecutive dry years, water year 2000 set records for the single driest precipitation year on record for Los Angeles and San Diego, and Colorado River inflow into Lake Powell was below average for all but two years between 2000 and 2010.

California developed drought conditions beginning in 2012, and conditions are more extreme than found in previous drought years. In nearly 120 years of recorded history, 2013 was the driest year for California. Similar drought conditions have extended into 2014, with little rainfall and sparse snowpack. As mentioned above, much of Southern California relies on water supplies that originate in Northern California. Sparse snowpack in 2013 and 2014 in the Sierra Nevada Mountains has significantly decreased the amount of water typically provided to Southern California. This decrease in precipitation and snowpack statewide has affected water availability across the board for California, and the state's major reservoirs contain only half of their storage capacities. In January 2014, Governor Brown declared a drought State of Emergency, and directed state officials to take all necessary actions to prepare for water shortages. CAL FIRE hired additional firefighters, California Department of Public Health identified and offered assistance to communities at risk of drinking water shortages, and the California Department of Fish and Wildlife restricted finishing on waterways with low flows. The Water Year 2014 (October 1, 2013 to September 30, 2014) has been labeled California's third driest year, and the U.S. Drought Monitor classified 58% of California in "exceptional" drought and 80% of California in "extreme" drought. NOAA's National Climatic Data Center also reported above average statewide temperatures, which also affects water supply.

As noted by DWR's 2009 publication "Recent California Drought," impacts of drought are usually felt first by those who are directly reliant on annual rainfall, such as ranchers engaged in dryland grazing, rural residents reliant on wells in low-yield areas and small water systems lacking a reliable or alternate source. Drought impacts increase with the length of the drought, as supplies in reservoirs are depleted and groundwater levels decline. As drought conditions continue, other groups become more and more impacted, including individuals in or employed by the agricultural industry, local businesses related to agricultural activities, businesses or individuals dependent on agriculture and non-profit organizations serving the needs of those affected by the drought.

Unlike other extreme events such as earthquakes, fires or floods, drought onset is slow, which can often allow water suppliers sufficient time to implement preparedness programs, institute voluntary or mandatory conservation measures and mitigate reductions in normal supplies. Further, California has an extensive system of water supply infrastructure, including reservoirs, groundwater basins and inter-regional conveyance facilities. This infrastructure helps give water agencies the flexibility they need to respond to the demands of different types of water years and mitigate the effects of dry periods for most types of water users. ~~Thanks to this infrastructure, even after multiple consecutive dry years, one winter of heavy precipitation can often bring water supplies to normal levels.~~

As noted in previous sections, due to the current statewide drought, the SWP was only able to allocate about 5% of the total 4 million acre feet requested by public agencies. While drought onset is slower than other natural disasters, it is difficult to predict when the drought conditions will be reversed. Additional details regarding the relationship between recent drought conditions and SWP supplies and regional and local water supply reliability are discussed further in Section 4.19.4.

2. Climate Change

In addition to the legal and environmental constraints described above, it is also possible that future imported water deliveries could be affected by climate change due to the increased concentrations of carbon dioxide in the atmosphere. Climate change already appears to be altering the hydrologic conditions in the state, adding another layer of unpredictability to the water supply picture in Southern California. Further, climate change could exacerbate California's existing mismatch between where and when precipitation occurs and where and when water is needed.

As previously discussed for the SWP in Section 4.19.3.D, the DWR states that current research suggests global warming could significantly affect the hydrologic cycle, changing California's precipitation patterns and amounts from that of the historical record. There is evidence that suggests some changes have already begun to occur, such as Sierra snowmelt starting earlier, more runoff shifting from the spring to the winter, average air temperature increases of one degree Fahrenheit, rising sea levels and an increase in winter flooding frequency. *NOAA National Climatic Data Center reported that for the first nine months of 2014, California temperatures averaged 63.7º F, or 4.1º F above the 20th century average of 59.6º F. Temperatures from April to September averaged 70.0º F, breaking the old record for the period of 69.4º F set in 2013. In normal years, snowpack stores water during the winter months and releases is through melting during the spring and summer to replenish rivers and reservoirs. However, dry conditions have reduced the amount of snowpack in California's mountains, and warm weather caused early snowpack melting.*

These *climate* changes would significantly affect water supply planning and place more stress on the reliability of existing water supply infrastructure and flood management systems. Other important global climate change concerns include effects on local water supplies, including groundwater; changes in urban and agricultural demand levels and water consumption patterns due to higher temperatures; impacts to human health from water quality degradation and water-borne pathogens; declines in ecosystem health and function; and alterations to power generation and pumping regimes.

Because the potential impacts of climate change have been identified and incorporated into modeling efforts by DWR and individual water agencies, preparation for many of the possible impacts of global climate change are already being incorporated into water planning. For example, the Water Utility Climate Alliance, a group of ten nationwide water providers collaborating on climate change adaptation and greenhouse gas management issues, issued a white paper in January 2010 on methods for incorporating climate change variability into water planning. In addition, water agencies including MWD, CVWD, EMWD and others have already begun planning for possible scenarios resulting from climate change and incorporating responses to climate change in their UWMPs and other planning documents. (For example, see MWD 2010 RUWMP, pages 2-25 to 2-27; CVWD 2011 Management Plan Update, pages 5-15 to 5-17; EMWD 2010 UWMP page 75.)

a. Climate Change and the SWP

Climate change scenarios may further reduce the reliability of SWP water deliveries. As set forth above, DWR's 2011 SWP Final Delivery Reliability Report expressly accounts for and analyzes the potential impacts of climate change on SWP Table A and Article 21 deliveries, which indicates that climate change could decrease average SWP deliveries by as much as 5%. However, SWP- receiving wholesale water agencies that serve Riverside County, such as MWD, EMWD, WMWD and CVWD, have taken these reductions into account in their most recent UWMP updates and have developed elements to deal with the water delivery reductions and added unpredictability, including implementation of additional water conservation methods and development of alternative water supplies, including recycled and desalinated water.

b. Climate Change and the Colorado River

As discussed in MWD's 2010 RUWMP and CVWD's 2011 Management Plan Update, anticipated climate change scenarios may also impact availability of water from the Colorado River. While precise estimates of future impacts of climate change on runoff throughout the Colorado River basin are not currently available, some type of impact is expected. For example, increasing temperatures alone would likely increase losses due to evaporation and sublimation, resulting in reduced runoff. Other potential impacts include decreased annual flow, increased flow variability and more frequent and more severe droughts. Potential changes in the amount of precipitation received by the Colorado River basin could also affect basin yield, according to the CVWD 2011 Management Plan Update (page 5-15).

Potential climate change impacts were evaluated in the U.S. Bureau of Reclamation's 2007 Environmental Impact Study on the "Colorado River Interim Guidelines for East Basin Shortages and Coordinated Operations for Lakes Powell and Mead." These guidelines, which extend through 2026, were crafted to include operational elements to address potential impacts of climate change and increased hydrologic variability. Measures include coordinated operational elements and enhanced conservation opportunities. In addition, water agencies reliant on Colorado River water supplies, including CVWD and MWD, have incorporated elements in their most recent (2010) UWMP updates to deal with the increased unpredictability in Colorado River water supplies due to climate change to help prevent and ameliorate its effects. (For example, see CVWD 2011 Management Plan Update, pages 5-15 to 5-17; MWD 2010 RUWMP, pages 2-25 to 2-27.)

G. Regulations Affecting Water Demand

In concert with the many efforts described herein that are occurring statewide, regionally and throughout Riverside County to diversify, maximize and manage water supplies, California has officially shifted to a new paradigm with respect to managing water demands. The information below is an overview of several key factors affecting current and projected water demands. Additional information and analyses are provided below to illustrate the myriad approaches being implemented by regional wholesale and local retail water agencies throughout Riverside County to achieve extraordinary water conservation. See Appendix EIR-8 for additional details.

1. California's 20 X 2020 Law (SBX7-7)

The Water Conservation Act of 2009 (also referred to as 'SBX7-7' or the '20x2020' law) was enacted as part of the historic comprehensive water package passed during the 2009-2010 7th Extraordinary Session of the California Legislature. As described by MWD's 2010 Regional UWMP, SBX7-7 represents the culmination of efforts by water industry leaders, the environmental community and the legislature to enact legislation that would answer the Governor's call for the state to reduce per-capita water use 20% by the year 2020 as part of the larger effort to ensure reliable water supplies for future generations. The general declarations and policy of SBX7-7 (CWC Section 10608) recognize, among other things, that: Growing population, climate change and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible. Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

Reduced water use through conservation provides significant energy and environmental benefits and can help protect water quality, improve stream flows and reduce greenhouse gas emissions. Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing and essential water management tool to meet the need for water for urban, agricultural and environmental uses.

The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patters of urban and suburban development and past efforts to enhance water use efficiency. The new law includes provisions that apply to both urban and agricultural water conservation.

As applied to urban water conservation, SBX7-7 establishes the goal of achieving a 20% reduction in statewide urban per-capita water use by December 31, 2020, and the interim goal of achieving a 15% reduction by 2015. In an effort to achieve these goals, SBX7-7 requires urban retail water suppliers to develop technical information, such as baseline daily per-capita water use, water use targets and interim water use targets, and to report that information in their 2010 UWMPs.

Base daily per-capita (BDPC) water use is one of two of the primary calculations required by SBX7-7 and represents the average gallons per capita per day (GPCD) value for past water usage. The other key metric are the compliance water use targets, which represent the GPCD targets for 2015 and 2020. The BDPC water use calculation is based on gross water use by an agency in each year and can be from a ten-year average ending no earlier than 2004 and no later than 2010. Or, if 10% of an agency's 2008 municipal demand was met by recycled water, its BDPC may be based on a 15-year average. Using this BDPC water use figure, an urban retail water supplier must then determine its urban water use target for 2020 and its interim water use target for 2015, both in terms of GPCD. These are the 'compliance' water use targets.

CWC Section 10608.20(b) establishes four alternative methods for calculating the compliance water use targets. Generally, they must be determined via one of the following methods: (1) 80% of BDPC water use; (2) adherence to certain water use performance standards; (3) 95% of the applicable state hydrologic region target, as set forth in the State of California's Draft 20x2020 Water Conservation Plan; or (4) the provisional target method and procedures developed by DWR pursuant to SBX7-7. Per-capita reductions under SBX7-7 can be accomplished through any combination of increased water conservation, improved water use efficiency and increased use of recycled water to offset potable demands. Potable demand offsets can also occur through direct reuse of recycled water, such as for irrigation, or indirect potable water reuse through groundwater recharge and reservoir augmentation. SBX7-7 provides additional flexibility by allowing compliance on an individual agency basis or through collaboration with other agencies in a region. Based on MWD's analysis of population and demand, compliance with the 20x2020 goals on an individual agency basis throughout MWD's service area would result in reduced potable water demand by 380,000 AF in 2020.

To assist agencies in preparing the calculations required by SBX7-7, in March 2011, the DWR published a "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan" and the "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009)." Agencies throughout Riverside County have utilized and relied upon DWR's guidance documents in preparing their 2010 UWMPs and complying with SBX7-7. Of particular note, an urban retail water supplier's failure to comply with the requirements of SB X7-7 may be render that agency ineligible for State of California water grant and loan funding opportunities.

As applied to agricultural water conservation, SBX7-7 requires all agricultural water suppliers (as defined by statute) to prepare and adopt an agricultural water management plan by December 31, 2012, and to update those plans by December 31, 2015, and every five years thereafter. As part of the agricultural water management planning process, agricultural water suppliers are required on or before July 31, 2012, to measure the volume of water delivered to their customers, a universal requirement being applied for the first time in California. Pursuant to SBX7-7, DWR must adopt regulations that provide for a range of options that agricultural water suppliers may use to comply with the measurement requirement. In addition, agricultural water suppliers will be required to adopt a pricing structure for water customers based at least in part on the quantity of water delivered and to implement efficient management practices as specified by SBX7-7. Effective 2013, agricultural water suppliers

that do not meet the water management planning requirements established by SBX7-7 will not eligible for State of California water grants or loans.

2. California Model Water Efficient Landscape Ordinance Law

California Assembly Bill 1881 (AB 1881), enacted in September 2008, modified and strengthened the Water Conservation in Landscaping Act (CGC Section 65591 *et seq.*) Among other things, AB 1881 required DWR to update the Model Water Efficient Landscape Ordinance in accordance with specified requirements to reflect the recommendations of the Landscape Task Force as documented in the report entitled Water Smart Landscapes for California. In addition, AB 1881 required local agencies to adopt the updated Model Ordinance or a local landscape ordinance that is at least as effective in conserving water for specified landscape applications, no later than January 1, 2010. If the local agency failed to adopt the Model Ordinance or its own local landscape ordinance, the Model Ordinance became applicable within that jurisdiction as a default measure. In addition, an updated Model Ordinance was approved September 10, 2009. A copy of the updated Model Ordinance may be viewed at: www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf.

The County of Riverside has an ordinance for the efficient use of water for landscaping. Ordinance No. 859, Water-Efficient Landscaping Ordinance, was adopted in 2006 and establishes provisions for water management practices and water waste prevention. See Section 4.19.5 for additional information.

3. Demand Management Measures and Best Management Practices

'Water conservation' is broadly defined to mean the use of less water for the same purpose of use allowed under the appropriative water right. The 2009 CWP identified urban water conservation as the water management strategy most effective for matching supply and demand. Water conservation is an attractive water management strategy because it can yield multiple benefits. Reducing demand can reduce or delay the capital cost of new infrastructure to treat and deliver water. Reduced use also reduces the demand for wastewater treatment, including capital costs and ongoing treatment costs. Water quality may also benefit.

In regard to water conservation, the UWMP Act identifies the following 14 Demand Management Measures (DMMs) that serve as a benchmark for all agencies. As recognized by DWR (CWC Section 10631(f)), these DMMs correspond with the 14 Best Management Practices (BMPs) set forth in the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California, as amended (June 9, 2010). They address the following areas or measures:

- Water survey programs for single-family residential and multifamily residential customers
- Residential plumbing retrofit programs
- System water audits, leak detection and repair
- Metering with commodity rates for all new connections and retrofit of existing connections
- Large landscape conservation programs and incentives
- High-efficiency washing machine rebate programs
- Public information programs

- School education programs
- Conservation programs for commercial, industrial and institutional accounts
- Wholesale agency programs
- Conservation pricing
- Use of a water conservation coordinator
- Water waste prohibitions
- Residential ultra-low flush toilet replacement programs

All of the state's urban water suppliers are pursuing and achieving extraordinary conservation pursuant to the UWMP Act, SBX7-7 and other local conservation requirements. Additional information on the conservation activities of Riverside County's water suppliers are summarized under their respective sections later in this chapter or provided in Appendix EIR-8.

4.19.4 Existing Environmental Setting – Local Water Supplies Serving Riverside County

A. Introduction

While imported water makes up a large portion of the region's supply of drinking water, local sources are an important part of the overall water resources for Riverside County. The prior section focused on the sources and issues affecting the region's supply of imported water from the Sacramento-San Joaquin Delta via the State Water Project and the Colorado River along the state's eastern border. In this section the various sources of local water supplies are examined. The chief source of local water supplies is groundwater. Thus, this section begins with an analysis of those groundwater basins most likely to be affected by the proposed project. Other local sources of water include surface water (rivers, streams, etc.) and recycled water (such as that reclaimed from wastewater treatment plants, among others), as well as desalination, graywater and other less-prominent sources. Each of these sources is discussed in turn below.

After discussing the various sources of local water, this section goes on to describe in detail the water supplies, services and resources associated with the numerous water agencies that serve Riverside County. In particular, a complete accounting is provided for the Metropolitan Water District of Southern California (MWD), since it is the major water importer and wholesale supplier serving most of Southern California, including most of western Riverside County. Following MWD, descriptions are provided for the other large wholesale water agencies serving Riverside County, first for western Riverside County and then for eastern. Accompanying these are brief descriptions of the individual retail water providers that rely on the wholesalers, with an emphasis on the water agencies expected to be affected by or serve the future development accommodated by GPA No. 960.

B. Local Groundwater Basins

Groundwater basins are defined by the California DWR pursuant to Bulletin 118 (2003), which describes each basin in California. As shown in Figure 4.19.14 (Groundwater Basins Within Riverside County), a number of groundwater basins underlie Riverside County. Where groundwater basins in Riverside County are expected to serve as water sources for future development accommodated by the project where no water district exists, information is provided herein. (These areas area discussed in greater detail at the end of this section as well). The intent of this section is ensure that in the absence of an UWMP or water service provider, sufficient information and analyses are provided to Riverside County decision-makers. This will enable them to make informed decisions regarding water resources and potential impacts. For the project's specific effects and impacts on water resources, see sections 4.19.4 and 4.19.5, later in this chapter.

1. Groundwater Rights and Regulations

California law recognizes several types of groundwater rights and also authorizes several ways to regulate and manage groundwater resources. Notably, however, no single statewide system exists in California for the allocation of groundwater rights, or for the use, regulation or management of the State of California's groundwater resources. The primary types of groundwater rights recognized in California are overlying, appropriative and adjudicated rights.

An *overlying right* is the right of a landowner to produce (e.g., pump up) percolating groundwater that exists beneath the property for reasonable and beneficial use on the overlying property, including but not limited to domestic, agricultural and related uses. Overlying rights are correlative, such that all holders of an overlying right to a particular source of groundwater have shared priority to the safe yield of a groundwater basin.

An *appropriative right* is the right to produce groundwater for non-overlying use, such as a use that is distant from the overlying land from which the groundwater is produced. Appropriative rights only apply to the amount of groundwater that is surplus to the reasonable and beneficial uses of overlying right holders.

An *adjudicated right* is obtained through legal proceedings brought to determine the rights of certain parties to divert or extract water from a particular source. Typically, a trial is conducted and the court issues a judgment or decree establishing the parties' respective water rights and specifying how those rights may be exercised and administered. Each adjudication is unique and the nature of an adjudicated right is determined by the express provisions of each judgment, decree, order or decision. Adjudicated rights are commonly determined when a groundwater basin is in overdraft.

Within Riverside County, a number of groundwater basins, as well as a few surface waters, have been subject to an adjudication process establishing various parties' rights to ensure the resource is used in a fair and sustainable way. Table 4.19-K (Adjudicated Waters in Riverside County) lists these waters, as identified by the State of California. Additional information on these resources and details on their adjudication can be found in the water agency descriptions (Section 4.19.4.D through F).

Among California's different types of groundwater rights, there are also different structures for regulating and managing groundwater. For example, the Regional Water Quality Control Boards carry out certain roles in regulating groundwater quality (as discussed in Section 4.19.2). Beyond those regulatory controls, the California Water Code authorizes the adoption of local groundwater management plans to address matters such as groundwater storage and recharge, well field contamination, monitoring programs and production assessments (commonly known as 'AB 3030' plans).

Thus, existing groundwater rights and management programs have usually been developed on an *ad hoc* basis in response to local conditions through local agencies, adjudication or districts formed by special legislation. See Section 4.19.5 for further information on local laws relating to groundwater.

2. Groundwater Basins in Riverside County

As shown in Figure 4.19.14, a number of groundwater basins are located within the two state-defined hydrologic regions covering Riverside County, the South Coast and Colorado River hydrologic regions. The information presented in this section is from DWR's California's Groundwater Bulletin 118, 2003 Update, unless noted otherwise. It should also be noted that, per the DWR, the water quality data reported here is intended as "an indicator of the types of activities that cause contamination in a given basin." It is only representative of the sample location site and "does not indicate the water quality delivered to the consumer."

Table 4.19-K: Adjudicated Waters in Riverside County

Water Body	Adjudication Information	Location
Surface Waters and Watersheds		
Santa Ana River	Decree Entered (state assisted). Private Watermaster	
Santa Margarita River Watershed	U.S. District Court- appointed Watermaster, final 1966.	Located in Riverside and San Diego Counties; For three GW Basins: 9-4, 9-5 and 9-6
Temecula Creek (Santa Margarita River)	Federal Decree; No Decree Entered	
Whitewater River	Statutory Adjudicated, Decree Entered (state assisted)	
Groundwater Basins		
Beaumont Basin	Watermaster by committee of various affected water agency heads. Final 2004.	Encompasses Groundwater Basins 8-2.08, 8-2, 7-21.04 and 7-21
Chino Basin	Court-appointed Watermaster. Final 1978.	Located in Riverside and San Bernardino Counties; NW part of Upper Santa Ana Valley Basin (8-2). (Cucamonga Basin, also part of Basin 8-2, was adjudicated sep.).
Upper San Jacinto Basin	Decree Entered (state assisted)	Adjudication "includes underground water"
San Bernardino Basin Area (SBBA)		Located in Riverside and San Bernardino Counties. Spans the NE part of Upper Santa Ana Valley Basin, GW Basin 8-2.

Source: DWR, Bulletin 118, 2003 Update, 2003. DWR Exhibit, "Water Rights Determination, California, 2002," 2002.

3. Colorado River Hydrologic Region – Groundwater Basins

DWR Bulletin 118 reports that the Colorado River Hydrologic Region covers approximately 13 million acres (20,000 square miles) in southeastern California. It is bounded on the east by Nevada and Arizona, the south by Mexico and to the west by the Laguna, San Jacinto and San Bernardino Mountains. The region spans all of Imperial County, most of Riverside County, much of San Bernardino County and part of San Diego County. About 533,000 people live in the region (as of 1998) and its largest population centers are Palm Springs, Palm Desert, Indio, Coachella and El Centro.

Many of the desert's alluvial valleys are underlain by groundwater aquifers. Roughly 26% of the region, (about 8.68 million acres) have underlying groundwater basins. A total of 64 basins and sub-basins have been delineated within the region. Due to the vast area and sparse settlement patterns throughout much of it, many of these local groundwater aquifers are the sole source of water for local communities.

According to the DWR, groundwater provides about 8% of the water supply in normal years for agricultural and urban uses within the region. In smaller basins, groundwater is found in unconfined alluvial aquifers. In some of the larger basins, particularly near dry lakes, aquifers may be separated by geological barriers that create confined groundwater conditions. Depths of basins range from tens or hundreds of feet in smaller basins and along arms of ephemeral rivers to thousands of feet in larger basins. The thickness of aquifers varies from tens to hundreds of feet. Well yields vary in this region depending on aquifer characteristics and well location, size and use. Some aquifers are capable of yielding thousands of gallons per minute to municipal wells.

Conjunctive use of surface water and groundwater is a long-standing practice in the region. Water is imported from the Colorado River for irrigation in Imperial, Coachella and Palo Verde valleys and from groundwater recharge in Coachella Valley. Water imported from Northern California via the State Water Project is used to replenish Warren and Joshua Tree groundwater basins. Many agencies have erected systems of barriers to allow more efficient percolation of ephemeral runoff from surrounding mountains. Some regional agencies are starting to investigate the concept of utilizing groundwater basins in this sparsely populated region for storing water that would then be pumped during drought years.

Table 4.19-L: Groundwater Basins in Riverside County

Basin/Subbasin # Name (Type[1])	Area (acres)	Well Yields[2]		Active Monitoring			TDS[6] (mg/L)	
		Max	Ave	No[3]	Qual[4]	Title 22[5]	Ave.	Range
South Coast Hydrologic Region								
8-1 Coastal Plain of Orange County (A)	224,000	4,500	2,500	521	411	240	475	232-661
8-2 Upper Santa Ana Valley:								
8-2.01* Chino (A)	154,000	1,500	1,000	12	8	187	484	200-600
8-2.03* Riverside-Arlington (A)[7]	58,600	---	---	11	3	43	---	370-756
8-2.04 Rialto-Colton (A)	30,100	5,000	545	50	5	41	337	---
8-2.07 Yucaipa (A)	25,300	2,800	206	19	3	45	334	---
8-2.08* San Timoteo (A)	73,100	---	---	67	12	36	---	---
8-2.09 Temescal (C)	23,500	---	---	2	2	20	753	373-950
8-4* Elsinore (C)	25,700	5,400	---	1	1	18	---	---
8-5* San Jacinto (C)	188,000	---	---	150	115	56	463	160-12,000
8-6 Hemet Lake Valley (C)	16,700	820	196	---	---	9	---	---
9-5* Temecula Valley (C)	87,800	1,750	---	140	4	67	476	220-1,500
9-6* Coahuila Valley (C)	18,200	500	---	2	---	1	---	263
Colorado River Hydrologic Region								
7-3 Ward Valley (A)	961,000	260	180	---	---	1	---	327-589
7-4 Rice Valley (C)	189,000	65	---	---	---	---	---	---
7-5 Chuckwalla Valley (C)	604,000	3,900	1,800	12	---	10	---	424
7-6* Pinto Valley (A)	183,000	1,480	900	---	---	1	---	---
7-7 Cadiz Valley (C)	270,000	167	66	---	---	---	400	300-3,000
7-9 Dale Valley (C)	213,000	380	275	---	---	2	---	---
7-12 Warren Valley (A)	17,200	4,000	350	27	18	17	196	129-269
7-21 Coachella Valley:								
7-21.01* Indio (Whitewater) (A)	336,000	1,880	650	30	---	204	300	---
7-21.02* Mission Creek (A)	49,000	3,500	715	5	---	15	<500	---
7-21.03* Desert Hot Springs (C)	101,000	2,500	958	10	---	2	---	800-1,000
7-21.04* San Gorgonio Pass (A)	38,700	1,000	0	17	8	5	---	106-205
7-25 Ocotillo-Clark Valley (C)	223,000	3,500	1,760	1	---	2	---	---
7-26* Terwilliger Valley (C)	8,030	100	---	---	---	1	---	500
7-31* Orocopia Valley (A)	96,500	210	165	0	---	1	---	---
7-32* Chocolate Valley (C)	130,000	0	0	0	---	---	---	---
7-33 East Salton Sea (C)	196,000	0	0	1	---	4	---	---
7-37 Arroyo Seco Valley (C)	258,000	---	---	2	0	0	---	---
7-38 Palo Verde Valley (A)	73,400	---	---	11	---	19	840	658-1,030
7-39* Palo Verde Mesa (C)	226,000	2,750	1,650	20	---	13	---	---

Basin/Subbasin # Name (Type[1])		Area (acres)	Well Yields[2]		Active Monitoring			TDS[6] (mg/L)	
			Max	Ave	No[3]	Qual[4]	Title 22[5]	Ave.	Range
7-40	Quien Sabe Point Valley (C)	25,300	25	---	---	---	3	---	---
7-41	Calzona Valley (C)	81,000	2,340	500	0	0	0	---	---
7-42	Vidal Valley (C)	138,000	1,800	675	---	---	1	---	---
7-51	Lost Horse Valley (C)	17,300	---	---	---	---	---	---	---
7-52	Pleasant Valley (C)	9,670	---	---	---	---	---	---	---
7-53	Hexie Mountain Area (C)	11,200	---	---	---	---	---	---	---
7-54	Buck Ridge Fault Valley (C)	6,930	---	---	---	---	---	---	---
7-55	Collins Valley (C)	7,080	1,500	---	---	---	---	---	---
7-62	Joshua Tree (A)	33,800	2,200	1,110	25	5	14	180	117-185
7-63	Vandeventer Flat (C)	6,750	50	17	---	---	---	---	---

* Denotes groundwater basins located beneath known proposed project areas. See text for descriptions.

Footnotes:

1. Groundwater Budget Type (per DWR, Bulletin 118, Box R):
   - A: Indicated that a groundwater budget (GWB) exists for the basin; enough information was available from varied sources to give a general indication of the basin's GWB; a groundwater model exists for the basin that can be used to calculate a GWB; or, actual groundwater extraction data exist for the basin.
   - B: Indicates that a use-based estimate of groundwater extraction was calculated for the basin.
   - C: Indicates that there is not enough data to provide either an estimate of the basin's GWB or groundwater extraction from the basin.
2. Well yields: Maximum and average well yields in gallons per minute (gpm) are reported for municipal supply and agricultural wells where available. Most of the values reported are from initial tests reported during well construction, which may not be an accurate indication of the long-term production capacity of the wells.
3. Number: the number of wells actively monitored without consideration of frequency.
4. Quality: the number of wells monitored for various constituents.
5. Title 22: the number of public water system wells that are actively sampled and monitored under the direction of the California Department of Health Services Title 22 program.
6. TDS: Total dissolved solids. Data from published reports.
7. Subdivided into two areas known as Riverside North and Riverside South for management purposes.

Source: DWA, Bulletin 118, "Hydrologic Regions of California," 2002. DWA, Bulletin 118 Update, Tables 24 and 41, 2003.

The chemical character of groundwater in the Colorado River region is variable. Minerals typically occurring in the region's water commonly include sodium and calcium, with magnesium appearing less often. Bicarbonate is usually the dominant anion, although sulfate and chloride waters are also common. In basins with closed drainages, water character often changes from calcium-sodium bicarbonate near the margins to sodium chloride or chloride-sulfate beneath a dry lake. It is not uncommon for concentrations of dissolved constituents to rise dramatically toward a dry lake where saturation of mineral salts is reached.

The TDS content of groundwater is high in many of the basins in this region; high fluoride content is also common. Sulfate content occasionally exceeds drinking water standards and high nitrate content is also common, especially in agricultural areas. Two of the primary challenges in the Colorado River region are overdraft in the Coachella Valley and leaking underground storage tanks. The EPA has not yet placed any contamination sites in this hydrologic region on the Superfund National Priorities List. However, one site is under consideration because of high pesticide levels.

From 1994 through 2000, a total of 314 public supply water wells were sampled in 23 of the 64 basins and subbasins of the Colorado River region. Analyzed samples indicate that 270 wells (86%) met the State of California primary MCLs for drinking water standards. Roughly 44 wells (14%) had constituents that exceeded one or more MCL.

The following basins and subbasins occur within the Colorado River Hydrologic Region and underlie areas potentially subject to future development as a result of the proposed project that are not already served by an existing public water agency or district. For a summary of all the region's groundwater basin data (i.e., Table 41 from DWR Bulletin 118, 2003 Update), see Appendix EIR-8.

Pinto Valley Groundwater Basin (No. 7-6): As shown in Figure 4.19.14, this fairly large basin underlies roughly 286 square miles of the Pinto Valley, located roughly east of the Upper Coachella Valley and southeast of

the Joshua Tree area. It drains eastward by the Fried Liver, Smoketree and Porcupine Washes. Annual average precipitation ranges to 6 inches.

Recharge to the basin is by percolation of runoff from the surrounding mountains, precipitation to the valley floor and by underflow. Groundwater moves eastward through the basin towards Chuckwalla Valley. Water levels have been generally noted as declining in the past 50 years, however, it has also risen at times. The total storage capacity of the basin is estimated at 230,000 AF. The amount currently in the basin is unknown, according to the DWR. Extractions are estimated at 319-320 AFY. This data, however, is from 1954 and more recent data is not available.

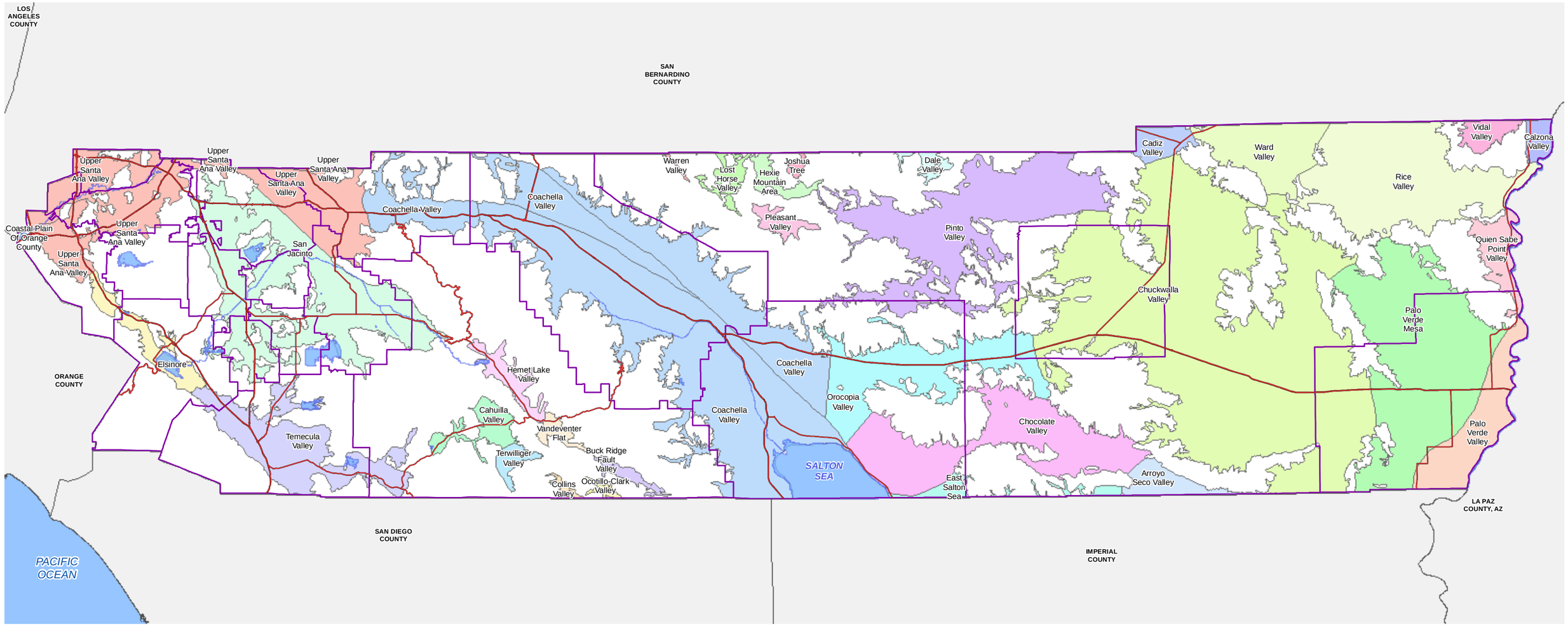
The chemical character of the groundwater ranges from sodium sulfate in the east to rich in sodium, calcium and their bicarbonates in the western portion of the basin. TDS ranges from 235-435 mg/L in the western part of the basin and 408-839 mg/L in the eastern part. The average TDS from a public supply well in the basin was 300 mg/L. At 298 mg/L, the eastern portion's sulfate concentrations locally exceed the MCL. In 1975, DWR also reported that the basin's fluoride concentrations are locally high for domestic use and the percent sodium is also high for irrigation use. There is only one public supply well reported for the basin. No water agencies, districts or management plans cover this basin.

Coachella Valley Basin (No. 7-21): The Coachella Valley Basin spans the entire Coachella Valley, roughly 525,000 acres, from the San Bernardino County line and San Gorgonio Pass in the north to the Imperial County line and Salton Sea to the south. The basin is subdivided into four subbasins, of which, the Indio Subbasin in the largest.

Table 4.19-M: Well Data Summary for Colorado River Hydrologic Region

Well Criteria	# Wells	%
Public Supply Wells Sampled	**314**	
Wells Meeting Primary MCL Standards	**270**	**86%**
Wells With Constituents Above Primary MCL	**44**	**14%**
Constituents Detected		
Inorganic	17	39%
Radiological	21	47%
Nitrates	6	14%
Most Frequently Occurring Contaminants	**# of Occurrences**	
Primary Inorganics	**17**	
Fluoride	17	
Secondary Inorganics	**69**	
Iron	38	
Manganese	26	
Total Dissolved Solids (TDS)	5	
Radiological Constituents	**7**	
Radium-226	1	
Radium-228	3	
Ra-226 and Ra-228 Combined	3	
Nitrates	**7**	
Nitrate (as NO_3)	6	
Nitrate + Nitrite	1	

Source: DWR, Bulletin 118, Update 2003.



Data Source: California Department of Water Resources (DWR), (2012)

- Arroyo Seco Valley
- Buck Ridge Fault Valley
- Cadiz Valley
- Cahuilla Valley
- Calzona Valley
- Chocolate Valley
- Chuckwalla Valley
- Coachella Valley
- Coastal Plain Of Orange County
- Collins Valley
- Dale Valley
- East Salton Sea
- Elsinore
- Hemet Lake Valley
- Hexie Mountain Area
- Joshua Tree
- Lost Horse Valley
- Ocotillo-Clark Valley
- Orocopia Valley
- Palo Verde Mesa
- Palo Verde Valley
- Pinto Valley
- Pleasant Valley
- Quien Sabe Point Valley
- Rice Valley
- San Jacinto
- Temecula Valley
- Terwilliger Valley
- Upper Santa Ana Valley
- Vandeventer Flat
- Vidal Valley
- Ward Valley
- Warren Valley
- Highways
- Area Plan Boundary
- Waterbodies

Figure 4.19.14

December 16, 2013

Miles

0 10 20

RIVERSIDE COUNTY PLANNING DEPARTMENT

GROUNDWATER BASINS IN RIVERSIDE COUNTY

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Indio Subbasin (No. 7-21.01): The Indio (Whitewater River) Subbasin itself spans roughly 336,000 acres (525 square miles) of Riverside County, as well as portions of San Bernardino and Imperial Counties. It extends southeast down Coachella Valley approximately 70 miles to the Salton Sea and is bounded by the Garnet Hill Fault in the north and the San Andreas Fault to the southeast. The Banning Fault bounds it to the north and the semi-permeable rocks of the Indio Hills marking the northeast boundary. The San Jacinto and Santa Rosa Mountains bound the subbasin on the south and bedrock of the San Gorgonio Pass bounds the subbasin to the northwest. The Salton Sea is the eastern boundary and the subbasin's primary discharge area. The subbasin underlies most of the valley's the cities. From about Indio southeasterly to the Salton Sea, the subbasin contains increasingly thick layers of silt and clay, especially in its shallower parts. These silt and clay layers, remnants of ancient lake beds, impede the percolation of water applied for irrigation and restrict groundwater recharge opportunities to the westerly and easterly fringes of the subbasin. The area receives an average of about 6 inches of precipitation a year.

The Indio Subbasin is drained by the Whitewater River and its tributaries. The Whitewater River rarely flows throughout the year and flow in its tributaries, such as the San Gorgonio River, is intermittent. Surface flow is southeastward to the Salton Sea. The Colorado River Aqueduct and the Coachella Branch of the All-American Canal convey imported surface water into the overlying Coachella Valley.

The groundwater supply of the Whitewater River Subbasin consists of a combination of natural runoff and returns from groundwater and imported water use. The supply is supplemented with artificial recharge with imported SWP and Colorado River water. Since the early 1980s, the water levels in this subbasin have been declining, at least partially due to increasing urbanization and groundwater usage. The long-term average of natural inflow is about 57,000 AFY and varies from about 8,000 AFY in very dry years to over 200,000 AFY in extremely wet years. From 2000 to 2009, natural inflows were below normal, averaging about 40,000 AFY. Returns from use vary with water demands. From 2000 to 2009, returns from use averaged about 240,000 AFY. During this same period, about 51,000 AFY of imported water was recharged in the basin while total inflows were about 331,000 AFY. Outflows from the basin were due to pumping, flows to the agricultural drainage system, evapotranspiration by native vegetation and subsurface flow to the Salton Sea. Between 2000 and 2009, groundwater pumping averaged about 389,000 AFY. Drain flows are estimated be about 48,000 AFY, while evapotranspiration and subsurface outflow averaged about 4,000 AFY. Total basin outflows for this period averaged 441,000 AFY.

Surface runoff and subsurface inflow are significant sources of recharge to the subbasin. In addition, the Whitewater River spreading grounds northwest of Palm Springs is recharged with imported Colorado River Aqueduct water and has a maximum capacity of 300,000 AFY. Colorado River water is conveyed into the subbasin via the Coachella Canal, which also supplies a pilot recharge project facility located in the southeastern part of the subbasin.

According to the CVWD, prior to 1949, pumping caused a steady decline in water levels. After 1949 and into the early 1980s, water levels rose as imported Colorado River water began to recharge parts of the subbasin. Elsewhere in the subbasin during this time, however, water levels continued to decline. And, since the 1980s, water levels in all parts of the subbasin have largely declined, even with the Colorado River imports. These declines are largely due to increasing urbanization and groundwater pumping.

Groundwater storage was estimated at 10,200,000 AF in the first 700 feet of saturated deposits, plus another 1,520,000 AF groundwater in storage for the Garnet Hill area. Between 1953 and 1967, the average annual decrease of groundwater storage was estimated at 33,000 AFY; though the DWR notes that population and development increases probably result in even larger average annual decreases now. CVWD (2000) estimates the

decrease in freshwater in storage in the Coachella Valley Groundwater Basin for 1999 to be 136,700 AF, of which the Indio Subbasin is the largest part.

According to the CVWD, total inflows for 1999 were 392,000 AFY and total outflows were 465,800 AFY, with a net annual change in freshwater storage of 136,000 AFY. The Whitewater River spreading grounds recharged 61,200 AFY in 1999. Average historical natural recharge is approximately 49,000 AFY, ranging from 187,000 AFY in extremely wet years to as low as 10,000 AFY in dry years. The average annual streamflow from streams in the subbasin is an estimated 31,000 AF.

Native groundwater in the Indio Subbasin is predominantly calcium bicarbonate in character, with an average TDS content of 300 mg/L. The Colorado River water is added to the subbasin at the Whitewater River spreading grounds and mixes within the subbasin, resulting in a net salt addition of approximately 265,000 tons per year. A plume of high nitrate-concentration groundwater (45 mg/L or greater) was noted extending southeasterly from near Cathedral City toward La Quinta. According to the DWR, the nitrate plume is a potential threat to deeper underlying groundwater via improperly constructed, sealed or abandoned wells. Groundwater near major faults, such as the Banning and San Andreas faults, contains elevated levels of fluoride.

Data reported by the DWR indicates that of 161-164 wells sampled under DHS Title 22 program requirements between 1994 and 2000, two showed concentrations above an MCL for primary inorganics and 13 for secondary inorganics, as well as seven for radiological constituents. None of the wells exceeded MCL for nitrates, pesticides, VOCs or SVOCs.

The subbasin has a reported 30 wells used by the CVWD for water level monitoring and 204 wells are used for public water supplies. The subbasin is utilized by both the CVWD and the DWA. The Coachella Valley Water Management Plan includes the Indio Subbasin amongst its management areas. As described previously, this CVWD-DWA joint plan is intended to outline and address the "current issues and management goals and practices pertaining to the area's groundwater system," including overdraft of the Indio Subbasin.

In 2003 the California DWR noted that the amount of usable supply in the overdrafted aquifer was decreasing. CVWD estimates basin overdraft annually and found the annual loss in storage (i.e., overdraft) for the Coachella Valley was approximately 72,000 in 2009. The 2009 loss in storage was lower than historical loss due to increased SWP Exchange water deliveries at Whitewater River Recharge Facility and increased Canal water recharge at the Thomas E. Levy Groundwater Replenishment Facility (Levy facility) that began in the east valley in 2009.

The overdraft condition of the Coachella Valley has caused groundwater levels to decline in many portions of the east valley from La Quinta to the Salton Sea and has raised concerns about water quality degradation and land subsidence. Water levels in the west valley from Palm Springs to La Quinta have also decreased substantially, except in areas adjacent to and down gradient of the Whitewater River Recharge Facility, where artificial recharge has successfully raised water levels. In 2009, the annual loss in storage in the Lower Whitewater River Subbasin was 23,900 AF and for the Upper Whitewater River Subbasin it was 48,100 AF. In all, between 2000 and 2009, an average of 110,000 AFY was removed from storage.

Mission Creek Subbasin (No. 7-21.02): Encompassing roughly 756 square miles (49,000 acres), the Mission Creek Subbasin is the third-largest of the four Coachella Valley subbasins. This subbasin occupies the northern part of the Coachella Valley, lying in a wedge-shape between the larger Indio Subbasin on the south and west, and Desert Hot Springs Subbasin on the north and east. See Figure 4.19.14.

Major surface water features in the area are the Whitewater River, Mission Creek, San Gorgonio River, Little and Big Morongo washes. These drainages flow intermittently during high precipitation events. The area averages about 6 inches of precipitation a year.

While sediment deposits may be as deep as 7,000 feet, the DWR notes that only the upper 2,000 feet may be considered water-bearing. The subbasin's water becomes more saline with depth. The coarse-grained and unconsolidated soils enable well yields as high as 3,000 gallons per minute. Groundwater movement is generally southward, although movement is relatively low due to the relative flatness of the basin. Runoff from the surrounding highlands drains into the subbasin from intermittent creeks and rivers supplying most of the recharge to the subbasin. Subsurface leakage occurs across the Mission Creek Fault approximately three miles southeast from Desert Hot Springs, allowing groundwater of different quality to enter the subbasin from the neighboring Desert Hot Springs Subbasin.

The DWR notes that water levels have been declining since the early 1950s, at a rate of 0.5-1.5 feet per year, due to scarce annual precipitation and groundwater extractions. MSWD reports that current water levels vary in domestic wells from 140 to 721 feet below ground surface with an average depth to water of 372 feet. The total storage capacity for the subbasin is an estimated 2,600,000 AF. This is the amount of groundwater the subbasin can theoretically contain based on 1935-1936 groundwater levels and using a maximum depth below surface of 1,000 feet. The 1935-1936 levels are considered to be steady state pre-development conditions. Groundwater in storage for the subbasin is estimated to be 1,400,000 AF. Groundwater extractions within the subbasin for 2000 were 8,923 AF by MSWD and 3,176 AF by CVWD. Estimated average seasonal tributary runoff to the subbasin is 6,000 AF.

Groundwater in the subbasin ranges in character from a calcium-magnesium bicarbonate in the northwest to sodium chloride sulfate type in the southeast. The average TDS content is generally below 500 mg/L. Data reported by the DWR indicates that of 14-15 wells sampled, two showed concentrations above MCL for radiological constituents and one for nitrates. None of the wells exceeded MCL for primary or secondary inorganics, pesticides, VOCs or SVOCs.

The subbasin has a reported five wells used by the MSWD for water level monitoring and 15 wells used for public water supplies. The subbasin is utilized by the MSWD, as well as CVWD and DWA. The subbasin is not adjudicated, but is managed under the Coachella Valley Water Management Plan. CVWD, DWA and MSWD jointly manage the Mission Creek Subbasin under the terms of the Mission Creek Settlement Agreement (December, 2004). This agreement and the 2003 Mission Creek Groundwater Replenishment Agreement between CVWD and DWA specify that the available SWP water will be allocated between the Mission Creek and Whitewater River subbasins in proportion to the amount of water produced or diverted from each subbasin during the preceding year. Groundwater recharge in the Mission Creek basin has taken place since 2002. In 2009, production from the Mission Creek Subbasin was about 7% of the combined production from these two subbasins. CVWD, MSWD and DWA are jointly developing a water management plan for this subbasin.

Desert Hot Springs Subbasin (No. 7-21.03): This subbasin is the second largest in the Coachella Valley and covers roughly 158 square miles (101,000 acres). It lies at the southern end of the valley, north of the Salton Sea and along the east and west sides of the Sea, down into Imperial County. The Little San Bernardino Mountains and the Indio Hills form the subbasin's boundaries to the southeast and southwest, respectively. It is divided from the Indio Subbasin by the Banning-Mission Creek Fault.

Thickness of the water bearing deposits is estimated to be in excess of 700 feet. Due to lack of development within the subbasin, however, groundwater data is sparse, except for the Miracle Hill area where development is greater due to the thermal waters that supply resorts. These hot thermal waters occur near active faults such as

the Mission Creek Fault. In the Miracle Hill area, the DWR notes that more than 130 water wells were drilled and approximately half of these were active in 1961 and pumped water for the hot water spas. Many of these wells or replacement wells are still active according to MSWD.

Seasonal runoff draining from the Little San Bernardino Mountains recharges the subbasin by percolating through the underlying water bearing coalescing alluvial fan deposits. Surface runoff, from high precipitation or snow-melt, is contained by intermittent creeks that discharge into the subbasin. The region is subject to low precipitation levels, an average of 5.7 inches per year.

In 1961, depth to water ranged from 12 feet below ground surface near the Mission Creek Fault to over 300 feet southeast of Miracle Hill. Water level data was sparse in most areas within the subbasin except the Miracle Hills, where the water table is declining because of use by resorts. Water level data in the other areas of the subbasin suggest that the water table has remained stable and that the 1964 synopsis of groundwater level trends is probably still relevant to current basin conditions. Presently, the subbasin is still underdeveloped due to high levels of TDS and most of the groundwater extraction is in the Miracle Hill Area where water levels are still in decline.

The DWR calculated the groundwater storage capacity for Desert Hot Springs at 4.1 million AF, based on specific yields determined from drillers' logs. DWR also calculated the groundwater in storage values for the saturated thickness 20 feet below the water table at 172,000 AF for the entire subbasin in 1961. This value may have declined slightly due to hot groundwater extraction in the Miracle Hill resort area.

Not enough data exist to compile a detailed groundwater budget for the subbasin. Little groundwater extraction data is reported or made public at this time. Due to the lack of groundwater management of this subbasin, DWR states that a water budget cannot be given. Also, groundwater extraction values of thermal waters for the resorts and spas are not available. Average seasonal tributary runoff to the subbasin was estimated to be 2,900 AF.

Sodium sulfate type groundwater exists throughout the subbasin with high TDS values ranging from 800-1,000 mg/L and chloride levels of 100-150 mg/L. The high TDS concentrations limit agricultural and domestic water resources limit the use of the subbasin's groundwater within the valley. Groundwater adjacent to the Mission Creek Fault and in the Miracle Hill area of the subbasin contains the largest amounts of sodium and sulfate and has abnormally high temperatures.

Hot water wells near the City of Desert Hot Springs, in the subbasin along the Mission Creek Fault, have groundwater temperatures that average 118°F. Gypsum, which is a significant source of sulfate, is present in the exposures of the Mission Creek Fault and in the semi-water bearing materials of the Indio and Mecca Hills, and may be a possible source of the sulfate ions in the subbasin's groundwater. A single well was tested for radiological constituents, nitrates, pesticides, VOCs and SVOCs. No MCL was exceeded for any of these.

The CVWD monitors 10-15 wells for water levels, two wells are monitored for water quality pursuant to Title 22 and an unspecified number of hot water wells (supplying non-potable water for resort use) are monitored for bacteria by the Riverside County Department of Health Services. CVWD, DWA and MSWD all use water from this subbasin, which is also addressed in the Coachella Valley Water Management Plan.

San Gorgonio Pass Subbasin (No. 7-21.04): This last subbasin has an area of approximately 60 square miles (38,650 acres) and is the smallest of the four subbasins comprising the Coachella Valley Basin. It is located at the upper northwestern edge of the valley and lies entirely within San Gorgonio Pass. The San Bernardino Mountains and San Jacinto Mountains bound this subbasin to the north and south, respectively. A surface drainage divide

between the Colorado River and South Coastal hydrologic regions bounds the subbasin to the west. The eastern boundary is formed by a bedrock constriction that creates a groundwater cascade into the Indio Subbasin.

Average annual rainfall within the subbasin ranges from 15 to 18 inches. The San Gorgonio River flows intermittently over the subbasin and is its main surface drainage feature. Precipitation in the northern San Bernardino Mountains contributes its runoff to the San Gorgonio River. The alluvial sand and gravel deposits overlaying the subbasin readily allow water recharge. Overall, however, the subbasin has a complex geologic and hydrogeologic history with scarce historical data available. A steep groundwater gradient is present in most of the subbasin because of construction of the San Jacinto Tunnel in the 1930s; the intense de-watering necessary for its construction increased the groundwater gradient and changed groundwater movement from westward to southeastward (diverting into the Indio Subbasin).

Little subsurface inflow occurs for the subbasin, but about 9,000 AFY outflows into the Indio subbasin. Groundwater extraction from the subbasin in 1999 was an estimated 7,500 AF according to the SGPWA. Average precipitation over the subbasin is approximately 18,000 AFY and average stream flow is 5,000 AFY. About 9% (2,100 AF) of this precipitation and stream flow is estimated to provide recharge to the subbasin annually. Between 1967 and 1987, DWR reported groundwater levels in the eastern part of the subbasin as rising or staying the same. Initially estimated at around 2,700,000 AF, DWR now estimates the total storage capacity of the subbasin to be about 2, 200,000 AF with roughly 1,400,000 AF of groundwater in storage for the entire saturated thickness of the subbasin.

The DWR characterizes groundwater in the subbasin as predominantly calcium-sodium bicarbonate type, with the TDS content from municipal wells ranging from 106 to 205 mg/L. The SGPWA monitors the subbasin's water levels from 17 wells and its water quality from eight wells. Five wells are monitored for drinking water quality pursuant to Title 22. In addition to the SGPWA, the subbasin is utilized by the City of Banning Water District, the Beaumont-Cherry Valley Water District and the Morongo Indian Tribe.

Terwilliger Valley Groundwater Basin (No. 7-26): This small basin covers approximately 12.5 square miles (8,030 acres) underlying the Terwilliger Valley, in the heart of the Anza area, roughly between the junction of Highways 371 and 74, and the San Diego County line. The valley lies at high elevation, roughly 3,000-6,000 feet above sea level, along the southwestern edge of the Colorado Desert and is drained by Coyote Creek. Most of the basin lies within the Cahuilla Indian Reservation. The basin is bounded on the west and east by impermeable basement rocks of the Peninsular Ranges, on the north by a surface water divide and on the south by impermeable rocks at Coyote Canyon. Average annual rainfall ranges from 14-18 inches.

Well logs have indicated that the water-bearing formations within the basin range in thickness from a few feet to 550 feet, possibly reaching 800 feet thick near the San Jacinto Fault, which lies immediately to the east. The basin is recharged by runoff that percolates through the valley's alluvium. It has been posited that groundwater levels have declined in some parts of the basin because of pumping. A water budget for the basin, however, is not available.

Several wells in the basin yield water of sodium-calcium bicarbonate character, with TDS content ranging from 147-500 mg/L, according to DWR. Nitrate concentrations greater than 44 mg/L are found in some wells drilled into thin alluvial deposits overlying bedrock. As the water levels are shallow, DWR notes that the nitrate probably comes from chemical fertilizers, animal wastes, septic tanks and decomposition of native plants. Only one well is monitored for Title 22 water quality in the basin. Most of the basin lies within the Cahuilla Indian Reservation and details of basin management are not available.

Orocopia Valley Groundwater Basin (No. 7-31): This basin covers approximately 150 square miles (96,000 acres) northeast of the Salton Sea entirely within Riverside County. It is bounded by impermeable rocks of the Cottonwood and Eagle Mountains on the north and the Orocopia and Chocolate Mountains on the south. The basin is bounded by a section of the San Andreas fault zone and semi-permeable rocks of the Mecca Hills to the west and by a bedrock constriction to the east. The western portion of the valley drains westward toward the Salton Sea, but the eastern part drains eastward into Hayfield (Dry) Lake and Chuckwalla Valley. Average annual precipitation within the Orocopia Valley ranges to 4 inches.

The water-bearing hydrogeologic units within the basin consist of alluvial and lake deposits up to 4,400 feet thick near Hayfield Lake where alluvial materials have deposited from surrounding mountains. Data shows groundwater levels ranging from about 480-500 feet below ground surface. Natural recharge is thought to occur from subsurface inflow and infiltration of runoff from the surrounding mountains and rainfall to the valley floor. MWD operates an artificial groundwater recharge site in the Hayfield Lake area near the Julian Hinds Pumping Station for the Colorado River Aqueduct. (Under the Hayfield Groundwater Storage Program, Colorado River Aqueduct water is stored for future withdrawal and delivery. As of 2003, MWD reports 73,300 AF in storage.)

In 1975, the DWR reported total storage capacity of the basin at 1,500,000 AF. A slightly later study estimated a storage capacity of about 6,250,000 AF. In 1980, the amount of groundwater in storage was reported to have been about 4,300,000 AF. Subsurface inflow from adjacent basins is estimated at about 1,600 AFY and natural recharge to the basin can be as high as 4,700 AFY. Subsurface outflow from the basin can be as high as 6,200 AFY. Inflow is considered generally equal to outflow for this basin.

Mineral analyses indicate that the groundwater in the basin ranges from sodium bicarbonate to sodium sulfate in character. Near Hayfield Lake, TDS content ranges from 254 to 665 mg/L, but most wells sampled measured at less than 300 mg/L. Data from 2000 indicate that fluoride, colorants, radon and uranium concentrations in some wells exceed drinking water standards. Active monitoring data for Title 22 water quality was reported for one well in the basin. In the eastern basin, the Hayfield Lake area near the Julian Hinds Pumping Station, is managed by MWD as a conjunctive use project site. No other public or private water agencies are noted as utilizing the basin.

Chocolate Valley Groundwater Basin (No. 7-32): This basin covers approximately 203 square miles and is bounded by the Chocolate Mountains to the south and southeast, and the Orocopia and Chuckwalla Mountains to the north. The Salton Sea forms its western boundary. Much of the southeast portion of the valley lies within the Chocolate Mountain Aerial Gunnery Range. Annual average precipitation ranges from 3-5 inches.

Surface runoff from the surrounding mountains drains to the Salton Sea via Salton Creek. Water depth for the basin was found to range between 89-99 feet below the ground surface in the 1970s. Recharge to the basin is derived chiefly from the infiltration of runoff through alluvial deposits at the base of the surrounding mountains. Groundwater moves southwest beneath Salton Creek and discharges to the Salton Sea to the west. Natural recharge to the basin is estimated at 200 AFY. The amount of water in the basin is unknown, but the total storage capacity is estimated at 1,000,000 AF.

Prominent minerals in the basin's water include sodium, chloride and sulfate. The water's quality is impaired by elevated levels of fluoride (0.6-60.0 mg/L), boron (0.08-15.8 mg/L) and TDS (460-24,500 mg/L; 3,000 mg/L average). There are no known public wells or water agencies associated with this groundwater basin.

Palo Verde Mesa Groundwater Basin (No. 7-39): This basin covers approximately 353 square miles in the Parker Valley region of eastern Riverside County. The Big Maria and Little Maria Mountains bound the basin to the north, the McCoy and Mule Mountains to the west, the Palo Verde Mesa to the east and the Palo Verde

Mountains to the south. The valley is drained by McCoy Wash, which empties into the Colorado River to the southeast. Average annual precipitation ranges to 6 inches.

Recharge to the basin is assumed to be chiefly from percolation of runoff from the surrounding mountains, with percolation of precipitation on the valley floor and subsurface inflow possibly providing additional sources of recharge. Natural recharge to the basin is estimated at about 800 AFY, plus 400 AFY of recharge occurring from underflow from Chuckwalla Valley. The total storage capacity of the basin is estimated at 6,840,000 AF; the amount currently in storage is unknown.

Analysis of water from 11 public supply wells in the basin show TDS content ranges from 90-1,790 mg/L, with an average of 1,089 mg/L. The groundwater tends to be calcium-sodium chloride or calcium-sodium sulfate in nature. The water's quality is impaired by elevated levels of arsenic, selenium, fluoride, chloride, boron, sulfate and TDS concentrations. (No concentration values provided.) There are 20 USGS wells for groundwater monitoring and 13 known wells for water supply (presumably potable) use in this groundwater basin.

4. South Coast Hydrologic Region – Groundwater Basins

DWR Bulletin 118 reports that the South Coast Hydrologic Region covers approximately 6.78 million acres (10,600 square miles) of the Southern California watershed that drains to the Pacific Ocean. It is bounded on the west by the Pacific Ocean and the watershed divides near the Ventura-Santa Barbara County line. The northern boundary is formed by the Transverse Ranges of the San Gabriel and San Bernardino mountains. The eastern boundary lies along the crest of the San Jacinto Mountains and low-lying hills of the Peninsular Range that abut the Colorado River Hydrologic Region and the southern boundary is Mexico. The region spans all of Orange County, most of San Diego and Los Angeles Counties, parts of Riverside, San Bernardino and Ventura Counties. It also includes a small amount of Kern and Santa Barbara Counties. The Santa Ana River subregion, regulated by the Santa Ana Regional Water Quality Control Board (RWQCB), is denoted by basins beginning with an "8." Likewise, the San Diego subregion, denoted by a "9," is regulated by the San Diego RWQCB. The Los Angeles subregion is denoted by a "4."

Per the 2000 U.S. Census, roughly 17 million people, nearly half the state's population, live within the South Coast Hydrologic Region. The region's surface area, however, only covers roughly 7% of the state. Thus, this region has the highest population density of any of the state's hydrologic regions. Overall, 56 delineated groundwater basins underlie about 2.27 million acres (3,530 square miles), or about 33%, of the South Coast Hydrologic Region. Of these, 21 are in subregion 4 (Los Angeles), eight are in subregion 8 (Santa Ana) and 27 are in subregion 9 (San Diego). Groundwater basins underlie 979,000 acres (1,520 square miles), or about 54%, of the Santa Ana subregion, including the Upper Santa Ana Valley Groundwater Basin, which is further divided into nine subbasins. The San Diego subregion overlies 27 groundwater basins and encompasses most of San Diego County, with additional parts of Orange and Riverside Counties. Groundwater basins underlie about 277,000 acres (433 square miles) or about 11% of the surface of the San Diego subregion.

With its long history of settlement, groundwater has been used in the South Coast region for well over 100 years. High demand and use of groundwater in Southern California has given rise to many disputes over management and pumping rights, with the resolution of these cases playing a large role in the establishment and clarification of water rights law in California. Raymond Groundwater Basin, located in this hydrologic region, was the first adjudicated basin in the state. Of the 16 adjudicated basins in California, 11 are in the South Coast region.

Groundwater provides about 23% of water demand in normal years and about 29% in drought years. Groundwater is found in unconfined alluvial aquifers in most of the basins of the San Diego subregion and the inland basins of the Santa Ana and Los Angeles subregions. In some larger basins, typified by those underlying

the coastal plain, groundwater occurs in multiple aquifers separated by geological barriers that create confined groundwater conditions. Basins range in depth from tens or hundreds of feet in smaller basins, to thousands of feet in larger basins. The thickness of aquifers varies from tens to hundreds of feet. Well yields vary depending on aquifer characteristics, well location, size and use. Some aquifers are capable of yielding thousands of gallons per minute to municipal wells.

Conjunctive use of surface and groundwater is a long-standing practice in the region. At present, much of the potable water used in Southern California is imported from the Colorado River and from sources in the eastern Sierra and Northern California via the State Water Project. Several reservoirs are operated primarily for storing surface water for domestic and irrigation use, but groundwater basins are also recharged from the outflow of some reservoirs. The concept is to maintain streamflow over a longer period of time than would occur without regulated flow and thus provide for increased recharge of groundwater basins. Most of the larger basins in this hydrological region are highly managed, with many conjunctive use projects being developed to optimize water supply.

The coastal basins in this hydrologic region are prone to intrusion of seawater. Seawater intrusion barriers are maintained along the Los Angeles and Orange County sections of the coastal plain. In Orange County, recycled water is injected into the ground to form a mound of groundwater between the coast and the main groundwater basin. In Los Angeles County, imported and recycled water is injected to maintain a seawater intrusion barrier.

Table 4.19-N: Well Data Summary for South Coast Hydrologic Region

Well Criteria	# Wells	%
Public Supply Wells Sampled	**2,342**	
Wells Meeting Primary MCL Standards	**1,360**	**58%**
Wells With Constituents Above Primary MCL	**982**	**42%**
Constituents Detected		
Inorganic	118	12%
Radiological	118	12%
Nitrates	373	38%
VOCs / SVOCs	304	31%
Pesticides	69	7%
Most Frequently Occurring Contaminants	**# of Occurrences**	
Primary Inorganics	**81**	
Fluoride	56	
Thallium	13	
Aluminum	12	
Secondary Inorganics	**708**	
Iron	337	
Manganese	335	
Total Dissolved Solids (TDS)	36	
Radiological Constituents	**162**	
Gross Alpha	104	
Uranium	40	
Radium-226	9	
Radium-228	9	
Nitrates	**557**	
Nitrate (as NO_3)	364	
Nitrate + Nitrite	179	
Nitrate Nitrogen (NO_3-N)	14	
Pesticides	**68**	
DBCP	61	
Di(2-Ethylhexyl)phthalate	5	

Well Criteria	# Wells	%
Heptachlor-2 EDB	2	
Volatile Organic Compounds (VOCs/SVOCs)	**437**	
TCE	196	
PCE	152	
1,2-Dichloroethane	89	

Source: DWR, Bulletin 118, Update 2003.

The chemical character of groundwater in the South Coast region is mainly calcium sulfate and calcium bicarbonate. Nitrate content is elevated in some parts of the subregion. Volatile organic compounds (VOCs) have created groundwater impairments in some of the industrialized portions of the region, particularly the San Gabriel Valley and San Fernando Valley groundwater basins.

The main constituents in the contamination plumes are trichloroethylene (TCE) and tetrachloroethylene (PCE). Some of the locations have been declared federal Superfund sites. Contamination plumes containing high concentrations of TCE and PCE also occur in the Bunker Hill Subbasin of the Upper Santa Ana Valley Groundwater Basin. Some of these plumes are also designated as Superfund sites. Perchlorate is emerging as an important contaminant in several areas in the South Coast region.

Local impairments from excess nitrate or VOCs have been recognized. Groundwater and surface water in the Chino Subbasin of the Santa Ana River Valley Groundwater Basin have elevated nitrate concentrations, partly derived from the area's large dairy industry. In Orange County, water from the Santa Ana River provides a large part of the groundwater replenishment. Wetlands maintained along the Santa Ana River near the boundary of the Upper Santa Ana River and Orange County groundwater basins provide effective removal of nitrate from surface water, while maintaining critical habitat for endangered species.

Groundwater in basins of the San Diego subregion is mainly calcium, sodium, bicarbonate and sulfate based, with local impairments by nitrate, sulfate and TDS. Camp Pendleton Marine Base, in the northwestern part of this subregion, is on the EPA National Priorities List for soil and groundwater contamination by many constituents. From 1994 through 2000, a total of 2,342 public supply water wells were sampled in 47 of the 73 basins and subbasins in the South Coast region. Samples indicated that 1,360 wells (58%) met the state primary MCLs for drinking water. About 42% (982 wells) had constituents that exceeded one or more MCL.

The following basins and subbasins occur within the South Coast Hydrologic Region and underlie areas potentially subject to future development as a result of the proposed project. For a summary of the entire region's groundwater basin data, refer to Table 41 from DWR Bulletin 118, 2003 Update.

Upper Santa Ana Valley Groundwater Basin (No. 8-2): The Upper Santa Ana Valley Groundwater Basin encompasses nine distinct subbasins located along the Santa Ana River running through the urbanized portions of northwestern Riverside County and southwestern San Bernardino County. In total, the basin encompasses nearly 487,000 acres (over 760 square miles) and encompasses the headwaters of the Santa Ana River, which flows south and west into Orange County and ultimately empties to the Pacific Ocean.

Chino Subbasin (No. 8.2-.01): The Chino Subbasin is the largest of the nine within the Upper Santa Ana Valley Basin. It underlies 240 square miles (154,000 acres) mostly in San Bernardino County, plus the northwestern-most corner of Riverside County (generally Eastvale). The subbasin is bounded by the Rialto-Colton Fault on the east and the Jurupa Mountains to the southeast. Puente Hills and the Chino Fault form its southern boundary and the San Bargirel Mountains and Cucamonga Fault bound the subbasin to the north. San Antonio and

Cucamonga creeks drain the surface of the subbasin southward to join the Santa Ana River upstream of the Prado Basin. Showing a coastal influence, annual precipitation ranges from 13-29 inches, with 17 inches average.

The water-bearing geology of the subbasin consists mainly of alluvial fan-shaped deposits ranging up to 150 feet thick near the mouths of the canyons from which the soils originated. In other portions of the subbasin, alluvium is up to 600-700 feet thick. Three major fault systems, including the Rialto-Colton and Cucamonga faults, bound the subbasin in places forming discontinuities in groundwater elevations.

Groundwater recharge to the subbasin occurs by direct infiltration or precipitation on the subbasin floor, by infiltration of surface flow and by underflow of groundwater from adjacent basins. There are also five recharge facilities located within the subbasin along Deer Creek, Day Creek, East Etiwanda, San Sevaine and Victoria. By 1980, groundwater levels within the subbasin had declined about 80 feet from historical high marks in the 1920s. With initiation of the recharge program, however, by 2000 water levels had recovered about 20 feet.

DWR estimates total storage within the subbasin at 18.3 million AF. Water in storage was estimated to be 8.600 million 000 AF in 1982; approximately 5.3 million AF in 1997; and, roughly 5.325 million AF in 2000. The Chino Subbasin was adjudicated in 1978 and pumping within the subbasin is managed by the Chino Basin Watermaster. Total groundwater production in the Chino Subbasin was an estimated 145,700 AF in 1998; 162,300 AF in 1999; 178,800 AF in 2000; and, 161,500 AF in 2001.

Water within the subbasin is predominantly calcium-sodium bicarbonate. Its TDS content ranged from 200-600 mg/L, with an average TDS of 484 mg/L. Title 22 (drinking water) monitoring indicated TDS concentrations ranging from 146-1,710 mg/L, with an average of 359 mg/L. The most serious water pollution problems continue to be high concentrations of dissolved solids and nitrate-nitrogen within the subbasin. Data reported by the DWR indicates that sampling of 149-164 wells found 17 wells with concentrations above an MCL for primary inorganics; 31 for secondary inorganics; 5 for radiological constituents; 73 for nitrates; 6 for pesticides and 10 for VOCs and SVOCs between 1994 and 2000. According to the DWR, the subbasin's elevated nitrate concentrations are generally associated with the area's large dairy industry.

A total of 12 wells are used for groundwater monitoring and 8 wells for water quality monitoring by the USGS and cooperators. Title 22 water quality monitoring is performed on 187 wells. As mentioned previously, the Chino Subbasin was adjudicated in 1978, with a Watermaster responsible for its ongoing groundwater management pursuant to the Optimum Basin Management Program. The Chino Basin Municipal Water District also utilized the subbasin.

Riverside-Arlington Subbasin (No. 8-2.03): This subbasin underlies part of the Santa Ana River Valley in northwest Riverside County and southwest San Bernardino County. It is bounded by the Box Springs Mountains to the southeast, Arlington Mountain to the south, La Sierra Heights and Mount Rubidoux to the northwest and the Jurupa Mountains to the north. It is separated from the adjacent Rialto-Colton Subbasin by the Rialto-Colton Fault. The Santa Ana River flows over the northern portion of the subbasin. Annual average precipitation is approximately 10-14 inches.

The Riverside-Arlington Subbasin is replenished by infiltration from Santa Ana River flow, underflow past the Rialto-Colton Fault, intermittent underflow from the Chino Subbasin, return irrigation flow and deep percolation of precipitation. Groundwater moves northwest near Arlington, then flows southwest to pass through Arlington Gap and into the Temescal Subbasin to the south.

The total storage capacity is estimated at 243,000 AF; 207,000 AF for the Riverside portion of the subbasin and 36,000 AF for the Arlington portion. The amount of groundwater stored in the subbasin is not known.

Municipal water pumping from the Riverside portion of the subbasin was about 10,100 AF in fiscal year 2000-2001, according to the City of Riverside's Public Utilities Department.

Water within the subbasin is predominantly calcium-sodium bicarbonate. Water sampled from the basin's public supply wells had a TDS content ranging from 210-889 mg/L, with an average TDS of 463 mg/L. Information on specific components and concentrations of water pollutants causing impairment is not available. However, data reported by the DWR indicates that of 19-50 wells samples, two showed concentrations above an MCL for primary inorganics; three for secondary inorganics; 11 for radiological constituents; 21 for nitrates; 19 for pesticides and eight for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).

There are 11 USGS wells for groundwater monitoring and three USGS wells for water quality monitoring, plus an additional 43 wells for water supplies. The subbasin is utilized by the Riverside Public Utilities Department and a portion of the basin is managed by the City of Riverside under an AB 3030 (groundwater management) plan.

San Timoteo Subbasin (No. 8-2.08): The approximately 114-square mile (73,100 acre) San Timoteo Subbasin underlies Cherry Valley and the City of Beaumont in northwestern Riverside County, as well as a portion of southwestern San Bernardino County. The subbasin is bounded to the north and northeast by the Banning Fault and the San Bernardino Mountains, Crafton and Yucaipa Hills, on the south by the San Jacinto Fault and on the west by the San Jacinto Mountains. To the east lies a topographic drainage which demarcates the divide between the South Coast and Colorado River hydrologic regions. The subbasin's surface is drained by Little San Gorgonio Creek and San Timoteo Canyon to the Santa Ana River. Average annual precipitation ranges from 12-14 inches in the western part of the subbasin to 16-18 inches in the eastern part.

Alluvium of unconsolidated clay, silt, sand and gravel for the principal water-bearing geology in this subbasin, with the alluvium being thickest near Beaumont. In some parts of the subbasin, hydrogeological formations are up to 1,500-2,000 feet thick. However, in the central part of the subbasin, water bearing gravels occur at depths of only 700-1,000 feet. Across the subbasin, water levels drop where the presence of various faults disrupt groundwater movement.

Groundwater is replenished by subsurface inflow and percolation of precipitation, runoff and imported water. Runoff and imported water are delivered to streambeds and spreading grounds for percolation. Groundwater flows towards San Timoteo Canyon, then northwesterly along the canyon to Bunker Hill Subbasin. A study of change in water levels during 1933 through 1960 revealed distinctive hydrograph character for wells in alluvial deposits in this subbasin. Hydrographs from wells in San Timoteo Canyon showed a flat character with low yearly fluctuations, those from the northeastern part of the subbasin near Oak Glen showed a flat character with high yearly fluctuations and those from Cherry Valley showed a continual downward trend.

The DWR estimates the total storage capacity of the subbasin's alluvial deposits to be about 2.01 million AF, with the amount of groundwater in storage in 1960 in the alluvial deposits to have been about 1.57 million AF. Deep percolation from irrigation is estimated to be 38,000 AF, from wastewater about 14,000 AF and from precipitation about 16,000 AF. The total subsurface inflow averages about 23,400 AFY. Of this, 21,900 AFY is estimated to come from the San Bernardino and San Gabriel Mountains. Subsurface outflow to the Bunker Hill Subbasin during 1927 through 1967 is estimated to have ranged from 5,350 to 8,150 AFY, with an average of 6,400 AFY.

The subbasin's groundwater tends to be either sodium bicarbonate or calcium bicarbonate in nature, with the calcium form predominant in the younger alluvium and sodium in older deposits. Water sampled from 24 public supply wells have an average TDS content of approximately 253 mg/L, with a range of 170-340 mg/L. As with much of the Upper Santa Ana Valley, high nitrate and salinity levels continue to be of concern. Of the 26-28

wells sampled, only one showed concentrations above MCL for secondary inorganics. No MCL was exceeded for primary inorganics, radiological constituents, nitrates, pesticides, VOCs or SVOCs.

The subbasin has a reported 67 wells used by the USGS for water level monitoring and 12 wells used by the USGS for miscellaneous water quality purposes. A total of 36 wells are monitored for water quality pursuant to Title 22. The subbasin is utilized by the San Bernardino Valley Municipal Water District, San Bernardino Valley Water Conservation District, the City of San Bernardino Water Department and the San Bernardino County Flood Control District, but reportedly no Riverside County agencies. The subbasin is not adjudicated and not reported as being under any groundwater management plans.

Elsinore Groundwater Basin (No. 8-4): This basin covers roughly 40 square miles (25,700 acres) of the Elsinore Valley in western Riverside County. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains along the Elsinore fault zone. The basin adjoins the Temecula Valley groundwater basin to the southeast and the Temescal subbasin of the Upper Santa Ana River Valley groundwater basin at a constriction in Temescal Wash to the northwest. It is also bounded on the northeast along the Glen Ivy Fault. Lake Elsinore lies within a closed basin formed between strands of the active Elsinore fault zone. Average annual precipitation ranges from 12-14 inches.

The Elsinore Groundwater Basin contains alluvial fan, floodplain and lacustrine water-bearing deposits underlain by alluvium. The maximum thickness of sedimentary deposits reaches 2,300 feet beneath Lake Elsinore. Alluvial fan deposits of gravel, sand, silt and clay are found near the western and northeastern edges of the basin emanating from the adjacent mountains. The interior of the valley contains floodplain deposits that reach a thickness of about 200 feet. In Lake Elsinore's inundation zone, lacustrine deposits reach 800 feet in thickness. Elsewhere in the basin, deposits reach upwards of 2,200 feet in depth.

Groundwater movement in the basin is strongly influenced by faults dissecting the basin's alluvial and lacustrine sediments, with differences in groundwater elevation found across the Wildomar, Willard and Glen Ivy faults. As many as eight separate fault-bounded blocks occur, with little apparent groundwater cross-movement within the basin. The principal recharge of the basin is from infiltration of stream flow through alluvial fan deposits near the edges of the basin and through the gravel deposits along the course of the San Jacinto River. Other contributing sources include infiltration from unlined channels overlying the basin, underflow from saturated alluvium and fractures within the surrounding bedrock mountains and hills, and spreading of water in recharge basins.

The DWR notes that groundwater levels within the basin declined more than 100 feet between 1927 and 1950. A hydrograph from one well shows that water level declined about 110 feet in the southern part of the basin from 1967 through 1985. However, a hydrograph from a well in the northern part of the basin shows a rise in water level of about 65 feet from 1963 to 1981. Under natural conditions, groundwater should flow generally toward Lake Elsinore. However, because the faults cutting the sediments impede groundwater movement, groundwater flow is dominantly contained within fault blocks in the basin.

The total storage capacity of the basin is estimated to be between 1.84 million AF (per the DWR, 1981) and 1.4 million AF (per the EVMWD, 2001). Groundwater in storage (as of the late 1960s-early 1970s) was estimated at 1 million AF. EVMWD estimated approximately 245,000 AF of available dry storage existed in 1999, suggesting that about 1.155 million AF of groundwater in storage was still available. Mean subsurface inflow was estimated at about 800 AFY and, as of 1978, the total annual extraction was roughly 8,100 AF.

The groundwater northeast of Lake Elsinore is calcium sulfate character, whereas groundwater southeast of the lake is calcium bicarbonate and sodium sulfate-bicarbonate character in the central part of the basin. Springs and wells near the City of Elsinore yield water of sodium sulfate character. The range of TDS content for 17 public

wells was 290-680 mg/L, with an average TDS content of 460 mg/L. Some wells also were found to exceed recommended levels for fluoride. Of 18-20 wells samples, one was found to exceed the MCL for primary inorganics and one for VOCs and SVOCs. Secondary inorganics were exceeded for four wells.

The USGS reports using one well for groundwater level monitoring and one for water quality. A total of 18 wells are monitored for Title 22 water quality by DHS and cooperators. The basin is utilized by the Elsinore Valley Municipal Water District (EVMWD), which has proposed a groundwater management plan for the basin.

San Jacinto Groundwater Basin (No. 8-5): The largest basin in western Riverside County, the San Jacinto Basin covers 293 square miles (188,000 acres) in the wide central valley west of the San Jacinto Mountains. The basin is bounded by the San Jacinto Mountains on the east, the San Timoteo Badlands on the northeast, the Box Mountains on the north, the Santa Rosa Hills and Bell Mountain on the south and unnamed hills on the west. Lake Perris is located in the eastern part of Perris Valley and the Diamond Valley Reservoir is located at the edge of the basin to the south. The area's valleys are drained by the San Jacinto River and its tributaries. Average annual precipitation ranges from 10 to 18 inches.

The basin contains sediments that have alluvium-filled valleys and underlying canyons incised into the basement rock. Maximum depths of valley fill reach about 900 feet in the western and northern parts of the basin, but may exceed 5,000 feet in the eastern part of the basin between the Casa Loma and Claremont faults. Confined groundwater is found in the eastern part of the basin between the Casa Loma and Claremont faults, and wells in this basin produce 200-2,600 gpm. The San Jacinto fault zone cuts through the eastern part of the basin, forming five northwest-trending fault segments which act as barriers to groundwater movement.

Natural recharge to the basin is primarily from percolation of flow in the San Jacinto River and its tributary streams; less recharge is from infiltration of rainfall on the valley floor. The primary recharge area for the confined aquifers is found where the San Jacinto River and Bautista Creek enter the San Jacinto Valley. Natural recharge is augmented by spreading of imported SWP water and reclaimed water through infiltration ponds in the upper reaches of the San Jacinto River. Percolation of water stored in Lake Perris has been an additional source of recharge since construction of the lake in the 1970s. Reclaimed water also percolates through several storage ponds distributed throughout the valley. Artificial recharge can exceed natural recharge, particularly in years with low precipitation.

Prior to the extraction of groundwater from the basin, groundwater flow was generally toward the course of the San Jacinto River and westward out of the basin. High extraction rates, however, have produced groundwater depressions and locally reversed the historical flow pattern. During the 1960s, groundwater levels in the western and central parts of the basin declined; whereas, in the south-central part of the basin, they were moderately stable. During the 1970s through the 1990s, groundwater levels declined about 20-40 feet in the northern and southeastern parts of the basin, but were relatively stable in the southern part of the basin. During the 1970s through the 1980s, groundwater levels rose 80-200 feet in the western part of the basin because of infiltration from Lake Perris. In the early 2000s, groundwater levels generally rose in the central part of the basin and declined in the northeastern and southern parts of the basin.

The estimated groundwater storage capacity of the San Jacinto Basin is 3.07 million AF and, in 1975, the calculated groundwater in storage was 2.7 million AF. EMWD gathers and compiles groundwater production and artificial recharge amounts for the basin and reports annually. Groundwater production in the portion of the basin managed under the West San Jacinto Groundwater Management Plan is estimated at 18,880 AF for 2001 and 20,058 AF for 2002. Estimates of extraction for the entire basin between 1984-1999 range from 60,400 AFY to 100,100 AFY, with an average of about 78,700 AFY. Between 1,000 and 1,300 AF of reclaimed water are recharged each year. About 5,800 AF of SWP water were recharged in 2002, but none was recharged in 2001.

Infiltration of San Jacinto River flow ranged between 4,500 and 191,600 AF from 1984 to 2000, with an average of 46,900 AFY.

Historically, the basin's groundwater was of good quality for domestic, irrigation and industrial purposes. The groundwater was typically sodium bicarbonate, calcium bicarbonate or sodium chloride in character, or combinations thereof. Historically, groundwater in the basin typically had a TDS content less than 1,000 mg/L. In 2002, TDS content ranged from 230-12,580 mg/L and the maximum TDS content exceeded 1,000 mg/L in most parts of the basin. Data from 51 public supply wells show TDS content in the basin ranges from 160 to 1,390 mg/L and averages about 463 mg/L.

Historically, high levels of boron and fluoride were found in the central and northwest parts of the basin, and high nitrate-nitrogen concentrations were found in the southeast part of the basin. In 2002, groundwater exceeding a nitrate-nitrogen concentration of 10 mg/L was found in wells throughout most of the basin. Nitrate-nitrogen concentrations as high as 40 mg/L were found in the northern part of the basin in the 1990s and as high as 28 mg/L in the southern part of the basin in 2002. In 2002, TDS content was measured as high as 12,580 mg/L in the basin and wells with TDS content exceeding 1,000 mg/L were found throughout most of the basin. DWR notes that pumping is causing groundwater of high TDS content to move from the western part of the basin into groundwater of lower TDS content in the central part of the basin. However, remediation efforts have helped slow the migration of this plume.

Of 54-56 wells sampled, concentrations above MCL were found for primary inorganics in three wells, secondary inorganics in 15 wells, radiological constituents in two wells, nitrates in 12 wells and pesticides in one well. EMWD monitors 169 wells for groundwater levels and 113 for water quality. A total of 56 wells are monitored for Title 22 water quality. In addition to EMWD, the basin is used by the Lake Hemet Municipal Water District. Most of the basin is managed under the jurisdiction of the West San Jacinto Groundwater Basin Management Plan, an AB 3030 plan adopted in 1995.

Temecula Valley Groundwater Basin (No. 9-5): This basin covers 137 square miles (87,800 acres) of southwestern Riverside County and northwestern San Diego County. The valleys of Murrieta, Temecula, Pauba, Long and Lancaster are the largest of the overlying valleys. The basin is bounded by the Peninsular Ranges and the overlying valleys are drained mainly by Wilson, Temecula, Murrieta, Warm Springs and Pechanga creeks to the Santa Margarita River, which flows west out of the Temecula Valley. The Pechanga Indian Reservation overlies some of the southwestern part of the basin. Average annual precipitation ranges from 7-15 inches.

Alluvium reaching more than 2,500 feet thick is the main water-bearing material of this basin. Well yields generally range to 300 gpm in the northwestern part of the basin, but reach 1,750 gpm for wells in Pauba Valley. The Lancaster, Aguanga and Agua Caliente faults, as well as several strands of the Elsinore fault zone, cross the basin and may affect groundwater movement. The Wildomar Fault, in particular, forms a groundwater barrier that produces differences in water level and pressure in the northwestern part of the basin. Murrieta Hot Springs lies along an unnamed fault indicating that the fault affects subsurface flow.

Natural recharge of the alluvium is from direct precipitation and percolation in the Warm Springs, Tucalota, Santa Gertrudis, Murrieta and Pechanga creeks and the Temecula River. Groundwater flows southeastward under Murrieta and Temecula valleys and southwestward beneath Pauba Valley to the southwestern part of the basin. In the central part of the basin, the water level in one well rose about 12 feet between 1990 and 1994. In the southwestern part of the basin, the water level in one well declined about 60 feet between 1980 and 1992, recovered about 50 feet in 1993 and then declined another 15 feet between 1994 and 2001. The hydrograph of another well in the southwestern part of the basin indicates large seasonal variations in water levels. The total

groundwater storage capacity of the basin is estimated at 253,000 AF. The amount actually stored in the basin is unknown. Groundwater extraction was about 13,000 AF in 1953.

The groundwater in this basin is largely sodium bicarbonate in character, though sodium-calcium bicarbonate, sodium-calcium sulfate, calcium bicarbonate and sodium chloride waters also are present. TDS concentration ranged from 220-984 mg/L in 1956. Water from 50 public supply wells ranged from 240-1,500 mg/L and averaged 476 mg/L. Groundwater in this basin is largely suitable for domestic and irrigation uses. The groundwater is rated inferior for domestic use, however, locally near Murrieta and Murrieta Hot Springs because of high nitrate or fluoride content. It is rated as marginal to inferior for irrigation use locally in the Pauba and Wilson Creek valleys and near Murrieta Hot Springs, because of chloride content and percent sodium. Sulfate, chloride, magnesium and nitrate concentrations are locally high for domestic use; TDS content is locally high for domestic and irrigation use.

A number of wells are monitored groundwater levels monthly by various agencies: 115 wells by RCWD, 17 wells by USGS, five by Murrieta County Water District and three by EMWD. The USGS also monitors water quality for four wells and 67 wells are monitored for water quality pursuant to Title 22. Public water agencies using the basin include EMWD, EVMWD and RCWD. Murrieta County Water District also developed a Watershed Management Plan under AB 3030.

Cahuilla Valley Groundwater Basin (No. 9-6): This small basin covers roughly 28 miles (18,200 acres) underlying the Cahuilla and Anza valleys in southern Riverside County. This inland basin lies within the Peninsular Ranges and abuts the boundary with the Colorado River Hydrologic Region. It is bounded by the Peninsular Ranges and its northeastern boundary is the San Jacinto fault zone. Cahuilla Creek drains surface water westward toward the Pacific Ocean. Average annual precipitation ranges from 7-15 inches.

The water-bearing units within the basin are alluvium, older alluvium and weathered residuum (soil formed from crumbled/eroded rock). The maximum thickness of the alluvium is estimated to be from 550 feet to less than 200 feet. Well yields range from less than 25 gpm to 500 gpm. Splays of the San Jacinto fault zone cut through and abut the eastern edge of the basin and probably inhibits subsurface flow. Water level contours are offset by as much as 140 feet along a north-trending structure along the west edge of Anza Valley, implying that a fault restricts groundwater flow at that location. Water level contours indicate that movement of groundwater is generally towards Cahuilla Creek, then west, following the course of the creek. A comparison of water level contours for 1950 and 1973 indicated that a widespread pumping depression developed by 1973 in Anza Valley. Water levels were depressed as far as 70 feet below their 1950 level. The total storage capacity of the basin is estimated at about 75,000 AF. The total amount of groundwater in storage is unknown nor is water budget information available, according to the DWR.

The character of groundwater in this basin ranges from a sodium-calcium bicarbonate to sodium chloride. TDS concentrations ranged from 304-969 mg/L. Locally, sulfates and nitrates are high for domestic use, with nitrate concentrations reaching as much as 128 mg/L. The private Anza Mutual Water Company monitors groundwater levels monthly in two wells and one well is monitored for water quality per Title 22 standards. The basin is also used by the Cahuilla Indian Reservation.

C. Other Local Water Resources in Riverside County

In addition to imported water and locally produced groundwater, there are a number of additional avenues local water agencies may utilize to increase their water supply and improve the quality of existing supplies. Key sources of additional water include recycled and reclaimed water, stormwater capture and management, as well as

graywater and other 'new' sources. Each of these water types are described generally, below. In the water district accounts, which follow, further details are provided on the specifics utilized by the individual agencies.

Programs to help bridge the gap between supply and demand include urban conservation programs, agricultural efficient water management practices, reclamation, recycling, desalination of brackish groundwater and seawater, groundwater recharge with reclaimed or raw surplus water, and transfers of water from agricultural to urban uses.

1. Surface Waters

As seen above, groundwater basins tend to occur in valleys as a result of the geology of the surrounding bedrock and mountains. Surface waters follow similar geological features to form watersheds. But since gravity dictates where these waters flow, topography also plays an important part in defining watersheds. The hydrology of Riverside County on a regional basis was discussed previously in Section 4.19.2 (Hydrology). This section specifically summarizes those surface waters that are used to supply water locally to various agencies within Riverside County.

Within the South Coast Hydrologic Region, the Santa Ana, San Jacinto and Santa Margarita rivers, and their various tributaries, are the major waterways within Riverside County. In terms of surface water supplies, the San Jacinto River is used by the Lake Hemet Municipal Water District (LHMWD). According to the 2005 LAFCO report, LHMWD maintains Lake Hemet, which releases into the San Jacinto River, as a water reservoir and recreational facility. The San Jacinto River supplies an average of 3,600 AFY to LHMWD, approximately 20% of the district's total water supply. LAFCO states that most of the surface water is used for agricultural purposes, but a portion is conveyed to LHMWD's Eggen Water Treatment Plant for treatment prior to domestic use.

Within the Upper Santa Margarita watershed, the Seven Oaks reservoir delivers surface water to various treatment plants and to spreading ponds for groundwater recharge, including: potable at Canyon Lake; non-potable at Lee Lake, Temescal Wash, Horsethief Canyon and Indian Canyon. Major surface water sources in the watershed include MWD's Diamond Valley Lake and Lake Skinner reservoirs.

Surface waters and groundwater supporting surface water in the Santa Margarita watershed have been under some form of court jurisdiction since 1928. A Watermaster assigned by the U.S. District Court for the Southern District of California oversees all water uses within the Santa Margarita watershed, although specific water rights in the watershed have not been adjudicated. However, a Stipulated Judgment assigns two-thirds of all natural waters to the United States of America (Camp Pendleton) and the remaining one-third to Rancho California Water District (RCWD). Rights to utilize the water and groundwater stored in Vail Lake are defined in the 1940 Stipulated Judgment in the case of Santa Margarita versus Vail and Appropriations Permit 7032 issued by the State Water Resources Control Board (SWRCB). RCWD stores local runoff in Vail Lake, which was created in 1948 through construction of Vail Dam on Temecula Creek. RCWD has a surface water storage permit in Vail Lake for up to 40,000 AF from November 1 to April 30. During these months, RCWD releases available water from Vail Lake to the Valle de los Caballos (VDC) spreading basins, about 1.5 miles downstream, for groundwater recharge. From May through October, existing state permits prohibit storage and require inflow to pass through Vail Lake to Temecula Creek and ultimately to the lower watershed.

Upstream on the Santa Ana River, in San Bernardino County, water from the Seven Oaks dam (reservoir) is also used by WMWD and SBVMWD. LAFCO reports that the City of Riverside also has water rights to this body but is not using them at present. Lastly, the Yucaipa Valley Water District (YVWD), which serves portions of Riverside County in addition to San Bernardino County areas, also uses surface water from both Wildwood Canyon and Oak Glen. The Beaumont-Cherry Valley Water District also has diversion rights to Little San Gorgonio Creek.

Two other man-made surface water sources are also used to supply local water in western Riverside County. Canyon Lake, more specifically Railroad Canyon Reservoir, impounds local runoff from the 750-square mile San Jacinto River watershed and is used by Elsinore Valley Municipal Water District (EVMWD). A second man-made reservoir, Corona (Lee) Lake, along Temescal Wash, also provides surface water to EVMWD as part of the 6,000-7,000 AF produced annually in the region.

Within the Colorado River Hydrologic Region, the Whitewater River and its tributaries, in addition to the Colorado River, are the major waterways within eastern Riverside County. The Whitewater River is a minor (less than 2,000 AFY) source of surface water for the Desert Water Agency (DWA). No other agencies take surface waters directly within the Coachella Valley or the rest of eastern Riverside County. Surface water from the Whitewater River is also provided to the City of Banning through the Banning Bench Mutual Water Company according to LAFCO.

In the San Jacinto Mountains that lie between eastern and western Riverside County, two of the four water agencies that serve the area access surface waters. (None of these four import water.) According to LAFCO, the Fern Valley Water District (FVWD) uses surface water diversions from Strawberry and Tahquitz creeks, supplemented by local groundwater, as its retail water source to serve its 1,200 connections. FVWD is allowed to divert 0.48 cfs from the creeks for use within 30 days and 30 AFY for seasonal storage. The Idyllwild Water District (IWD) also diverts surface water from Strawberry Creek (at Foster Lake) for use in groundwater recharge according to LAFCO. IWD is permitted to store 40 AFY on Lilly Creek and has the right to use water from the creek for domestic, recreational and fire protection uses. IWD may also store surface runoff from the watershed in Foster Lake during the fall, winter and spring seasons according to LAFCO.

2. Recycled Water

Recycled water is water that as a result of tertiary treatment of domestic wastewater by a public agency is suitable for a direct beneficial use or a controlled use that would not otherwise occur. (*Note:* As provided in CWC Section 26, 'recycled water' or 'reclaimed water' has the same meaning the definition of recycled water given in CWC Section 13050(n)). The level of treatment and quality of the reclaimed water shall be approved by the public health authority having jurisdiction. DWR and the local water agencies serving the area covered by GPA No. 960 support the implementation of a variety of water resource programs, including reclaimed and recycled water programs. The Reclamation, Recycling and Water Conservation Act of 1996 authorized federal cost-sharing in wastewater recycling projects and includes funding for desalination of sea water and groundwater, reclaimed water treatment and reuse.

State Water Resources Control Board policy encourages substitution of recycled water in place of potable water where possible. There is a set of strict regulations that govern its uses which are designed to protect the existing and proposed designated beneficial uses of the receiving ground or surface water. The Santa Ana River, San Diego and Colorado River RWQCBs have Water Quality Control Plans for their respective watersheds. They contain water quality objectives for the groundwater basins and for the surface waters. Any use of recycled water which results in planned recharge of an aquifer or discharge into a surface water must meet the water quality standards set forth by these objectives and/or have prior approval from the RWQCB. See Section 4.19.5 for discussion of these water quality control plans.

Recycled water can be used to recharge aquifers for future potable water supply use and also used to stop intruding higher TDS water from contaminating a groundwater basin as in the prevention of salt water intrusion along the coast or the boundary between a basin of poor quality and a basin of good quality. The TDS of recycled water is directly related to the TDS of the domestic water supply. Recycled water typically has mineral

salt (TDS) levels approximately 200 to 250 mg/L higher than the potable source water. In order to have high-quality recycled water, high quality source water or desalination is required.

As described in MWD's 2010 RUWMP, local water recycling projects involve further treatment of secondary-treated wastewater that is currently discharged to the ocean or streams and lands and also its direct non-potable use for areas, such as landscape and agricultural irrigation, commercial and industrial purposes, as well as for indirect potable uses, such as groundwater recharge and surface water augmentation. Many local agencies collect and treat municipal wastewater, including EMWD, CVWD and WMWD. MWD's service area, which covers much of Southern California (see Figure 4.19.18), uses about 308,000 AFY of recycled water; 132,000 AFY for irrigation, 15,000 AFY for industrial processes and 118,000 for groundwater recharge operations. However, existing water quality and regulatory issues limit groundwater recharge using recycled water, as does the need for high-quality potable water for blending in order to meet specified water quality targets. Recycled water use is growing rapidly in Riverside County and elsewhere in MWD's service area. However, further expansion depends on progress in research, regulatory change, public acceptance and financing of local projects.

CVWD and others also utilize recycled wastewater and recognize its significant potential as a local resource that could be expanded to help reduce current local overdraft problems. Continued urban growth in the CVWD service area is generating increased wastewater and is expected to generate more in the future. As areas not currently served by wastewater facilities continue to grow, the agencies serving those areas will need to extend their wastewater collection systems as well. CVWD's West Valley service area is already using all of its treated municipal wastewater for irrigation or percolation ponds, and the demand for non-potable water is currently greater than the supply. However, little wastewater reuse is occurring in eastern Coachella Valley. According to CVWD's 2011 Management Plan Update, as population growth continues, significantly more wastewater will be generated, providing an important source of additional water that could be treated and then used to further offset groundwater pumping.

Within the Upper Santa Margarita watershed, recycled water is produced by four water service providers. Currently, there are no uniform criteria for regulating groundwater recharge applications. DHS requires blending recycled water with at least an equal amount of non-recycled water. Water recharged in this manner must be retained for a minimum of six months in the ground prior to extraction for drinking water. Additionally, no extraction can occur within 500 feet of a recharge site. RCWD has a contract with EVMWD to provide effluent from the Santa Rosa Water Reclamation Facility. From 2008 to 2012 the requirement is 1.5 cfs; in 2013 the requirement increases to 2.3 cfs. Recycled water produced in the upper watershed by EMWD and RCWD in excess of demands is sent to the Temescal Wash for discharge into the Santa Ana watershed. Water quality regulations in the Santa Margarita watershed have made disposal of excess recycled water in the Santa Margarita watershed cost prohibitive. Recycled water quality in the upper watershed is treated to meet regulatory standards and end user requirements. Recycled water must be of sufficient quality to not detrimentally damage landscaping and agriculture. Each of the water providers actively engages in nitrogen and salinity management.

3. Desalination

The federal Reclamation Recycling and Water Conservation Act of 1996 authorized federal cost-sharing in wastewater recycling projects and included funding for desalination of sea water and groundwater, reclaimed water treatment and reuse. The federal Water Desalination Act of 1996 encourages desalination research by providing funding for exploration of this developing technology. As discussed in MWD's 2010 RUWMP, seawater desalination especially represents a significant opportunity to diversify the water resource mix available to Southern California, including Riverside County, with a new, locally-controlled, reliable potable water supply. Like conservation, recycling and other new local supplies, seawater desalination will increase regional supply reliability by offsetting existing and future demands for imported water. MWD is aiming for 150,000 AFY of

seawater desalination by 2025 and several other local and retail water agencies have also identified seawater desalination as an important component of their water supply portfolios in their UWMPs.

The implementation of large-scale seawater desalination plants in California offers many opportunities and challenges. In the past decade, advances in energy efficiency and membrane technology have reduced the cost of seawater desalination relative to costs for imported water supplies and other supply alternatives. Challenges to seawater desalination include high capital and operation costs, pre-treatment design constraints, environmental issues, system integration needs and an unpredictable permitting process. MWD and MWD's member agencies are actively pursuing research into alternative intake and outfall technologies, process designs and treatment alternatives that could minimize some of the environmental issues and lower unit costs. These advances continue to make increased seawater desalination a viable option for a new water supply.

In addition to seawater desalination, desalination can also help manage problems with high TDS in groundwater and drainage water. CVWD, for example, is developing facilities for treating agricultural drainage water. It has plans for a drain water desalination facility to commence operation by 2015, which would increase the non-potable water supply for irrigation of agriculture, golf courses and landscaping, as well as for groundwater recharge. The West San Jacinto Groundwater Basin within EMWD's service area has high TDS groundwater. Because of decreased production, it is experiencing increased water levels, which causes migration of saltier water into areas of higher quality groundwater. To prevent this, EMWD has implemented a Groundwater Salinity Management Program, which consists of two desalination facilities which they own and operate (EMWD UWMP, pages 49-55). These facilities address groundwater migration problems and supply additional water for potable use. Extraction capacity will be increased by the completion of construction scheduled for September 2011. A third facility has been designed and is projected to be on line in 2015.

4. Water Transfers

The least expensive and most efficient of the above-listed types of programs is the transfer of water from agricultural to urban uses. In recent years, municipal population growth and the need for water supply reliability have triggered the growth of water transfer programs. MWD, for example, has entered an agreement with farmers in the PVID for a transfer of just under 186,000 AF of Colorado River water from farmers to MWD over a two-year period. MWD has paid the equivalent of $143 per AF of water to farmers. In order to make this amount of water available for the transfer, the farmers have left approximately 20,215 acres of farmland fallow. Other types of water transfers also increase the predictability and reliability of water supplies. For example, MWD has storage and transfer programs with CVP and SWP settlement contractors, which allow MWD to purchase water in drier years for delivery to MWD's service area. MWD has developed a number of Central Valley/ SWP storage and transfer programs, which have enabled it to meet its 2010 dry-year resource target and to protect against potential water shortages due to decreases in the Colorado River supply and as a result of drier-than-expected hydrologic conditions.

EMWD relies on MWD's water transfers and exchanges, but is also investigating opportunities independent of transfers and exchanges as a method of improving reliability, especially during periods of water shortages. Per the 2011 Management Plan Update, CVWD has likewise not identified any specific independent transfer projects, but recognizes that it could pay for development of a new water source or installation of water conservation devices or recycled water delivery systems in another water district elsewhere in California in exchange for transferring the water to CVWD (page 6-18). More agreements which transfer water from agricultural to urban uses are expected, as well as those from water-rich agencies to those agencies with a supply shortage.

5. Stormwater and Runoff Capture and Management

Stormwater capture is another method that has been identified as having the potential for development as a 'new' water source for augmenting local water supplies. Because of the arid nature of much of Riverside County, many drainage areas have little or no flow except immediately after storm events, which happen largely in the winter. In the CVWD service area, significant amounts of local runoff are currently captured at the Whitewater River Recharge Facility and in the debris basins and unlined channels of the west valley. Additional stormwater will be captured when the 1000 Palms Flood Control Project is completed and when flood control improvements are constructed in the Oasis area. Stormwater capture potential is also being considered in conjunction with projects that construct stormwater and flood control facilities. In addition, flood control agencies within MWD's service area have for many years captured and spread stormwater for groundwater replenishment. Local runoff, like reclaimed water, is also conserved via spreading grounds, injection wells, reservoirs and unlined river channels.

6. Graywater

Graywater represents another potential local water source. This type of water is wastewater generated from domestic activities, such as laundry, dishwashing, bathing and other non-sewage uses, and can be recycled (with or without further purification) for onsite uses, such as landscape irrigation or drainage into constructed wetlands. It is important to note that graywater is not sewage (blackwater) and does not contain human waste. As it is wastewater, however, it is regulated differently than potable water sources since it can contain impurities including pathogens.

In July 2009, the California Building Standards Commission (CBSC) approved the addition of Chapter 16A, "Non-Potable Water Reuse Systems," to the 2007 California Plumbing Code. Emergency regulations allowing graywater reuse systems were subsequently filed with the California Secretary of State August 2009 and became effective immediately upon filing. Assembly Bill 371 (Goldberg 2006) and Senate Bill 283 (DeSaulnier, 2009) directed DWR, in consultation with the State Department of Health Services, to adopt and submit to the CBSC regulations for a State of California version of Appendix J (renamed Chapter 16 Part 2) of the Uniform Plumbing Code to provide design standards to safely plumb buildings with both potable and recycled water systems. November 2009 the CBSC unanimously voted to approve the California Dual Plumbing Code that establishes statewide standards for installing both potable and recycled water plumbing systems in commercial, retail and office buildings, theaters, auditoriums, condominiums, schools, hotels, apartments, barracks, dormitories, jails, prisons and reformatories. In addition, the California Department of Housing and Community Development has graywater standards and DWR has also proposed dual plumbing design standards. MWD and some of the other water agencies serving Riverside County have provided comments on these developments and continue to explore options for graywater capture and usage.

D. Wholesale and Retail Water Agency Perspectives

As part of the effort to gather and summarize water supply related to the proposed project, GPA No. 960, data was gathered from a variety of state, regional, county and local resources. The water resource analyses provided herein were developed in part by reviewing and utilizing the current and detailed information and analyses set forth in documents such as, but not limited to: the 2009 California Water Plan Update (CWP) prepared by the California Department of Water Resources (DWR); the 2010 Regional Urban Water Management Plan prepared by the Metropolitan Water District of Southern California (MWD); Integrated Regional Water Management Plans prepared through the cooperative and collective efforts of water supply agencies in Riverside County; and the 2010 Urban Water Management Plans (UWMPs) prepared by individual urban wholesale and retail water suppliers throughout Riverside County, and, in particular, those serving areas potentially affected by GPA No.

960. As indicated above, these are the types and categories of source documentation that the County of Riverside is instructed to utilize for purposes of preparing the water supply analysis for revising its General Plan pursuant to GPA No. 960. (See, e.g., CGC Sections 65302.2 and 65352.5). In addition to being summarized and discussed throughout the following section, additional information from these documents is also included in Appendix EIR-8, as noted.

1. Urban Water Management Plans

The discussion below begins from the regional perspective of MWD. As the largest single water provider in California and the State Water Contractor (SWC) serving western Riverside County, information from the MWD's 2010 Regional Urban Water Management Plan (RUWMP) establishes a relevant, comprehensive and detailed overview of the issues affecting water supply and demand in large areas of Riverside County affected by GPA No. 960. Then, focusing on specific portions of western Riverside County, sections are presented for the Eastern Municipal Water District (EMWD) and Western Municipal Water District (WMWD), both of which are MWD member agencies that provide wholesale, as well as retail, water services within their respective service areas.

Also, sections are presented for the Coachella Valley Water District (CVWD) and Desert Water Agency (DWA), two State Water Contractors that supply wholesale water in eastern Riverside County. Two additional water supply agencies, the Pine Cove County Water District (PCCWD), which serves a portion of the San Jacinto Mountains, and the Palo Verde Irrigation District (PVID), are also discussed. Following those discussions, additional information and analyses related to specific retail water agencies are provided. For example, information on the Rancho California Water District (RCWD) is presented since, although a member-agency of EMWD, it is explicitly not covered under EMWD's UWMP and it imports a portion of its water supply directly from MWD.

In this way, all of the State Water Contractors (agencies receiving SWP supplies pursuant to a direct contract with DWR) that provide water service in Riverside County are discussed in this section, with the exception of the San Gorgonio Pass Water Agency (SGPWA). Other than approximately 300 acres of vacant land to be designated as Open Space – Habitat Conservation (OS-CH) for habitat conservation, which would not affect water supply or demand for purposes of this analysis, SGPWA does not provide water service any areas affected by GPA No. 960. Lastly, separate information and analyses are presented for the areas not covered by existing water service providers. These areas, which would require self-service (for example, private wells), are discussed according to County Area Plan in which they are located and their respective proximities to an identified groundwater basin, as applicable. See Section 4.19.4.I-3, for more information.

2. Relationship Between the General Plan and the Urban Water Management Plans

In accordance with applicable law, much of the information and analyses set forth in this water supply analysis for GPA No. 960 has been prepared by utilizing the detailed data and descriptions recently prepared by urban water suppliers throughout Riverside County regarding the sufficiency of their total projected water supplies to serve existing and projected demands over the next 20-year planning horizon and beyond during normal, single-dry and multiple dry-year periods. Indeed, the State of California's general plan laws include several provisions which show a key relationship between the general planning process and information developed by local water supply agencies, particularly UWMPs. For example, CGC Section 65302.2 provides that when adopting or revising its general plan, a county must utilize as a source document any UWMP that is submitted to it by a water agency. Prior to adopting or substantially amending a general plan, the planning agency is required to refer the proposed

action to various agencies, including public water systems that serve water to customers within the area covered by the proposal (CGC Section 65352(a)(7)).

In accordance with these provisions of the general planning laws, in August 2010 the Riverside County Planning Department submitted letters to the public water systems throughout the areas covered by GPA No. 960, informing such agencies about Riverside County's proposed action to adopt or substantially amend its general plan and requesting certain water-related information. (A sample copy of the letters submitted by the Riverside County Planning Department is included in Appendix EIR-8.) In response to Riverside County's letters, a number of water agencies provided the County of Riverside with a variety of water supply and demand information such as that set forth in Government Code Section 65352.5(c). In several cases, the County of Riverside received the most recently prepared version of the water agency's UWMP, since most, if not all, of the information specified in Section 65352.5 is included in an UWMP.

The Urban Water Management Planning Act, CWC Section 10610 *et seq.* (UWMP Act), is "intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water." (CWC Section 10610.2(b)). The UWMP Act requires every 'urban water supplier' to prepare and adopt an updated Urban Water Management Plan (UWMP) at least once every five years by December 31st in years ending in five and zero. For purposes of the UWMP Act, an urban water supplier is defined pursuant to CWC Section 10617 as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 AF of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers."

According to the UWMP Act, a UWMP must address, among other things, projected water use, the reliability of water supply sources, the potential for using reclaimed water and desalinated water, water shortage contingency planning, comparisons of supply and demand, and water conservation efforts. (See CWC Sections 10631-10635). Specifically, the UWMP Act (CWC Section 10631) requires urban water suppliers to document water supplies available during normal, single-dry and multiple-dry water years in five-year increments over a 20-year period or more, as well as the existing and projected future water demands associated with forecasted population increases throughout the water provider's service territory over the same minimum 20-year period.

A UWMP must describe the service area of the supplier, including current and projected population, climate and other demographic factors affecting the supplier's water management planning. (CWC Section 10631(a)). The UWMP must quantify past, current and projected water use in 5-year increments, identifying the uses among various water use sectors, including single-family residential, multifamily, commercial, industrial, institutional and governmental, landscape, sales to other agencies, seawater intrusion barriers, groundwater recharge, conjunctive use, or any combination thereof, and agricultural use (CWC Section 10631(e)(1)). A UWMP must also describe the reliability of the water supply and its vulnerability to seasonal and climatic shortage, as well as provide data to the extent practicable for average, single-dry and multiple-dry water years (CWC Section 10631(c)(1)). Notably, Section 10631(k) of the UWMP Act allows agencies to 'rely' on information and analyses provided by wholesale water agencies regarding the availability and reliability of water supplies during normal, single-dry and multiple-dry year periods over the 20-year planning horizon.

Given the level of detail and information required in a UWMP, these documents can significantly reduce the burden of preparing a general plan water supply analysis for purposes of CEQA (Vineyard, 40 Cal.4th 412 at 434; Sonoma County Water Coalition, 189 Cal.App.4th 33 at 53-54; Watsonville Pilots Association, 183 Cal.App. 4th 1059 at 1092-93). As indicated above, the UWMP Act requires a qualifying urban water supplier to prepare and adopt an updated UWMP at least once every five years in years ending in five and zero. However, the Water Conservation Act of 2009, CWC Section 10608 *et seq.* (SBX7-7) and SB 1478 extended the time by which urban

retail water suppliers must adopt their 2010 UWMPs to July 1, 2011. Thus, from a timing perspective, the preparation of this water supply analysis for GPA No. 960 coincides with the recent preparation and adoption of current UWMPs by water supply agencies throughout Riverside County. Accordingly, and particularly for purposes of CGC Section 65302 *et seq.* (i.e., instructing a county to use UWMPs as source documents when adopting or revising a general plan), this analysis is based on the best and most current information available regarding long-term water supply sufficiency in the areas affected by GPA No. 960. It should be noted, that in order to manage the voluminous information associated with water supplies in general, and affected water agencies, in particular, information is presented in summary in this EIR chapter with additional supporting details provided in Appendix EIR-8.

3. Relationship Amongst Local Water Providers and Water Sources

Because water comes from a variety of sources (surface, groundwater, reclaimed) both locally and from imports, understanding the relationship between the various water providers and their sources can be challenging. To simplify these relationships, Riverside LAFCO provided schematics of the water supplies for Western and Eastern (Coachella Valley) Riverside County, as well as the San Gorgonio Pass / San Jacinto Mountain areas of Riverside County. These schematics are provided in Figures 4.19.15, 4.19.16 and 4.19.17, above.

In the following section, more detailed information is provided on the Metropolitan Water District of Southern California, as it is the SWP water importer Southern California and the source of imported water for all of western Riverside County. Likewise, detailed information is provided on the Coachella Valley Water District, which is the major water importer and wholesaler (Colorado River and SWP water) for eastern Riverside County. Secondarily, a summarization of key details for the major water wholesalers serving Riverside County internally are provided (Eastern and Western Municipal Water Districts for western Riverside County and the Desert Water Agency for the east).

Summary information is also presented for the San Gorgonio Pass Water Authority (Riverside County's other State Water Contractor), as well as for the three water districts (Pine Cove, Idyllwild and Fern Valley) serving the Idyllwild / central mountain region of Riverside County. These districts are included because they directly serve their portions of Riverside County via ground and surface waters; they do not import any water. Also, the Palo Verde Irrigation District (PVID), which does not provide any potable water, only agricultural water from the Colorado River, is discussed. Lastly, the retail water agencies are covered briefly. For each district, more information is generally provided in Section 4.19.4.F.

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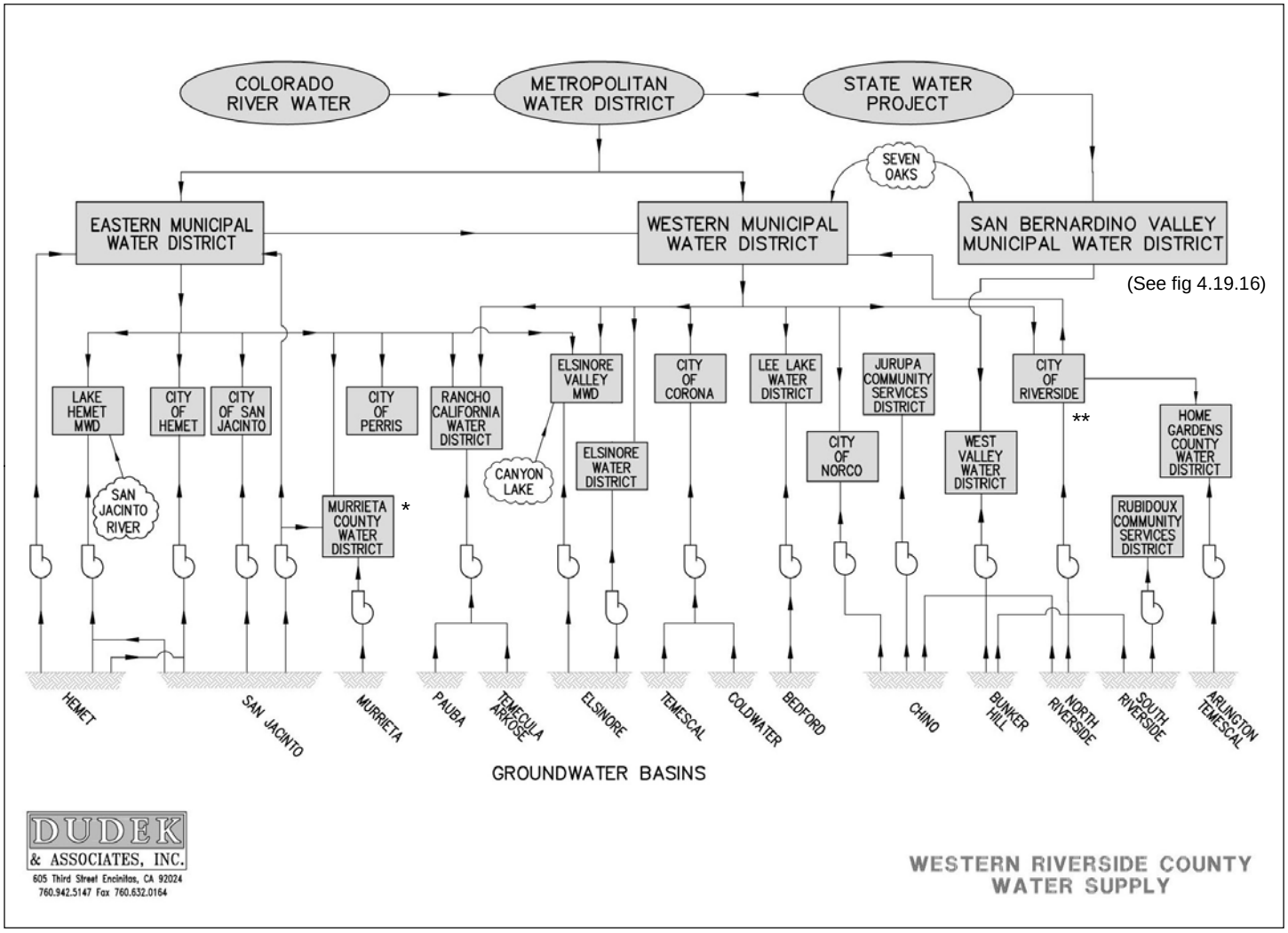

* Absorbed by WMWD in 2005

** Also has rights ot surface wanter in Seven Oaks Dam.

Data Source: Riverside County LAFCO, Water and Wastewater Municipal Service Review (2005)

December 16, 2013

Figure 4.19.15

SCHEMATIC OF WATER SUPPLY FOR WESTERN RIVERSIDE COUNTY

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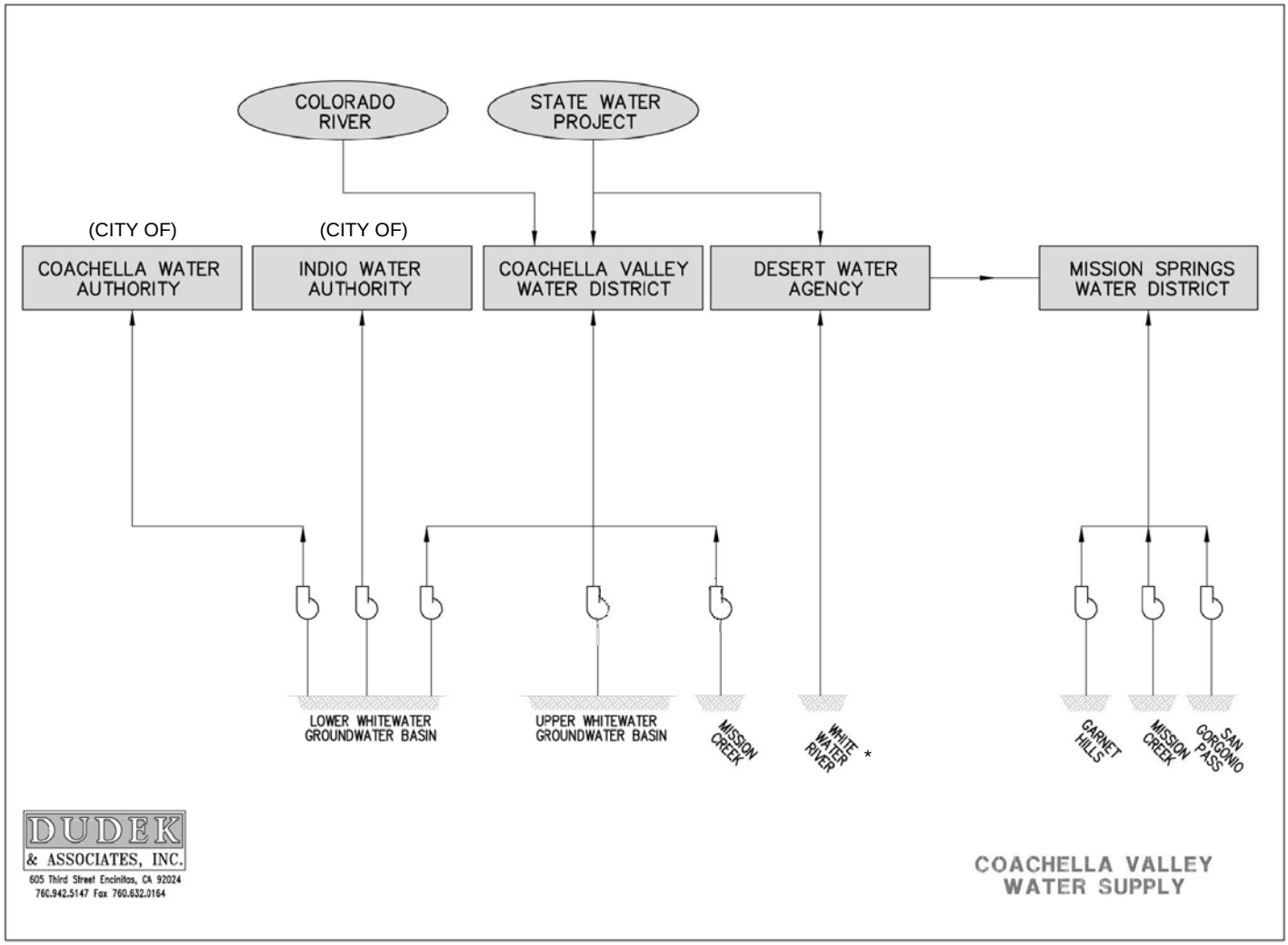

* Surface water source also.

Data Source: Riverside County LAFCO, Water and Wastewater Municipal Service Review (2005)

December 16, 2013

Figure 4.19.16

SCHEMATIC OF WATER SUPPLY FOR EASTERN RIVERSIDE COUNTY

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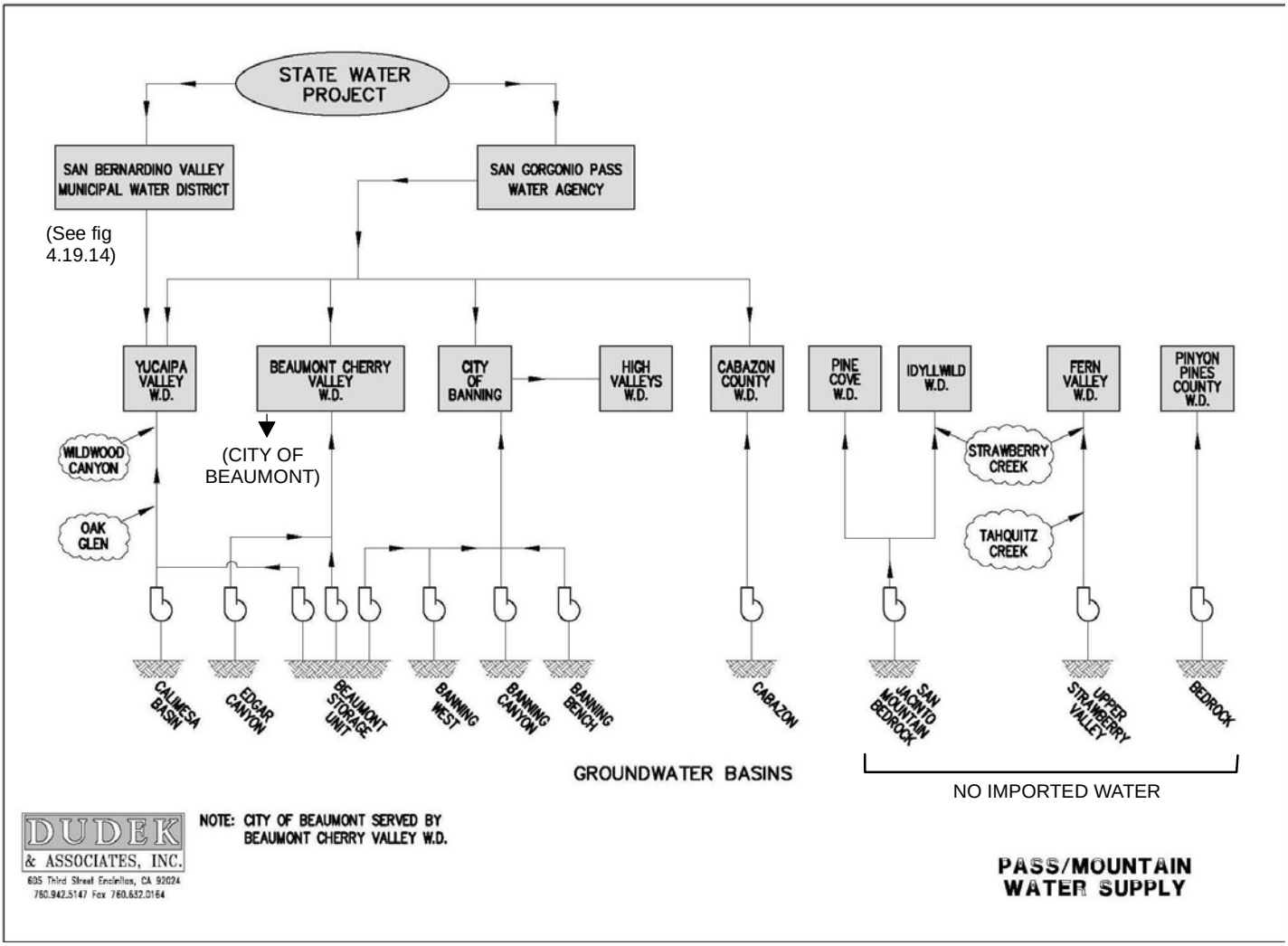

Data Source: Riverside County LAFCO, Water and Wastewater Municipal Service Review (2005)

December 16, 2013

Figure 4.19.17

SCHEMATIC OF WATER SUPPLY FOR THE PASS/MOUNTAIN AREA

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E. Metropolitan Water District of Southern California

The Metropolitan Water District of Southern California (MWD) is the largest water district in the state. It is comprised of 26 member agencies, including fourteen cities, ten other municipal water districts and one county water authority and serves more than 143 cities. To facilitate and ensure coordination between itself and its member agencies, MWD adopted its Final 2010 Regional Urban Water Management Plan (RUWMP) in December 2010.

MWD's 2010 RUWMP outlines a variety of issues related to water supply, demand and reliability. The RUWMP examines projected water demands on MWD's water supply and the availability of that supply under normal and dry years as indicative of water supply adequacy. It also outlines plans and programs relating to water conservation and best management practices, water quality and other programs aimed at ensuring existing water supplies are used responsibly and that future water supplies are available as growth increases demand for potable water. Unless otherwise noted, the information summarized in this section is from MWD's 2010 RUWMP.

1. MWD Service Area

MWD is a public agency organized in 1928 by a vote of electorates of thirteen Southern California cities. The agency was created by the original Metropolitan Water District Act (Metropolitan Act; California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209) by the California legislature "for the purpose of developing, storing and distributing water" to the residents of Southern California. Pursuant to its enabling act, MWD is authorized to levy property taxes within its service area, establish water rates, impose charges for water standby and service availability, incur general obligation bonded indebtedness and issue revenue bonds, notes and short-term revenue certificates, execute contracts and exercise the power of eminent domain for the purpose of acquiring property. In 1992, the MWD Board of Directors adopted the following mission statement: "To provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way."

MWD's service area includes the Southern California coastal plain. It extends about 200 miles along the Pacific coast from Oxnard in the north, to the Mexican border on the south and reaches more than 70 miles inland. The service area includes portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties. Approximately 90% of the population within these counties is within MWD's boundaries. MWD member agencies serve more than 143 cities and 89 unincorporated areas. Figure 4.19.18 shows MWD's service area.

MWD is a wholesale provider only and has no retail customers. It provides treated and untreated water directly to its member agencies. The 26 member agencies then deliver to their customers a blend of groundwater, surface water, desalinated water, recycled water and imported water from MWD. MWD has provided between 45-60% of the municipal and agricultural water used in its nearly 5,200-square mile service area. The remaining water is provided through local resources and imported water from other sources. Member agencies receive deliveries at different points in the system and pay for the service through a rate structure made up of multiple components. Each year member agencies advise MWD how much water they anticipate they will need during the next five years. MWD also works with member agencies to develop a forecast of future water demand.

MWD takes a comprehensive and proactive approach to planning for the future. Through coordination with member agencies, MWD has developed regional targets to accommodate growth and face the challenges to supply reliability. Through the past decade, MWD has undertaken several planning initiatives including development and implementation of an Integrated Resources Plan (IRP), a Water Surplus and Drought

Management Plan (WSDMP) and its Strategic Plan and Rate Structure. Together, these programs and plans provide a framework and guidelines for the future.

2. MWD Population and Growth Forecasts

Water demands on MWD are projected according to four key parameters: retail demands, local replenishment demands, local supplies and MWD system storage requirements. To forecast retail demand, MWD utilizes a forecasting system that relates water use to independent variables such as population, housing, employment, income, price, weather and conservation. The demographic and economic variables in the forecast are based on the Southern California Association of Governments (SCAG) 2007 Regional Transportation Plan and the San Diego Association of Government (SANDAG) Series 12: 2050 Regional Growth Forecast (February 2010) forecasts. Figure 4.19.19 (Map of MWD's Service Area), below, for MWD's population and growth estimates presented graphically. The~~se~~ demographic projections from MWD's RUWMP are *from the SCAG and SANDAG reports, which are* supported by environmental impact reports and based on city, county and regional general plans.

3. MWD Water Supply

MWD's water sources consist of the SWP, the Colorado River, *surface and* groundwater, ~~seawater desalination, surface water,~~ water transfers and water conservation projects. Areas of concern regarding each of these types of water sources are discussed above. The wide variety of sources and ~~MWD's~~ continued efforts to create and implement contingency plans and address the ongoing challenges with each of these types of water supplies continues to allow *MWD* to deliver supplies *that* ~~to~~ meet Southern California's growing demands.

As set forth in greater detail below, MWD has concluded, based on the results of its modeling efforts and other analyses, that it can maintain reliable supplies to its member agencies throughout the 2010 to 2030 time period and beyond during all hydrologic conditions. (See MWD 2010 RUWMP, page 12.) MWD's ability to provide this level of water supply certainty is predicated on the regionally developed framework between MWD and its member agencies.

As explained above, MWD provides wholesale treated and untreated water directly to its member agencies which, in turn, provide to their customers a combination of local groundwater, local surface water, recycled water and imported water purchased from MWD. For some member agencies, MWD supplies all the water used within the agency's service area, while others, such as EMWD and WMWD, obtain varying amounts of water from MWD to supplement their local water supply portfolios.

Table 4.19-O: Growth in Occupied Housing In MWD Service Area

	Actual (# of Households)		Interpolated	Projected (# of Households)				
County Within MWD	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Riverside County	357,000	427,000	496,000	552,000	605,000	650,000	692,000	733,000
San Bernardino County	203,000	216,000	234,000	253,000	269,000	285,000	300,000	314,000
Los Angeles County	2,911,000	2,961,000	3,064,000	3,185,000	3,299,000	3,389,000	3,475,000	3,545,000
Orange County	938,000	981,000	1,027,000	1,072,000	1,088,000	1,102,000	1,111,000	1,118,000
San Diego County	965,000	1,016,000	1,062,000	1,116,000	1,168,000	1,220,000	1,271,000	1,312,000
Ventura County	170,000	184,000	197,000	208,000	215,000	221,000	227,000	232,000
MWD Total	**5,544,000**	**5,785,000**	**6,080,000**	**6,386,000**	**6,644,000**	**6,867,000**	**7,076,000**	**7,254,000**

Note: MWD lists its data sources as: US Census, Cal. DOF, SCAG RTP-07, SANDAG Series 12 2050 (Feb. 2010).
Source: MWD 2009 RUWMP, Table A.1-4, page A.1-9.

According to the statutory relationship between MWD and its member agencies, each year the member agencies advise MWD how much water they anticipate they will need during the next five years. Utilizing this and other demand-related information developed through its MWD-MAIN Water Use Forecasting System, MWD then calculates the demand for the entire region and, based on information regarding existing and proposed local water supply projects, determines the amount of imported, stored, transferred and other water supplies needed to meet projected demands. Consistent with this arrangement, MWD does not provide supply projections to its member agencies.

It is pursuant to this regional and statutory framework that the tables set forth in the 2010 UWMPs prepared by water agencies serving Riverside County, such as EMWD and WMWD, are able to project that water supply and demand will remain in balance during average, single-dry and multiple-dry periods over the next 20-year horizon and beyond. To further implement this framework, MWD member agencies, such as EMWD and WMWD, do not request more imported water supplies from MWD than are necessary to supplement their own expansive efforts to develop local supplies and achieve extraordinary water conservation, particularly during dry and multiple-dry year periods or when imported water supplies may be constrained by regulatory circumstances.

In MWD's RUWMP, Appendix A.1 ("Demand Forecast") discusses the comprehensive approach taken by MWD as part of its demand forecasting. As provided in the RUWMP, MWD considers retail M&I ('municipal and industrial,' a common grouping of water users) demands to represent the full spectrum of urban water use within a region, including residential, commercial, industrial, institutional and unmetered uses. A copy of RUWMP Appendix A.1 is included in Appendix EIR-8 and is also incorporated into this EIR by reference.

According to recent growth forecasts, however, population growth in MWD's service area will average just over 150,000 people per year, increasing from an estimated 18.2 million in 2005 to 22.0 million in 2030. Notably, these new population projections are lower than prior estimates. More conservative projections of employment growth and lowered estimates of future birth rates are partially responsible for the lower growth projections. Another factor is the 2000 Census, which provided population counts 480,000 lower than the best estimates from the California Department of Finance (CDOF) for the six counties encompassed by MWD's service area.

~~To forecast urban water demands, MWD utilizes the "MWD-MAIN Water Use Forecasting System." This system features statistical models that have been adapted to conditions in Southern California and incorporates projections of demographic and economic variables from regional planning agencies (such as SCAG and SANDAG) into statistically estimated water demand models to produce forecasts of water demand. In addition, the MWD-MAIN system features a separate model for each sector. In the residential sector, the forecasts of water demand per dwelling unit are combined with the forecasts of dwelling units from the regional planning agencies to yield an estimate of residential water demand. Similarly, in the nonresidential sector, water use per employee is combined with forecasts of nonresidential water demand. The RUWMP also analyzes population as a key indicator of regional growth. According to the RUWMP (page A.1-3), in the mid-1990s, population growth in MWD's service area slowed during the recession, which disproportionately affected Southern California. During the economic recovery from 1995 to 2000, average population growth rebounded to 230,000 people annually. Since 2000, population within MWD's service area has grown to over 275,000 per year on average, approaching the boom levels of the 1980s.~~

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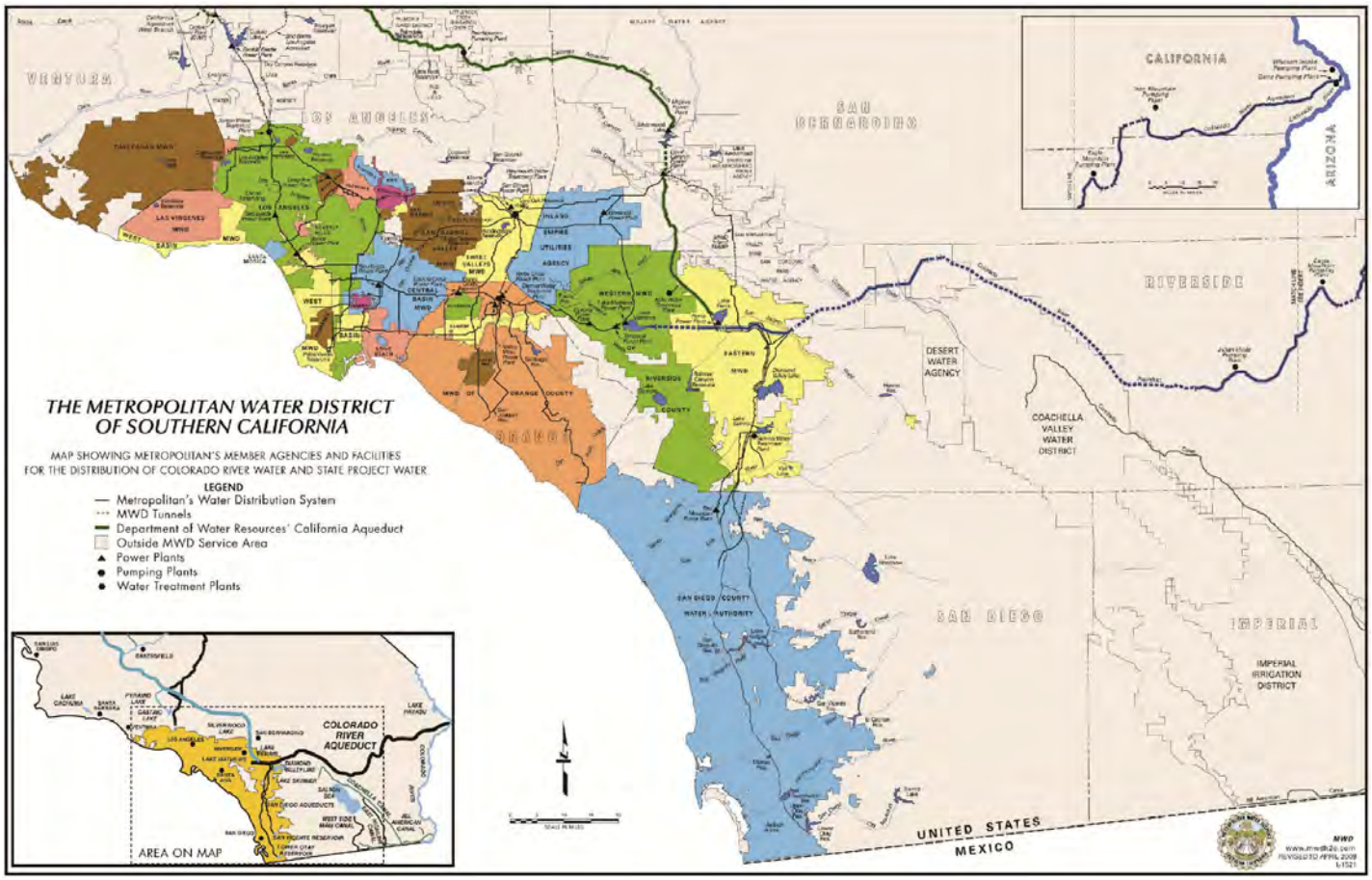
After estimating total projected retail demands, MWD factors in the water saving effects of conservation, including a detailed accounting that distinguishes between code-based conservation (i.e., water saved as a result of changes in water efficiency requirements for plumbing fixtures in plumbing codes), active conservation (i.e., water saved directly as a result of conservation programs by water agencies, including the implementation of best management practices) and price-effect conservation (i.e., water saved by retail customers attributable to the effect of changes in the price of water). After including the effects of conservation on retail demands, the analysis accounts for the use of local supplies available to MWD's member agencies. The analysis then considers the allowance for intermittent interruptions to non-firm, discounted rate supplies sold under MWD's Seasonal Storage Program and the Interim Agricultural Water Program, and estimates firm demands on MWD for single-dry, multiple-dry and average years. (MWD RUWMP, pages II-6 and 7.)

As indicated in their UWMPs, MWD-member agencies that serve water in Riverside County utilize and rely upon the information and analyses derived from MWD's RUWMP as part of their water supply planning and analysis functions, as they are expressly authorized to do by Section 10631(k) of the UWMP Act. As set forth herein, MWD's 2010 RUWMP provides information about MWD water supply reliability and demand calculations. The information set forth in the RUWMP illustrates that MWD will have a reliable water supply available to deliver to its member agencies through 2030 and beyond, even during dry periods mimicking historical patterns.



Data Source: MWD RUWMP (2009)

December 16, 2013

Figure 4.19.18

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA SERVICE AREA

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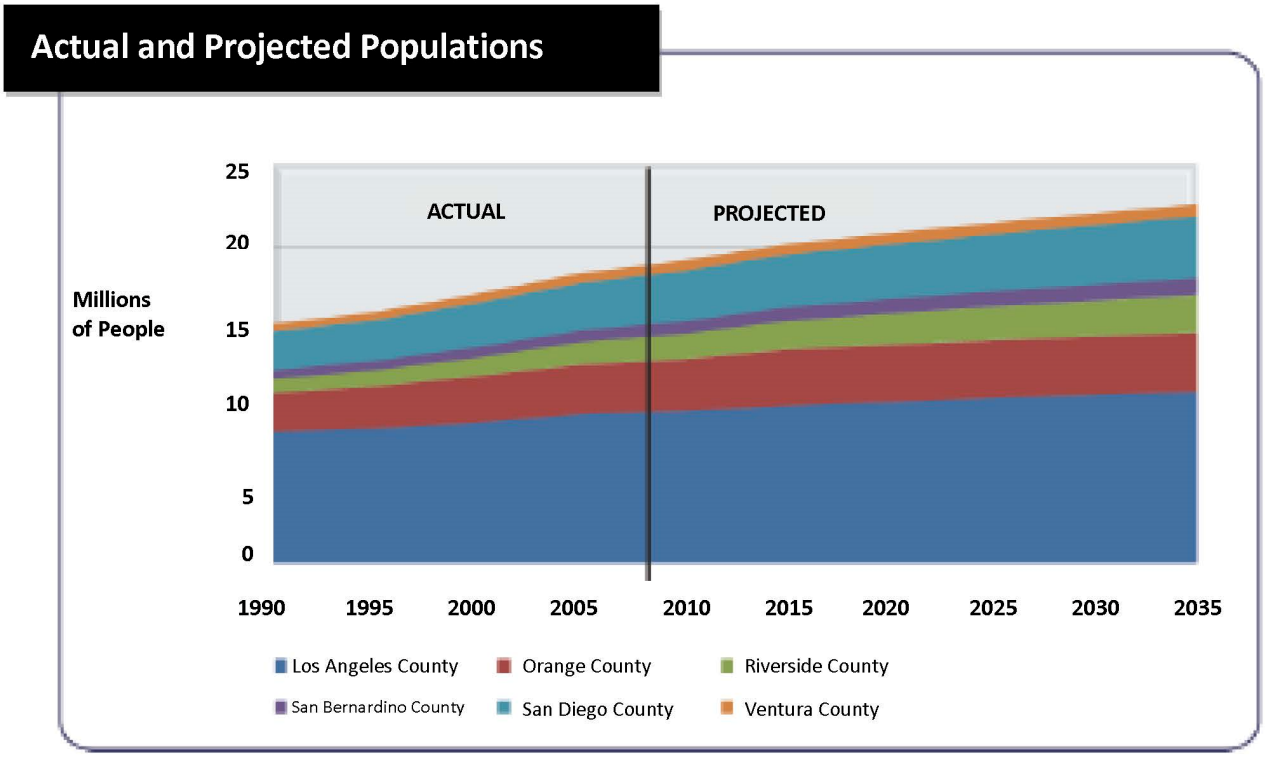
Figure 4.19.19: MWD Population Projections



Source: MWD, RUWMP, Appendix A, 2010.

4. MWD Integrated Resource Planning and Coordination

In its role as the supplemental water supplier to Southern California, MWD faces ongoing challenges in meeting the region's need for reliable, high-quality water supplies. As discussed above, increased environmental regulations and competition for water from outside the region have resulted in changes in delivery patterns and timing of availability of imported water supplies. Because of competing needs and uses associated with these resources, and because of concerns related to regional water operations, MWD has undertaken a number of planning initiatives over the past ten years. MWD's RUWMP discusses and analyzes those efforts.

Particularly important to MWD's mission is its coordinated approach to regional planning through the Integrated Resources Plan (IRP). In the 1990s, several years of drought and regulatory requirements began to affect the reliability of MWD water supply. In response to this challenge, MWD and its member agencies began the IRP process to determine the level of supply reliability needed and to find a cost-effective way to meet the goals established. The IRP was a collective effort drawing input from several groups, including MWD's Board of Directors and an IRP workgroup (comprised of MWD staff, member agency and sub-member agency managers, as well as groundwater basin managers) and representatives from the environmental, agricultural, business and civic communities. It was important that the IRP process be collaborative because its viability was contingent on the success of local projects and local plans in achieving their individual target goals for resource management and development. MWD and member agencies worked together to first gather and analyze data to determine demand and supply alternatives, then to use the information gathered to develop a diverse mix of resources. The outcome

of the IRP process was identification and development of a 'Preferred Resource Mix' which would ensure water supply reliability to MWD and its member agencies.

The IRP was first implemented in 1996 via a plan that ensured MWD and member agencies would meet all full-service demands without interruption through 2020. It set targets for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking and water transfers. Using a diverse mix of resources, MWD and its member agencies reduced dependency on any single water supply resource. In 2001, MWD began the process of updating its 1996 IRP to identify changed conditions, make adjustments and extend the planning period to 2025. After extensive cooperation with member agencies and others, the updated plan was adopted in July 2004.

The update addressed several changed conditions and extended reliability projections to 2025. Notable changed conditions listed in the 2003 Update were higher conservation savings, revised goals for SWP and Colorado River supplies, more stringent water quality laws and risk in resource implementation. Two areas of concern noted in the IRP process were the increasingly stringent water quality regulations and the risk associated with implementing planned projects. To manage those and other areas of concern, the IRP Update instituted a planning buffer of up to 10% of regional demands. This supply buffer is developed through increased targets for local supply and an increase of supply from Central Valley transfers. The supply buffer is part of MWD's practice of developing supply at least ten years in advance of need. To evaluate the reliability of the supply, MWD has developed a computer model called, 'IRP-SIM,' which is uses to prepare its overall regional water supply analyses.

MWD uses the IRP-SIM model to evaluate the reliability of its water supplies, including supplies available from the SWP, the Colorado River, water transfers and exchanges, and other sources. The IRPSIM is based on 70 years of historical hydrology (from 1922 to 1991) to allow it to estimate water surplus and shortage conditions over a 20-year period and beyond. The model has enabled MWD to analyze the reliability of deliveries to its member agencies, including those within Riverside County, during normal, worst-case single-year and multiple-year drought events. As mentioned earlier, the results of MWD's modeling indicate that it can maintain reliable supplies under such drought conditions throughout the 2010 to 2030 time period and beyond (MWD RUWMP, page II-15). Detailed analyses regarding MWD's supply projections and IRPSIM modeling are also set forth in Appendix A of MWD's RUWMP, which is incorporated as part of this analysis (see Appendix EIR-8 of this EIR).

As detailed in the analyses, MWD's overall supply and delivery reliability is based not just on SWP and Colorado River supplies, but also on conservation programs, groundwater storage programs and water transfer and exchange programs. Also, MWD's IRPSIM is analogous in some respects to the computer modeling approach utilized by the California DWR to evaluate the overall reliability of SWP supplies in light of the various factors affecting state resources. In the preparation of its SWP Delivery Reliability Report, the DWR also utilizes a model (CALSIM II) to analyze simulated SWP operations according to an 87-year period of historical precipitation and adjusted historical runoff, which are then adjusted to reflect current and future levels of development by analyzing land use patterns and projecting future land and water use. DWR then uses the assembled data to forecast the amount of water available to the SWP under current and future conditions.

In April 1999, MWD also adopted a Water Surplus and Drought Management Plan (WSDM) to provide policy guidance and manage regional water supplies to achieve the reliability goals of the IRP. The WSDM identifies the expected sequence of resource management actions that MWD will execute during surpluses and shortages to minimize the probability of severe shortages and eliminate the possibility of extreme shortages and shortage allocations. Unlike MWD's previous shortage and management plans, the WSDM recognizes the link between surpluses and shortages, and integrates planned operational actions with respect to both conditions.

The guiding principle of the WSDM is to manage MWD's water resources and management programs to maximize management of wet year supplies and minimize adverse impacts of water shortages to retail customers. The WSDM also addresses efficient water use and economical local resource programs, coordinating operations with member agencies to amass as much surplus water as possible available for use in dry years and the pursuit of innovative transfer and banking programs to secure more imported water for use in dry years. Specifically, the WSDM contains the following considerations to govern any equitable allocation of imported water:

- Impact on retail customers and regional economy
- Investments in local resources, including recycling and conservation
- Population growth
- Changes and/or losses in local supplies
- Participation in MWD's non-firm, interruptible programs
- Investment in MWD facilities.

The WSDM distinguishes among surpluses, shortages, severe shortages and extreme shortages. Pursuant to the WSDM, each year MWD evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage for that year. Each stage is associated with specific resource management actions designed to avoid extreme shortage scenarios to the maximum extent possible and minimize adverse impacts to retail customers if an extreme shortage occurs.

The sequencing outlined in the WSDM reflects anticipated responses based on detailed modeling of MWD's existing and expected water supply resource mix. When MWD must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Under most stages of shortage, MWD is still able to meet all end-use demands for water. For more severe shortage conditions, the WSDM shows that MWD would meet demands by withdrawing water from storage. Under worsening shortage conditions, MWD may undertake additional shortage management steps, including issuing public calls for extraordinary conservation, including the curtailment of Interim Agricultural Water Program deliveries in accordance with their discounted rates, exercising water transfer options or open market water purchases. In an extreme shortage scenario, MWD may be required to implement a plan to allocate available supply fairly and efficiently among its full-service customers and allocations would be based on and enforced through rate surcharges, where member agencies would be required to pay more for deliveries exceeding their respective allotments (MWD RUWMP, pages II-15 and II-16). The benefits of aggressive water conservation and public education efforts are also detailed in MWD's RUWMP (see MWD RUWMP, pages III-5 through III-21).

In total, through effective management of its water supply and implementation of its IRP and WSDM, MWD is able to forecast complete water supply reliability in meeting all non-discounted, non-interruptible demands through the year 2030 and beyond, including all treated/potable supply deliveries to its member agencies in Riverside County.

5. MWD Water Quality

As part of the Integrated Resource Plan, MWD has concentrated on maintaining the quality of source water and developing management programs that protect and enhance water quality. MWD's two largest water supply

sources, the SWP and the Colorado River, each have water quality issues. New standards for contaminants, such as arsenic, and the recognition of the existence of previously unregulated types of contamination, such as perchlorate, may add costs or affect the availability of certain local groundwater storage areas, but the geographically specific nature of these contaminants are not expected to affect the overall availability of MWD supplies. To date, MWD has not identified any water quality issues that cannot be mitigated. Salinity may decrease the amount of water available if membrane treatment is required, with losses of up to 15% of the water processed. Since only a small portion of the total water supply would be treated and it would then be blended with the remaining unprocessed water, there is no significant risk to MWD's water supply availability. The following is a brief summary of major water quality issues associated with water imported from the SWP or Colorado River. See Appendix EIR-8 for additional details.

a. SWP Water Quality

Key water quality issues associated with the SWP include total organic carbon, bromides and salinity. MWD is working to protect the water quality of this source, but has also seen the need for upgraded treatment to deal adequately with water quality concerns. Total organic carbon and bromide levels produce disinfection byproducts that current water treatment plants may be inadequate to fully handle. MWD expects this treatment limitation to be overcome over the next few years as ozone is implemented as the primary disinfectant and does not expect water quality to limit SWP supplies through 2030.

Total Organic Carbon and Bromide: When source water containing high levels of total organic carbon (TOC) and bromide is treated with disinfectants such as chlorine or ozone, disinfection byproducts (DBPs) form. Studies have shown a link between certain cancers and DBP exposure and some studies have also shown an association between reproductive and developmental effects and chlorinated water. In December 1998, the United States Environmental Protection Agency (EPA) adopted more stringent regulations for DBPs and water agencies began complying with those new regulations in January 2002. The EPA promulgated additional DBP rules in January 2006.

Existing levels of total organic carbon (TOC) and bromide in Delta water supplies present significant concern for MWD's ability to maintain safe drinking water supplies and comply with applicable regulations. Levels of these constituents in SWP water increase several fold due to agricultural drainage and seawater intrusion as water moves through the Delta. One of MWD's primary objectives for the CALFED Bay-Delta process is protection and improvement of the water quality of its SWP supplies to ensure compliance with current and future drinking water regulations.

MWD has five treatment plants: two that receive SWP water exclusively and three that receive a blend of SWP and Colorado River Aqueduct (CRA) water. In 2003 and 2005, MWD completed upgrades at its two SWP treatment plants to utilize only ozone as the primary disinfectant. This ozonation process avoids the production of regulated DBPs that would otherwise form in the chlorine treatment of SWP water. The three plants producing blended water meet federal guidelines for these byproducts through managing the blend of SWP and CRA water. The non-ozone plants utilizing blended water also meet federal guidelines through similar blending processes and by limiting the percentage of SWP water used at each plant. MWD has plans, some already in the process of implementation, to install ozonation at all three remaining plants.

Salinity: Water supplies from the SWP have significantly lower TDS concentrations than the Colorado River, averaging 250 mg/L in water supplied through the East Branch. Because of this lower salinity, MWD blends SWP water with high salinity Colorado River water to reduce the overall salinity concentrations of the delivered water. However, both the supply availability and its TDS concentrations can vary significantly in response to hydrologic conditions in the Sacramento-San Joaquin watersheds.

TDS concentrations of SWP water can also vary widely over short periods of time. These variations reflect seasonal and tidal flow patterns, and they pose an additional problem for use of blending as a management tool to lower the higher TDS from the Colorado River supply. For this reason, it may not always be possible to maintain both the salinity objective and water supply reliability unless salinity concentrations of source supplies can be reduced. As discussed above, restrictions on SWP exports due to compliance with FESA and exacerbated by drought conditions has increased MWD's reliance on Colorado River water, affecting MWD's ability to meet its goal of producing water of 500 mg/L TDS at its blend plants.

TDS objectives in Article 19 of the SWP Water Service Contract specify a ten-year average TDS of 220 mg/L and a maximum monthly average of 440 mg/L. These objectives have not been met and Metropolitan is working with DWR and other agencies on programs aimed at reducing salinity in Delta supplies. These programs aim to improve salinity in the San Joaquin River through modifying agricultural drainage and developing comprehensive basin plans. In addition, studies are underway to evaluate if salinity reductions could be obtained by modifying levees in the Franks Tract and other flooded islands (actually levee-enclosed parcels of land generally below water level) in the Delta or by placing operable gates at strategic locations to impede transport of salts from seawater.

Chromium VI: Chromium VI (hexavalent chromium) is a possible contaminant of both groundwater and surface water. Chromium is an inorganic chemical used in electroplating, leather tanning, wood treatment, manufacture of pigments and as a cooling tower treatment for corrosion control. Chromium can enter drinking water sources through discharges from industries, leaching from hazardous waste sites and also erosion of natural deposits. In drinking water, Chromium VI is very stable and soluble. While it is known to cause lung cancer in human when inhaled, the health effects in humans from ingestion are not as well established. The current California maximum contamination level (MCL) for total chromium (which includes Chromium VI) is 0.05 mg/L. There are as yet no specific drinking water standards solely for Chromium VI. However, on August 20, 2009, the California Office of Health Hazard Assessment released a draft public health goal (PHG) of 0.06 µg/L and the Department of Public Health will use this PHG in eventually setting an MCL. Chromium VI levels in SWP water range from 0.03 µg/L to 0.80 µg/L and treated water levels range from 0.03 to 0.70 µg/L.

Nutrients: Elevated levels of nutrients, including phosphorus and nitrogen compounds, can stimulate growth of nuisance algal and aquatic weeds. This can cause taste and odor concerns, as well as impede water flow. SWP supplies have significantly higher nutrient levels than Colorado River supplies and have experienced numerous taste and odor issues in recent years. While current nutrient loads remain a concern and are anticipated to have cost implications, MWD has established a comprehensive monitoring program and response actions to ensure there is no effect on the availability of water supplies.

Arsenic: Arsenic is a naturally occurring element found in rocks, soil, water and air. It can also enter water via runoff from agricultural fields and discharges from industrial processes. Long-term exposure to elevated levels of arsenic in drinking water has been linked to certain cancers, skin pigmentation changes and hyperkeratosis (skin thickening). The federal MCL for arsenic in domestic water supplies was lowered to 10 µg/L as of January 2006 for federal regulations and November 2008 for California regulations. Historically, MWD's water supplies have had low levels of this contaminant, with arsenic levels in SWP water ranging from not detected to 4.0 µg/L, well within the regulatory limits.

Perchlorate: Perchlorate compounds are used as a main component in solid rocket propellant and are also found in some types of munitions and fireworks. Conventional drinking water treatment, including the type of treatment utilized at MWD's treatment plants, is not effective in removing perchlorate. Perchlorate is a concern because it interferes with the thyroid's ability to produce hormones required for normal growth and development. While the EPA is in the process of making its final regulatory determination for the contaminant, the California

Department of Public Health has established a primary drinking water standard for perchlorate with an MCL of 6 µg/L. MWD has not detected perchlorate in SWP water since monitoring began in 1997.

b. Colorado River Water Quality

The most serious threat to Colorado River supplies is salinity levels. Because of its high mineral content (saltiness), Colorado River supplies must be blended (that is, diluted) with SWP water to meet the adopted salinity standards. MWD is working to reduce current salinity levels and prevent them from rising further in the Colorado River. In addition, MWD is also working to protect the Colorado River from uranium, perchlorate and hexavalent chromium. MWD fully expects its source protection efforts to be successful. Therefore, the primary water quality constraint on the use of Colorado River water is salinity levels.

Salinity: Water imported via the Colorado River Aqueduct has the highest level of salinity of all of MWD's sources of supply, averaging around 630 mg/L since 1976. Concern over salinity levels in the Colorado River has existed for many years. To deal with the concern, the International Boundary and Water Commission approved Minute No. 242, "Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River" in 1973 and a year later President Nixon approved the Colorado River Basin Salinity Control Act.

Salts in the Colorado River system are indigenous and pervasive, mostly resulting from saline sediments in the Colorado River basin that were deposited by prehistoric oceans. They are easily eroded, dissolved and transported into the river system. However, overall salinity control programs have proven very successful and cost-effective, and they have reduced salinity concentrations of Colorado River water by an average of 100 mg/L.

Uranium: A 16-million-ton pile of uranium mine tailings at Moab, Utah, lies approximately 750 feet from the Colorado River. Rainwater has been seeping through the pile and contaminating the local groundwater, which is slowly seeping into the river. There also is the potential for millions of tons of material containing uranium to wash into the Colorado River as a result of a catastrophic flood or other natural disaster. Public perception of drinking water safety is a particular concern with uranium. Remedial actions at the site have been underway for over a decade and the tailings pile has begun to be removed. The entire pile is scheduled to be completely removed no later than 2025. MWD has been monitoring for uranium in the Colorado River Aqueduct and at its treatment plants since 1986. Uranium levels in the Colorado River at MWD's intake range from 1-6 pCi/L, well below California's maximum drinking water standard of 20 pCi/L.

Perchlorate: Perchlorate has been detected at low levels in MWD's Colorado River water supply and in a number of regional groundwater basins. MWD began monitoring for perchlorate in June 1997 when it was detected in the Colorado River and at the Lake Mead outlet of Hoover Dam. It was traced back to the Las Vegas Wash where the source was found to be a chemical manufacturing facility in Henderson, Nevada, which is now undertaking ongoing remediation of the site. As a result of aggressive clean-up efforts, perchlorate levels in Colorado River water at Lake Havasu have decreased significantly in recent years from a peak of 9 µg/L in May 1998 to typically less than 2 µg/L since June 2006. The concentrations of perchlorate in Colorado River water are now less than California's detection limit for reporting purposes of 4 parts per billion (ppb).

Chromium VI: Chromium VI levels in Colorado River water are most often not detected (that is, below 0.03 µg/L), but, when detected, range from 0.03 to 0.08 µg/L.

Nutrients and Other Pollutants: While phosphorous levels are much lower in the Colorado River than the SWP, this nutrient is still of concern. Any addition of phosphorus to Colorado River water can result in increased algal growth and low-nutrient Colorado River water is relied upon by MWD to blend down the higher-nutrient SWP water. Population growth, especially in the Las Vegas area, means high levels of treatment at wastewater

treatment plants will maintain existing phosphorous levels. This will help minimize the operational, financial and public health impacts associated with excessive algal growth and protect downstream drinking water availability.

6. MWD Retail Market Demand

In its 2010 RUWMP, MWD estimates that total retail municipal and industrial (M&I) water use will grow from an annual average of 4.0 million AFY in 2010 to 4.7 million AFY in 2035. Based on its general pattern of future demographic distributions, Riverside County's urban water demand is expected to have an increase of 230,700 AFY between 2010 and 2035. Overall, between 2010 and 2035, single-family residential water use is expected to increase by 17.5%, multi-family water use by 29.4% and a relatively flat trend for estimated non-residential water use in MWD's service area. Between 2010 and 2035, Riverside County's single-family residential demand is expected to increase from 329,000 AFY to 490,000 AFY; multi-family from 54,000 to 86,000 AFY; and nonresidential 47,000 AFY to 69,000 AFY. These numbers assume normal weather conditions and continued water savings due to conservation measures such as tightened plumbing codes, conservation pricing effects and the continuing implementation of utility-funded conservation Best Management Practices (BMPs). These projections likely over-estimates water usage, as they do not include savings derived from SB7x7 (which aims for a 20% reduction).

7. MWD Wholesale to Other Agencies

MWD provides wholesale water service to its 26 member agencies. MWD's two member agencies in Riverside County, Eastern Municipal Water District (EMWD) and Western Municipal Water District (WMWD), both provide wholesale and retail water services in their respective territories, serving approximately 15% of Riverside County by landmass and 71% of Riverside County by population. The water services and issues associated with these member agencies, and their subagencies, are discussed further in the sections that follow, below, as well as in Appendix EIR-8.

8. MWD Other Water Uses

In addition to municipal and industrial uses, MWD also supplies lesser amounts of water for agricultural uses, seawater barriers and groundwater replenishment. Agricultural demand, that is, water use for irrigating crops, is expected to decrease as urbanization continues in Southern California; from 231,000 AFY in 2015 and 186,000 AFY in 2035. Seawater barrier demands, water used to prevent or limit seawater intrusion into the coastal groundwater basins, is expected to remain relatively flat: from 71,000 AFY in 2015 to 72,000 AFY in 2035. Replenishment demand is the amount of water member agencies plan to use to replenish their groundwater basins. This type of water use is also expected to increase between 2015 and 2035, from 177,000 AFY to 191,000 AFY.

Table 4.19-P: MWD Total Retail Municipal and Industrial Demand Forecasts

County	Actual	Projected[2] (Acre-Feet)				
	2010[1]	2015	2020	2025	2030	2035
Riverside County	454,000	508,000	532,000	570,000	606,000	641,000
San Bernardino County	242,000	243,000	245,000	256,000	268,000	279,000
Los Angeles County	1,761,000	1,703,000	1,664,000	1,676,000	1,693,000	1,704,000
Orange County	613,000	644,000	630,000	633,000	634,000	634,000
San Diego County	596,000	603,000	604,000	631,000	657,000	675,000
Ventura County	151,000	149,000	149,000	152,000	156,000	158,000
MWD Total	**3,817,000**	**3,850,000**	**3,824,000**	**3,918,000**	**4,014,000**	**4,091,000**

Footnotes: 1. Data interpolated. 2. Including conservation and SBX7-7 savings.
Source: MWD, 2009 RUWMP, Table A.1-6, page A.1-10, 2010.

Table 4.19-Q: MWD Total Overall Retail Demand

County	Actual	Projected[2] (Acre-Feet)				
	2010[1]	2015	2020	2025	2030	2035
Riverside County	544,000	603,000	626,000	664,000	701,000	736,000
San Bernardino County	268,000	259,000	252,000	263,000	275,000	286,000
Los Angeles County	1,762,000	1,704,000	1,664,000	1,676,000	1,694,000	1,705,000
Orange County	624,000	651,000	634,000	635,000	637,000	637,000
San Diego County	668,000	687,000	682,000	691,000	709,000	728,000
Ventura County	166,000	170,000	170,000	174,000	178,000	181,000
MWD Total	**4,032,000**	**4,074,000**	**4,028,000**	**4,103,000**	**4,194,000**	**4,273,000**

Footnotes:
1. Data interpolated.
2. Including conservation and SBX7-7 savings.

Source: MWD, 2009 RUWMP, Table A.1-5, page A.1-9, 2010.

Table 4.19-R: MWD Water Deliveries to Member Agencies

Sub-Agency (Acre-Feet)	2006	2007	2008	2009
Eastern Municipal Water District	126,000	127,000	109,000	97,000
Western Municipal Water District	103,000	120,000	99,000	88,000
All Other Member Agencies*	1,973,000	2,168,000	1,885,000	1,675,000
MWD Totals	**2,202,000**	**2,415,000**	**2,093,000**	**1,860,000**

*The remaining MWD member agencies are all located outside of Riverside County.

Source: MWD, 2009 RUWMP, Table A.2-2, page A.2-4, 2010.

Table 4.19-S: MWD Total Retail Agricultural Demand

County	Actual	Projected (Acre-Feet)				
	2010*	2015	2020	2025	2030	2035
Riverside County	89,600	94,200	94,200	94,200	94,200	94,200
San Bernardino County	26,500	15,200	7,100	7,100	7,100	7,100
Los Angeles County	500	400	400	400	400	400
Orange County	10,900	6,800	3,800	2,900	2,900	2,900
San Diego County	72,000	84,300	78,300	59,800	52,300	52,300
Ventura County	14,700	20,900	21,300	21,700	22,300	22,900
MWD Total	**214,200**	**221,800**	**205,100**	**186,100**	**179,200**	**179,800**

* Data not available – estimate based on prior years.

Source: MWD, 2009 RUWMP, Table A.1-7, page A.1-10, 2010.

9. MWD Water Supply Reliability

As demonstrated by the information and analyses in MWD's 2010 RUWMP, the total projected water supplies available to MWD over the next 20 years and beyond are sufficient to meet the total projected demands of its member agencies during normal, single-dry and multiple dry-year periods. See tables below. While both Colorado River and SWP supplies have experienced cutbacks and restrictions, MWD has rights or other access to Colorado River Aqueduct supplies from existing and committed programs, as well as from implementation of the QSA. Colorado River transactions are potentially available to supply additional water up to the Colorado River Aqueduct's capacity of 1.25 million AF on an as-needed basis.

Calculated SWP supplies include incorporation of restrictions on SWP and CVP operations in accordance with the delta smelt and salmonid biological opinions discussed previously, with delivery estimates between 7% (based on the historical single driest year) and 60% (based on the long-term average condition). In dry, below-normal conditions, MWD has worked collaboratively with other contractors to develop numerous voluntary Central Valley storage and transfer programs, with the goal of developing additional dry-year supplies that can be conveyed through available pumping capacity to maximize deliveries through the California Aqueduct during dry hydrologic conditions and regulatory restrictions.

One of the key components of MWD's water supply capability is the amount of water in MWD's storage facilities, because storage is a major component of MWD's dry-year resource management strategy. MWD has both surface storage in Diamond Valley Lake and SWP Terminal Reservoirs, as well as groundwater storage. This stored water is available for use during periods of low surface water supplies as a way of augmenting seasonable and multiyear shortages. See earlier Figure 4.19.10 for major water conveyance infrastructure serving California and Figure 4.19.26 for Colorado River details.

In terms of surface storage, Diamond Valley Lake is Southern California's newest and largest reservoir, its construction nearly doubled the region's surface storage capacity. Having reached capacity in early 2003, Diamond Valley Lake holds up to 810,000 AF, some of which is for dry-year and seasonal storage, with the remainder for emergency storage. MWD received operational control of 218,940 AF in the reservoirs at the southern terminals of the California Aqueduct. Control of this capacity in Castaic Lake and Lake Perris gives Metropolitan greater flexibility in handling supply shortages. Seismic concerns regarding the Perris dam have led to a 50% reduction in the amount of water stored at the lake. Nevertheless, MWD's operational storage has remained the same and MWD has continued to withdraw and replace water from the reservoir.

For groundwater storage, many local programs have been implemented to maximize the use of local water supplies. For many years, flood control agencies within MWD's service area have captured and spread stormwater for groundwater replenishment. To meet its adopted targets for dry year storage, MWD and its member agencies encourage the recharge of the groundwater basins. MWD also implements conjunctive water use through various incentive programs. Storage takes place in one of two ways: direct deliveries to storage, where MWD delivers replenishment water directly to water storage facilities, including spreading sites and injection wells. Or, in-lieu deliveries to storage, where MWD delivers additional water directly to the member agency's distribution system. The member agency then uses this water rather than pumping the groundwater it otherwise would have taken out of storage, leaving water in local storage for future use.

Conjunctive use agreements provide for storage of imported water that can be called for use by MWD during dry, drought or emergency conditions. During a dry period, MWD has the option to call (essentially, release) water stored in the groundwater basins pursuant to its contractual conjunctive use agreements. At the time of the call, the member agency pays MWD the prevailing rate for that water. Since 2007, MWD has drawn on dry-year supply from cyclic storage accounts with several member agencies, long-term replenishment programs and ten contractual conjunctive use storage programs to address shortages from the SWP.

MWD has developed a number of local programs to work with its member agencies to increase storage in groundwater basins. MWD encourages storage through its replenishment, cyclic and conjunctive use storage programs. These programs allow MWD to deliver water into a groundwater basin in advance of agency demands. Discounted replenishment service water is delivered when MWD has surplus imported water supply and is available for use after one year. Cyclic storage agreements allow pre-delivery of surplus imported water for recharge into groundwater basins in excess of an agency's planned and budgeted deliveries. This water can then be purchased at a later time when the agency has need for groundwater replenishment deliveries.

10. MWD Planned Local Water Supply Projects and Programs

As detailed in its 2010 RUWMP, MWD has a number of planned and in-process groundwater water recovery projects, recycled water projects and seawater desalination projects that are scheduled to come online between 2011 and 2025 to provide additional storage and reduce the need for potable water and new water sources. See Tables 4.19-S, 4.19-T and 4.19-U. These groundwater recovery projects include: the Chino Basin 2 and Chino Basin 3 desalters, which have ultimate yields/capacities of 11,760 AF and 10,000 AF, respectively; the Tujunga

Well Treatment and Irvine Ranch Water District Wells 51, 52, 53, 21 and 22, with ultimate yields/capacities of 24,000 AF and 12,700 AF, respectively; and 33 other projects with online dates between 2014 and 2020.

In addition, MWD has planned local recycled water projects that include the Joint Water Pollution Control Plant and the Carbon Canyon/Inland Empire Utilities Agency Regional Recycled Water Distribution System, which will have ultimate yields/capacities of 45,000 AF and 50,000 AF, respectively, as well as more than 80 other recycled water projects scheduled to go online between 2011 and 2020. MWD also has seven seawater desalination projects scheduled to go online between 2012 and 2025. This includes the Huntington Beach Seawater Desalination Project and the Carlsbad Seawater Desalination Project, both scheduled to go online in 2012 and provide with ultimate yields/capacities of 56,000 AF. These investments, in addition to MWD's current supplies, allow MWD to plan for a robust, reliable and flexible water supply that can supply the water needed for the expected growth in the region served by MWD.

Table 4.19-T: MWD Average Year Regional Water Demands

Water Source / Year* (in Acre-Feet)	2015	2020	2025	2030	2035
A. Total Demands[1]					
Retailing Municipal and Industrial (M&I)	4,978,000	5,170,000	5,330,000	5,491,000	5,627,000
Retail Agricultural	222,000	205,000	186,000	179,000	180,000
Seawater Barrier	71,000	72,000	72,000	72,000	72,000
Groundwater Replenishment	178,000	185,000	187,000	189,000	191,000
Subtotal A	**5,449,000**	**5,632,000**	**5,774,000**	**5,930,000**	**6,069,000**
B. Total Conservation					
Existing Active (through 2009)[2]	97,000	46,000	16,000	2,000	0
Code-based and Price-Effect	589,000	671,000	766,000	844,000	906,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
Subtotal B	**936,000**	**967,000**	**1,033,000**	**1,096,000**	**1,156,000**
C. SBX7-7 Water Conservation					
20% by 2020 Retail-Level Compliance	190,000	380,000	380,000	380,000	380,000
Subtotal C	**190,000**	**380,000**	**380,000**	**380,000**	**380,000**
D. Total Local Supplies					
Groundwater	1,429,000	1,430,000	1,429,000	1,431,000	1,431,000
Surface Water	103,000	102,000	102,000	102,000	102,000
Los Angeles Aqueduct	224,000	225,000	226,000	229,000	230,000
Groundwater Recovery	101,000	108,000	114,000	120,000	126,000
Total Recycling	348,000	375,000	394,000	410,000	426,000
Other Imported Supplies	190,000	281,000	288,000	288,000	288,000
Subtotal D	**2,395,000**	**2,522,000**	**2,553,000**	**2,581,000**	**2,603,000**
Total Metropolitan Demands (E=A-B-C-D)					
Full Service (Tier I and Tier II)	1,826,000	1,660,000	1,705,000	1,769,000	1,826,000
Replenishment Service[3]	102,000	103,000	103,000	104,000	105,000
Interim Agricultural Water Program[4]	0	0	0	0	0
Subtotal E	**1,928,000**	**1,763,000**	**1,808,000**	**1,874,000**	**1,931,000**
E. Firm Demands on Metropolitan[5]	**1,826,000**	**1,660,000**	**1,705,000**	**1,769,000**	**1,826,000**

Footnotes:
All units are acre-feet unless specified otherwise, rounded the nearest thousand. Totals may not sum due to rounding.
1. Growth projections are based on SCAG 2007 RTP and SANDAG Series 12 2050 Regional Growth Forecast (Feb 2010).
2. Includes code-based, price-effect and existing active savings through 2009; does not include future active conservation savings. 1990 is base year.
3. Replenishment Service per MWD Administrative Code Section 4114 includes direct and in-lieu replenishment.
4. IAWP deliveries will be phased out by 2013.
5. Firm demand on MWD equals Full Service demands plus 70% of the interim Agricultural Water Program demands.

Source: MWD, 2009 RUWMP, Table 2-8, page 2-14, 2009.

11. MWD Estimate of Minimum Supply Capabilities

The amount of water that can be delivered by MWD is based on the amount of water available in storage or that can be conveyed, weather conditions and water demands by end users, balanced against the need for both flexibility and reliability. In its RUWMP, MWD calculates water availability for 2015, 2020, 2025, 2030 and 2035 for existing water storage and delivery programs, including in-region storage and programs, the California Aqueduct and the Colorado River Aqueduct, with assumptions for multiple dry-years under hydrologic conditions similar to those of 1990-1992. See Tables 4.19-R, 4.19-S and 4.19-T, as well as the summaries in Tables 4.19-U, 4.19-V and 4.19-W.

Under these assumptions, and even without any of the additional water supply available from programs currently in development and scheduled to be completed within the relevant timeframe, MWD estimates a water surplus of between 12,000 and 237,000 AFY. Under wetter hydrologic conditions and with programs currently under development coming online, MWD estimates potential water surpluses of up to 3,155,000 AFY. See Tables 4.19-U, 4.19-V and 4.19-W. MWD's supplies are considered surplus as long as net annual deliveries can be made to water storage programs.

12. MWD Water Conservation and Best Management Practices (BMPs)

In order to most effectively address potential water shortages, in April 1999 MWD adopted a "Water Surplus and Drought Management Plan" (WSDM Plan). This plan provides guidelines for managing water resources to achieve the reliability goals of the Integrated Regional Plan, as well as the expected sequence of resource management actions that MWD will execute during surpluses and shortages to minimize the probability of severe shortages and reduce the possibility of extreme shortages and shortage allocations. The guiding principle of the WSDM Plan is to manage MWD's water resources and programs to maximize management of supplies in wet years and minimize adverse impacts of water shortages to retail customers. MWD does this, in part, through encouraging efficient water use and economical local resource programs, coordinating with sub-agencies to make surplus water available in dry years, pursuing transfer and banking options, and increasing public awareness about water supply issues. The plan also ensures that if mandatory import water allocations become necessary, they would be calculated on the basis of need, rather than historical purchases, and with consideration to impacts on consumers and the regional economy. Investments in local resources, population growth, local supplies and other specified considerations would also be taken into account to ensure equitable allocation of imported water.

Unlike MWD's previous shortage management plans, the WSDM Plan recognizes the link between surpluses and shortages, and it integrates planned operational actions with respect to both conditions. The WSDM plan defines five surplus management stages to guide the storage of surplus supplies in MWD's storage portfolio and also defines shortage management stages to guide resource management activities based on the amount of shortfall and the water balances in MWD's storage programs. Under almost all shortage conditions, MWD will be able to meet all end-use demands for water. For the most severe water shortages, MWD may undertake additional shortage management steps, including making public calls for extraordinary conservation, curtailing Interim Agricultural Water Program deliveries, exercising water transfer options or purchasing water on the open market. The overriding goal of the WSDM is to never reach the condition of extreme shortage.

Table 4.19-U: MWD Single Dry Year Regional Water Demands

Water Source / Year* (in Acre-Feet)	2015	2020	2025	2030	2035
A. Total Demands[1]					
Retailing Municipal and Industrial (M&I)	5,000,000	5,194,000	5,354,000	5,515,000	5,653,000
Retail Agricultural	231,000	213,000	193,000	186,000	186,000
Seawater Barrier	71,000	72,000	72,000	72,000	72,000
Groundwater Replenishment	177,000	184,000	186,000	188,000	191,000
Subtotal A	**5,480,000**	**5,662,000**	**5,804,000**	**5,961,000**	**6,101,000**
B. Total Conservation					
Existing Active (through 2009)[2]	97,000	46,000	16,000	2,000	0
Code-based and Price-Effect	589,000	671,000	766,000	844,000	906,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
Subtotal B	**936,000**	**967,000**	**1,033,000**	**1,096,000**	**1,156,000**
C. SBX7-7 Water Conservation					
20% by 2020 Retail-Level Compliance	190,000	380,000	380,000	380,000	380,000
Subtotal C	**190,000**	**380,000**	**380,000**	**380,000**	**380,000**
D. Total Local Supplies					
Groundwater	1,457,000	1,395,000	1,407,000	1,423,000	1,416,000
Surface Water	98,000	97,000	97,000	97,000	97,000
Los Angeles Aqueduct	66,000	66,000	66,000	66,000	66,000
Groundwater Recovery	101,000	108,000	114,000	120,000	126,000
Total Recycling	348,000	375,000	394,000	410,000	426,000
Other Imported Supplies	190,000	281,000	288,000	288,000	288,000
Subtotal D	**2,260,000**	**2,322,000**	**2,366,000**	**2,405,000**	**2,419,000**
Total Metropolitan Demands (E=A-B-C-D)					
Full Service (Tier I and Tier II)	1,991,000	1,889,000	1,921,000	1,974,000	2,039,000
Replenishment Service[3]	103,000	103,000	104,000	106,000	107,000
Interim Agricultural Water Program[4]	0	0	0	0	0
Subtotal E	**2,094,000**	**1,993,000**	**2,025,000**	**2,080,000**	**2,146,000**
E. Firm Demands on Metropolitan	**1,991,000**	**1,889,000**	**1,921,000**	**1,974,000**	**2,039,000**

* All units are acre-feet unless specified, rounded the nearest thousand. Totals may not sum due to rounding.

Footnotes:

1. Growth projections are based on SCAG 2007 RTP and SANDAG Series 12 2050 Regional Growth Forecast (Feb 2010).
2. Includes code-based, price-effect and existing active savings through 2009; does not include future active conservation savings. 1990 is base year.
3. Replenishment Service as defined in MWD Administrative Code Section 4114; direct and in-lieu replenishment.
4. IAWP deliveries will be phased out by 2013.
5. Firm demand on MWD equals full service demand + 70% of interim Agricultural Water Program demands.

Source: MWD, 2009 RUWMP, Table 2-6, page 2-12, 2009.

MWD has also adopted a Water Supply Allocation Plan (WSAP) that includes a specific formula for calculating member agency supply allocations and key implementation elements needed for administering an allocation. The WSAP formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of MWD supplies of up to 50%. The formula takes into account growth, local investments, changes in supply conditions and demand-hardening aspects of non-potable recycled water use and the results from conservation savings programs.

Table 4.19-V: MWD Multiple Dry Year Regional Water Demands

Water Source / Year* (in Acre-Feet)	2015	2020	2025	2030	2035
A. Total Demands[1]					
Retailing Municipal and Industrial (M&I)	5,004,000	5,232,000	5,409,000	5,572,000	5,715,000
Retail Agricultural	231,000	214,000	195,000	185,000	184,000
Seawater Barrier	71,000	71,000	72,000	72,000	72,000
Groundwater Replenishment	172,000	184,000	187,000	188,000	190,000
Subtotal A	**5,478,000**	**5,702,000**	**5,862,000**	**6,017,000**	**6,161,000**

Water Source / Year* (in Acre-Feet)	2015	2020	2025	2030	2035
B. Total Conservation					
Existing Active (through 2009)[2]	97,000	46,000	16,000	2,000	0
Code-based and Price-Effect	589,000	671,000	766,000	844,000	906,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
Subtotal B	**936,000**	**967,000**	**1,033,000**	**1,096,000**	**1,156,000**
C. SBX7-7 Water Conservation					
20% by 2020 Retail-Level Compliance	190,000	380,000	380,000	380,000	380,000
Subtotal C	**190,000**	**380,000**	**380,000**	**380,000**	**380,000**
D. Total Local Supplies					
Groundwater	1,386,000	1,389,000	1,389,000	1,397,000	1,396,000
Surface Water	91,000	91,000	91,000	91,000	91,000
Los Angeles Aqueduct	63,000	67,000	71,000	75,000	78,000
Groundwater Recovery	100,000	107,000	113,000	119,000	125,000
Total Recycling	340,000	370,000	390,000	407,000	423,000
Other Imported Supplies	191,000	282,000	288,000	288,000	288,000
Subtotal D	**2,171,000**	**2,305,000**	**2,343,000**	**2,378,000**	**2,402,000**
Total Metropolitan Demands (E=A-B-C-D)					
Full Service (Tier I and Tier II)	2,056,000	1,947,000	2,003,000	2,059,000	2,119,000
Replenishment Service[3]	97,000	102,000	103,000	104,000	104,000
Interim Agricultural Water Program[4]	0	0	0	0	0
Subtotal E	**2,154,000**	**2,049,000**	**2,106,000**	**2,163,000**	**2,224,000**
E. Firm Demands on Metropolitan	**2,056,000**	**1,947,000**	**2,003,000**	**2,059,000**	**2,119,000**

* All units are acre-feet unless specified, rounded the nearest thousand. Totals may not sum due to rounding.

Footnotes:

1. Growth projections are based on SCAG 2007 RTP and SANDAG Series 12 2050 Regional Growth Forecast (Feb 2010).
2. Includes code-based, price-effect and existing active savings through 2009; does not include future active conservation savings. 1990 is base year.
3. Replenishment Service as per MWD Administrative Code Section 4114 includes direct and in-lieu replenishment.
4. IAWP deliveries will be phased out by 2013.
5. Firm demand on MWD equals full service demands plus 70% of the interim agricultural water program demands.

Source: MWD, 2009 RUWMP, Table 2-7, page 2-13, 2009.

Table 4.19-W: MWD Local Supplies Within MWD Service Area, Average Year and Single Dry Year

	2015 (in Acre-Feet)[1]		2025 (in Acre-Feet)[1]		2035 (in Acre-Feet)[1]	
Water Supply Type	**Average Year**	**Dry Year[2]**	**Average Year**	**Dry Year[2]**	**Average Year**	**Dry Year[2]**
Local Groundwater						
From Natural Recharge	1,251,000	1,214,000	1,242,000	1,202,000	1,240,000	1,206,000
From Replenishment	178,000	172,000	187,000	187,000	191,000	190,000
Local Projects						
Groundwater Recovery	101,000	100,000	114,000	113,000	126,000	125,000
From Recycling	264,000	258,000	303,000	229,000	333,000	330,000
Seawater Desalination	0	0	0	0	0	0
Local Runoff Stored	103,000	91,000	102,000	91,000	102,000	91,000
Los Angeles Aqueduct	224,000	63,000	226,000	71,000	230,000	78,000
IID/SDCWA Transfer	100,000	100,000	200,000	200,000	200,000	200,000
Coachella Canal and All American Canal Lining	80,000	80,000	80,000	80,000	80,000	80,000
Total	**2,301,000**	**2,078,000**	**2,454,000**	**2,243,000**	**2,502,000**	**2,300,000**

Footnotes:

1. All data in acre-feet (AF), rounded the nearest thousand. Totals may not sum due to rounding.
2. Dry Year is based on Multiple Dry Years (1990-1992).

Source: MWD, 2009 RUWMP, Table 1-5, page 1-23, 2009.

Table 4.19-X: MWD Multiple Dry Year Supply Capability

Forecast Year[1]	2011 (AF)	2012 (AF)	2013 (AF)
Current Programs			
In-Region Storage	351,000	50,000	17,000
California Aqueduct[2]	582,000	625,000	611,000
Colorado River Aqueduct[3]	998,000	932,000	937,000
Subtotal	***1,931,000***	***1,607,000***	***1,565,000***
Programs Under Development			
In-Region Storage	12,000	12,000	12,000
California Aqueduct[2]	23,000	30,000	374,000
Colorado River Aqueduct[3]	176,000	176,000	176,000
Subtotal	***211,000***	***218,000***	***562,000***
Maximum Supply Capability	***2,142,000***	***1,825,000***	***2,127,000***

Footnotes:
1. Represents Supply Capability for resource programs under listed year type. (Repeat of 1990-1992 hydrologies.)
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings. Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.

Source: MWD, 2009 RUWMP, Table 1-6, page 99.

Table 4.19-Y: MWD Summary of Single Dry Year Supply and Demand Projections

Forecast Year (in AF)*	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	685,000	931,000	1,076,000	964,000	830,000
California Aqueduct[2]	522,000	601,000	651,000	609,000	610,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,416,000	1,824,000	1,669,000	1,419,000	1,419,000
Aqueduct Capacity Limit[4]	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability[1] of Current Programs	**2,457,000**	**2,782,000**	**2,977,000**	**2,823,000**	**2,690,000**
Demands					
Firm Demands of Metropolitan	1,991,000	1,889,000	1,921,000	1,974,000	2,039,000
IID-SDCWA Transfers and Canal Linings	180,000	273,000	280,000	280,000	280,000
Total Demands on Metropolitan[5]	**2,171,000**	**2,162,000**	**2,201,000**	**2,254,000**	**2,319,000**
Surplus	**286,000**	**620,000**	**776,000**	**569,000**	**371,000**
Programs Under Development					
In-Region Storage and Programs	206,000	306,000	336,000	336,000	336,000
California Aqueduct	556,000	556,000	700,000	700,000	700,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	0	0	0	0	0
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**762,000**	**862,000**	**1,036,000**	**1,036,000**	**1,036,000**
Potential Surplus	**1,048,000**	**1,482,000**	**1,812,000**	**1,605,000**	**1,407,000**

* All data in acre-feet (AF), rounded the nearest thousand. Totals may not sum due to rounding.

Footnotes:
1. Represents Supply Capability for resource programs under listed year type. (Repeat of 1977 hydrology.)
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings.
4. Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.
5. Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Source: MWD, 2009 RUWMP, Table 2-9, page 2-17, 2009.

13. MWD Demand Management Measures

MWD's conservation programs are closely linked to the efforts of the California Urban Water Conservation Council (CUWCC), the organization created to administer the Urban MOU. As a signatory to the Urban MOU, MWD has pledged to make a good faith effort to implement a prescribed set of urban water conservation best management practices (BMPs). MWD also provides technical and financial support to member agencies to help in meeting the terms of the Urban MOU and has submitted its recent demand management (DMM) reports to the CUWCC to comply with RUWMP requirements (see Appendix A.6 of the RUWMP). In addition, MWD's RUWMP also includes discussion of its conservation plans and approach, see Section 3.4 of that document for more information.

Table 4.19-Z: MWD Summary of Multiple Dry Year Supply and Demand Projections

Forecast Year (in Acre-Feet)*	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	246,000	373,000	435,000	398,000	353,000
California Aqueduct[2]	752,000	794,000	835,000	811,000	812,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,318,000	1,600,000	1,417,000	1,416,000	1,416,000
Aqueduct Capacity Limit[4]	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,248,000**	**2,417,000**	**2,520,000**	**2,459,000**	**2,415,000**
Demands					
Firm Demands of Metropolitan	2,056,000	1,947,000	2,003,000	2,059,000	2,119,000
IID-SDCWA Transfers and Canal Linings	180,000	241,000	280,000	280,000	280,000
Total Demands on MWD[5]	**2,236,000**	**2,188,000**	**2,283,000**	**2,339,000**	**2,399,000**
Surplus	**12,000**	**229,000**	**237,000**	**120,000**	**16,000**
Programs Under Development					
In-Region Storage and Programs	162,000	280,000	314,000	336,000	336,000
California Aqueduct[2]	242,000	273,000	419,000	419,000	419,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	0	0	0	0	0
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**404,000**	**553,000**	**733,000**	**755,000**	**755,000**
Potential Surplus	**416,000**	**782,000**	**970,000**	**875,000**	**771,000**

* All data in acre-feet (AF), rounded the nearest thousand. Totals may not sum due to rounding.

Footnotes:

1. Represents Supply Capability for resource programs under listed year type. (Repeat of 1990-1992 hydrologies.)
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings.
4. Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.
5. Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Source: MWD, 2009 RUWMP, Table 2-10, page 2-18.

Table 4.19-AA: MWD Summary of Average Year Supply and Demand Projections

Forecast Year (in AF)*	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	685,000	931,000	1,076,000	964,000	830,000
California Aqueduct[2]	1,550,000	1,629,000	1,763,000	1,733,000	1,734,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,507,000	1,529,000	1,472,000	1,432,000	1,429,000
Aqueduct Capacity Limit[4]	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**3,485,000**	**3,810,000**	**4,089,000**	**3,947,000**	**3,814,000**

Forecast Year (in AF)*	2015	2020	2025	2030	2035
Demands					
Firm Demands of Metropolitan	1,826,000	1,660,000	1,705,000	1,769,000	1,826,000
IID-SDCWA Transfers and Canal Linings	180,000	273,000	280,000	280,000	280,000
Total Demands on MWD[5]	**2,006,000**	**2,1933,000**	**1,985,000**	**2,049,000**	**2,106,000**
Surplus	**1,479,000**	**1,877,000**	**2,104,000**	**1,898,000**	**1,708,000**
Programs Under Development					
In-Region Storage and Programs	206,000	306,000	336,000	336,000	336,000
California Aqueduct[2]	382,000	383,000	715,000	715,000	715,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	0	0	0	0	0
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**588,000**	**689,000**	**1,051,000**	**1,051,000**	**1,051,000**
Potential Surplus	**2,067,000**	**2,566,000**	**3,155,000**	**2,949,000**	**2,759,000**

* All data in acre-feet (AF), rounded the nearest thousand. Totals may not sum due to rounding.

Footnotes:

1. Represents Supply Capability for resource programs under listed year type.
2. California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
3. Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings.
4. Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.
5. Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Source: MWD, 2009 RUWMP, Table 2-11, page 2-19, 2009.

a. Regional Conservation Programs

SoCal Water$mart: In July 2008, MWD initiated a new region-wide residential rebate program called, 'SoCal Water$mart.' During its first year of operation, rebate activity exceeded expectations as many residential customers became increasingly aware of the financial incentives available to them to help offset the purchase of water-efficient devices. MWD issued a record 54,000 rebates for residential fixtures totaling $10 million in fiscal year 2008/09, resulting in approximately 2,300 AF of water to be saved annually.

Save Water, Save-A-Buck (Multi-Family): MWD's regional 'Save-A-Buck' program extends rebates to multi-family dwellings. More than 40,000 rebates were issued fiscal year 2008/09 for high-efficiency toilets and washers for multi-family units within Southern California.

Member Agency Residential Programs: In addition to regional programs implemented by MWD, its member and retail agencies also implement local water conservation programs within their respective service areas and receive MWD incentives for qualified retrofits and other water-saving actions. Typical projects include toilet replacements, locally administered clothes washer rebate programs and residential water audits. MWD provides incentives on a variety of water-efficient devices for the residential sector. The following current and past devices contribute to projected conservation savings:

- **High-Efficiency Clothes Washers (HECWs):** MWD has supplemented its HECW rebate using state or federal grants whenever possible. The water efficiency of clothes washers is represented by the 'water factor,' which is a measure of the amount of water used to wash a standard load of laundry. Washers with a lower water factor save more water. MWD has continued to move the market by changing its program requirement to lower water factors. The program eligibility requirement is currently set at water factor 4.0, which saves over 10,000 gallons per year per washer over a conventional top loading washer.

- **High-Efficiency Toilets and Ultra-Low-Flush Toilets:** MWD has provided incentives for toilet programs since 1988. Currently, MWD only provides funding for high-efficiency toilets (1.28 gallons per

flush or less), which use 20% less water than ultra-low-flush toilets (1.6 gallons per flush). Ultra-low-flush toilets are the current standard defined by the plumbing code. MWD uses the EPA-listed WaterSense toilets in its programs as qualifying models.

- **Irrigation Evaluations and Residential Surveys:** MWD provides funding to its member agencies that choose to implement irrigation evaluations and indoor surveys for residents. Irrigation evaluations provide customers with a recommended irrigation schedule and suggested improvements for irrigation systems. Indoor residential surveys provide customers with information on identifying leaks and upgrading water-using devices in the home.

- **Rotating Nozzles for Sprinklers:** Pop-up spray heads with multi-stream, multi-trajectory rotating nozzles represent a new alternative to the irrigation of landscapes. Field tests demonstrate these devices apply water more evenly than traditional nozzles with fixed conical spray patterns, offering the potential for significant water savings. Low precipitation rates associated with these nozzles can reduce run-off and related pollution, thereby offering a substantial value-added benefit when irrigating sloping landscapes.

- **Weather-Based Irrigation Controllers:** Weather-based irrigation controllers (WBICs) are a rapidly evolving conservation technology. Rather than relying on periodic manual adjustments, WBICs adjust irrigation schedules based on rain, temperature, sunlight, soil moisture or a combination of indicators. MWD began funding WBIC incentives in homes after conducting a pilot study that evaluated potential savings and ease of use.

- **Synthetic Turf:** From July 2007 through June 2010, MWD offered an incentive for synthetic turf based on a pilot project conducted with financial assistance from the U.S Bureau of Reclamation. Synthetic turf provides water savings benefits as a replacement for irrigated turf and lawn areas.

b. Commercial, Industrial and Institutional (CII) Programs

CII Save Water, Save-A-Buck Program: The majority of its CII conservation activity comes from MWD's regional Save-A-Buck program. The program had its largest year in fiscal year 2008/09, providing about $8.8 million in rebates for approximately 145,000 device retrofits.

Water Savings Performance Program: This program provides financial incentives for documented water savings for landscape irrigation and industrial process improvements. This program allows large-scale water users to customize conservation projects and receive incentives for five years of water savings for capital water-use efficiency improvements.

Member Agency Commercial Programs: Member and retail agencies also implement local commercial water conservation programs using MWD incentives. Projects target specific commercial sectors, with many programs also receiving assistance from state or federal grant programs. MWD incentives are used as the basis for meeting cost-share requirements.

Public Sector Water Efficiency Partnership Demonstration Program: From August 2007 through 2008, MWD offered a one-time program to provide up-front funding to increase water use efficiency in public buildings and landscapes within its service area through its Public Sector Demonstration Program. The program was designed to reinforce the region's conservation message by demonstrating willingness for public agencies to respond to the call to save water. Participants included various special districts, school districts, state colleges and universities, municipalities, counties and other government agencies. There were four components of the

program: (1) water audits; (2) enhanced incentives; (3) pay-for-performance; and (4) recycled water hook-up. Free water audits were provided and water use experts created an equipment inventory list and made recommendations for replacements or upgrades, with a written report provided as a guide to initiating equipment upgrades. Enhanced incentives were provided to replace high water-use equipment including toilets, urinals and irrigation controllers. Program incentives were often sufficient to cover the total cost of the equipment. Pay-for-performance incentives were also offered to reduce landscape irrigation water use by at least 10% through behavioral modifications. The CII programs provide rebates for water-saving plumbing fixtures, landscaping equipment, food-service equipment, cleaning equipment, HVAC (heating, ventilating, air conditioning) and medical equipment.

c. Research and Development Programs

The Innovative Conservation Program provides funding to individuals and organizations to test new technologies. The Enhanced Conservation Program provides funding directly to MWD's member agencies to encourage new and creative approaches to implement urban water conservation.

d. Water Conservation Ordinances

In June 2008, MWD adopted a Water Supply Alert resolution following Governor Arnold Schwarzenegger's proclamation of a statewide drought. Among other provisions, the alert encouraged cities, counties and local public water agencies to adopt and enforce local water conservation ordinances. To facilitate ordinance adoption, MWD compiled a library of available local ordinances, developed a model water conservation ordinance and hosted several workshops. As a result, approximately half of the 19 million residents in MWD's service area are now covered by adopted ordinances and an additional one-third reside in jurisdictions that have taken action toward adoption of ordinances.

e. New Construction Programs

With grants from the USBR and the State of California, MWD offered financial incentives through the California Friendly® New Home Program. Through it, builders of new single-family model homes and multi-family developments are encouraged to incorporate water-efficient fixtures and landscapes, including high-efficiency toilets and clothes washers, smart irrigation controllers and landscapes designed with appropriate plant palettes and efficient irrigation systems. California Friendly® model homes showcase residential water efficiency, helping to increase consumer awareness of water-conserving features and provide inspiration for water-conserving landscapes. Since program inception in 2003, MWD has provided incentives to eight homebuilders for more than 220 new homes with over 300,000 square feet of landscape.

f. Conservation Funding

MWD's Conservation Credits Program (CCP) provides financial incentives and funding for urban BMPs and other demand management-related activities. Established in 1988, this funding mechanism supports MWD's commitment to conservation as a long-term water management strategy. Project proposals must: have demonstrable water savings; reduce water demands on MWD's system; be technically sound; and require MWD's participation to make the project financially and economically feasible. Additional funding for conservation programs has been made available through government agencies. MWD has worked to obtain a share of this funding to enhance the region's water conservation investments.

g. Measurement and Evaluation

MWD staff have served as technical advisors for a number of state and national studies involving the quantification and valuation of water savings for the purposes of: providing a means to measure and evaluate the effectiveness of current and potential conservation programs; developing reliable estimates of various conservation programs and assessing the relative benefits and costs of these interventions; providing technical assistance and support to member agencies in the areas of research methods, statistics and program evaluation; and documenting the results and the effectiveness of MWD-assisted conservation efforts.

h. Other Conservation

MWD has conducted annual advertising, education and community outreach campaigns since 2003 under its bewaterwise.com® and California Friendly® brands to urge Southern California consumers and business owners to make permanent changes in their everyday uses of water. From 2007 through 2010, MWD's Board of Directors authorized an expansion of these efforts in order to meet the critical water supply crisis facing the state. Outreach campaigns in the latter part of the decade reflected these unprecedented challenges with more urgent calls for water conservation behavior. Creative ads, such as "Time to Get Serious" and "Cut Your Water Use," were seen and heard across more media outlets at higher frequency levels and over longer periods than pre-2007 campaigns. MWD was also a lead sponsor of the "California's Water: A Crisis We Can't Ignore" statewide campaign with the Association of California Water Agencies in fall 2007. Leading up to the summer of 2009, MWD's "Move the Needle" outreach campaign (featuring a water supply gauge nearing empty) communicated the change from voluntary to mandatory water conservation in many Southern California cities and communities. MWD's California Friendly® Landscape Training Program offers courses in irrigation efficiency and water-wise garden design. Nearly 9,000 landscape maintenance professionals and residents attended the workshops in 2008-2009 in English and Spanish.

14. MWD Recycled Water

In the 1990s, the U.S. Bureau of Reclamation (USBR), in cooperation with MWD, DWR and six other Southern California water agencies, studied the feasibility of regional water reclamation projects in Southern California and identified 34 potential regional projects within MWD's service area with an estimated yield of 450,000 AF per year. MWD and its member agencies continue to explore these and other projects and to develop updated plans on a regular basis. MWD has identified a potential for more than 1.0 million AF of recycled water to be developed by 2050. The majority of these projects are currently in conceptual planning phases. There are about 335,000 AF per year of planned and permitted uses of recycled water throughout MWD's service area. These include landscape irrigation, commercial and industrial use, seawater intrusion barriers and groundwater recharge applications. It is anticipated that about 458,000 AF per year of new recycled water could be developed in MWD's service area by the year 2035. A number of these projects are currently being implemented and will go on-line within the next five years. Other projects are in various stages of planning and their development will depend on cost, financing, regulatory actions and water supply demands.

15. MWD Conclusion

The 2010 RUWMP demonstrates that MWD has supply capabilities that will be sufficient to meet expected demands from 2010 through 2035 under normal, single dry-year and multiple dry-year conditions. MWD has comprehensive plans for handling up to a 50% reduction in its available water supplies and catastrophic water interruptions in its Water Surplus Plan and its Drought Management and Water Supply Allocation Plans. MWD also has an emergency storage requirement to mitigate against potential interruption in water supplies resulting

from a catastrophe in Southern California, including a seismic event along the San Andreas Fault. In addition, MWD is working with the State of California to implement a comprehensive improvement plan to address catastrophic occurrences outside of Southern California, such as a large seismic event hitting the Delta and causing levee failure and SWP delivery disruption. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the CRA, SWP, Central Valley transfers, local resource projects and in-region storage which together enable the region to meet its water supply needs and continue to enable a surplus to prepare for future dry years.

Based on the 2010 RUWMP, MWD's overall water demand will total 2.0 million AF in 2015 and increase to 2.1 million AF by 2035. Based on existing supply capabilities, MWD has determined that it can meet 100% of its member agencies' projected supplemental demands over that period for average, single-dry and multiple dry-year scenarios. With the addition of all water supplies that are under development, MWD will further increase its reserve supplies. Additionally, MWD finds in its 2010 RUWMP that there are no water quality issues that would insurmountably affect water supply.

F. Local Water Providers in Western Riverside County

As mentioned previously, in western Riverside County, MWD serves the two major wholesalers (EMWD and WMWD) that serve the region. Another State Water Contractor, San Bernardino Valley Municipal Water District (SBVMWD), also provides SWP water to retailers in Riverside County: West Valley Water District, Yucaipa Water District and the City of Riverside. Though located in San Bernardino County, SBVMWD is included in this EIR since it serves Riverside County providers and utilizes (or affects) groundwater basins used by Riverside County providers. The three major providers are discussed in brief below, along with notes on the retail providers they serve. Additional information on each may also be found in Appendix EIR-8.

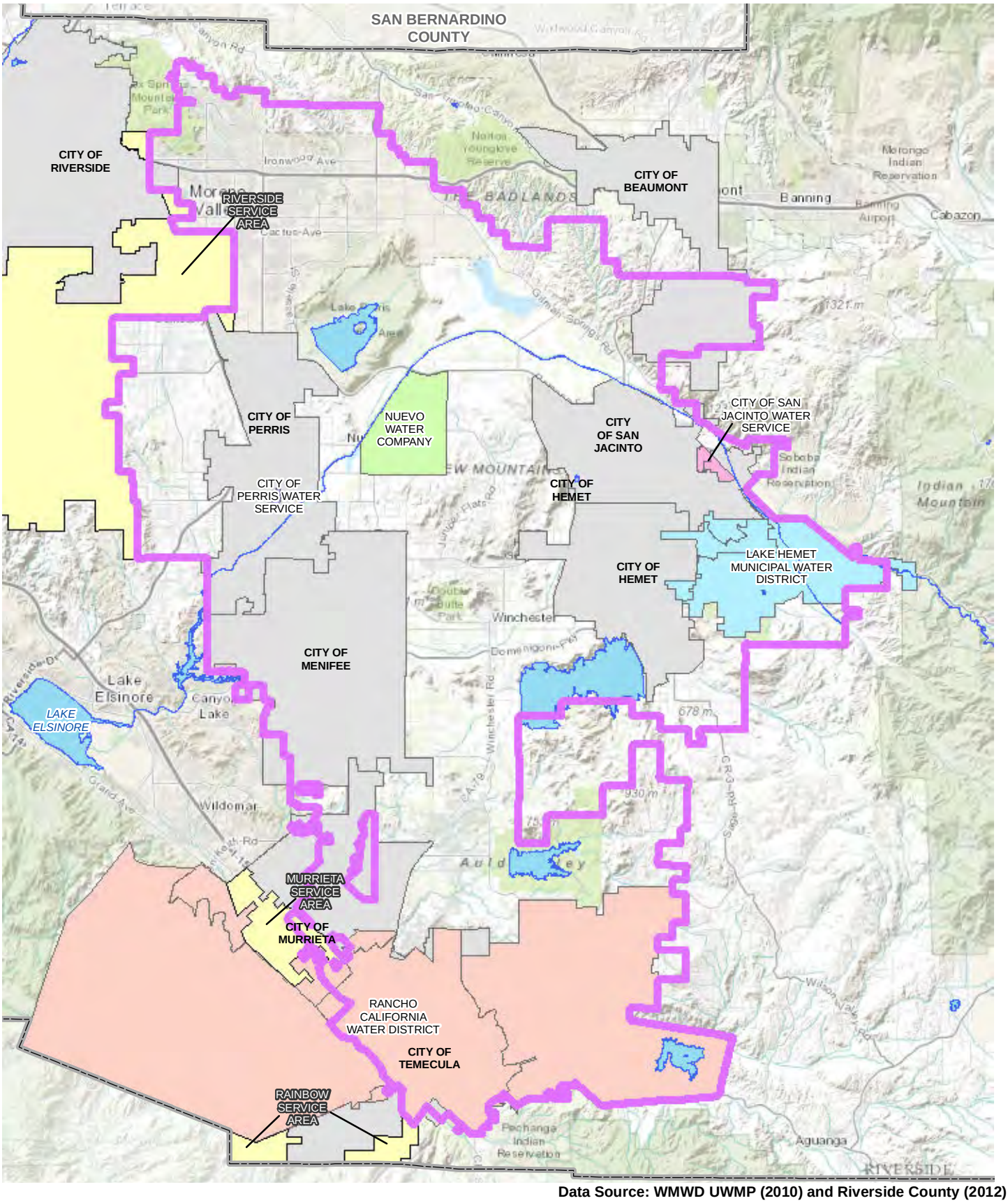
In western Riverside County, all of the local retail providers rely at least in part on imported water except for the Jurupa and the Rubidoux Community Services Districts in northwestern-most Riverside County. These two providers are described separately in the section discussing local water providers that rely on groundwater only, later in this chapter.

1. Eastern Municipal Water District

Eastern Municipal Water District (EMWD), a public water agency, was formed in 1950 and annexed into MWD a year later. As one of MWD's 26 member-agencies, it receives imported water supplies from both Northern California via the SWP and from the Colorado River Aqueduct (CRA) and provides wholesale water to six sub-agencies of its own, as well as to its own retail customers. See Figure 4.19.20 (Map of EMWD's Service Area). EMWD's 2010 Urban Water Management Plan (UWMP) covers a variety of issues related to water supply, demand and reliability. Additional information about this water district is provided in Appendix EIR-8.

a. Notes on EMWD

EMWD has four existing sources of water supply: imported MWD water, recycled water, local groundwater and desalted groundwater. Imported water (from MWD) is either delivered directly as potable water, delivered as raw water and treated at EMWD's two local filtration plants, or delivered as raw water for non-potable use. For the past six years, imported water has remained proportionally consistent or decreased, even as EMWD added over 20,000 new water connections, through constructing desalination facilities, increasing recycled water use and improving water efficiency, all which have also increased supply reliability.



Data Source: WMWD UWMP (2010) and Riverside County (2012)

December 16, 2013

EMWD Service Area

Figure 4.19.20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

EASTERN MUNICIPAL WATER DISTRICT SERVICE AREA

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The majority of EMWD's current and projected water supplies are imported through the MWD. Potable imported water is delivered directly from MWD's two large filtration plants and then EMWD's microfiltration plants in Hemet and Perris remove particulate contaminants to achieve the applicable potable water standards. Untreated water from MWD is also percolated into groundwater in the eastern service area, used for agricultural purposes in the northeast and in the south by RCWD. Recycled, highly treated wastewater is also used for many purposes including agriculture, landscape irrigation and industrial use through an intricate web of pipelines from EMWD's four Regional Water Reclamation Facilities as well as several storage ponds.

Table 4.19-AB: Eastern Municipal Water District Background Information

Sub-Agencies Served[1]			**Cities and Communities Served[2]**		
City of Hemet Water Department			City of Hemet		Lakeview
City of Perris Water Department			City of Menifee		Nuevo
City of San Jacinto Water Department			City of Moreno Valley		Quail Valley
Lake Hemet Municipal Water District (LHMWD)[5]			City of Murrieta		Romoland
North Perris Water Company[6]			City of Perris		Valle Vista
Nuevo Water Company			City of San Jacinto		Winchester
Rancho California Water District (RCWD)[5]			City of Temecula		
Service Area Statistics[3]					
Size	352,000 acres		***CA Hydrologic Region***	South Coast	
Population	520,000 people		***Regional WQCB***	8 – Santa Ana	
Services Provided[3]					
Distribution	X	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	X	Retail Water		_	Desalination
	X	Recycled or Non-Pot. Water		X	Groundwater Recharge
	X	Wastewater (Collection)		X	Wastewater Treatment

Footnotes:
1. Unless noted otherwise, the District provides wholesale water to these sub-agencies.
2. City/community may be served by this district either wholly or partially. Areas in which only a small fragment are served by the water district or are outside of the district's formal service area may be omitted for clarity.
3. Services and service area statistics from Riverside LAFCO, 2005 Water and Wastewater Municipal Service Review.
4. Only facilities operated directly by the listed water agency included.
5. EMWD provides non-potable agricultural water. For LHMWD, EMWD only supplies non-potable water.
6. EMWD provides emergency back-up service only.

Source: EMWD, UWMP, 2010. Riverside LAFCO, Water and Wastewater Municipal Service Review Report, 2005.

The Hemet/San Jacinto area contains good quality water and is a major source of municipal as well as private production, although water levels are in serious decline. The groundwater used by EMWD comes from wells located mostly within the San Jacinto watershed and serving the northern portion of EMWD's service area. EMWD produces potable groundwater from two areas within the San Jacinto watershed, each covered by a management plan: the West San Jacinto (WSJ) Groundwater Basin Management Plan area and the Hemet/San Jacinto (HSJ) Water Management Plan area. The WSJ area is subject to an existing groundwater management plan. In the Hemet/San Jacinto Plan area, EMWD's groundwater production is currently constrained by the 1954 Fruitvale Judgment and Decree. See Appendix EIR-8 for additional details on Fruitvale and other water rights issues. In accordance with the Judgment and Decree, the Hemet/San Jacinto Water Management Plan was completed in 2011 in order to ensure the safe, productive use of the basin.

Table 4.19-AC: EMWD Water and Wastewater Service Data

WATER SERVICE DATA

Water Supply (AF)		Water Connections		Water Service Capacity	
Wholesale	79,500	Domestic	91,800	Total Capacity (AF)	98,600
State W Project	0	Irrigation	900	Total Demand (AF)	98,600
Surface	0	M&I	2,800	Peak Capacity (mgd)	200
Wells	19,000	Reclaimed	200	Peak Demand (mgd)	200
Reclaimed	25,000	Other	NP	Storage Capacity (mgd)	0

Water Sources / Suppliers[1]		Water Treatment Facilities[1]		Facility Notes
Import Provider	MWD	Filtration Plants	2	*Plants treat imported water*
Number of Wells	NP	Desalination	2	---
		GW Recharge	4	*See wastewater treatment plant info, below*

LOCAL WATER SOURCES[1]

	Source	Amount (AFY)	Notes
Surface Water	San Jacinto River	5,800	Ephemeral; used for GW recharge only
	Basin (Basin No.)[2]	**Amount (AFY)**	**Notes**
Groundwater	San Jacinto (8-5)[4]	10,900	Base amount per Decree.
	Temecula Valley (9-5)[5]	0	No GW pumping in the Santa Margarita watershed.

Other Notes 81% imported / 19% local GW. Service area "approx. 40% built out" per EMWD 2010 UWMP.

WASTEWATER SERVICE DATA

System Size (miles)		Sewer Connections (#)		Recycled Water Uses	
Gravity Sewer	1,440	Domestic	165,000	X Irrigation	X Industrial / Utility Use
Force Main	660	Commercial	2,500	X Agriculture	X Groundwater Recharge
Other	---	Industrial	NP		

WASTEWATER TREATMENT FACILITIES

Plant No.	CURRENT		PLANNED[3]		PLANT TOTAL
	Treatment	Capacity (TAFY)	Treatment	Add'l Capacity (TAFY)	Total Capacity (TAFY)
1	Tertiary	17.9	---	8.1	***26.0***
2	Tertiary	16.8	---	21.2	***38.0***
3	Tertiary	12.3	---	1.7	***14.0***
4	Tertiary	20.2	---	---	***20.2***
Totals		***67.2***		***30.9***	***98.2***

Key: NP = not provided (in LAFCO Report) NA = not available --- denotes no change or not applicable
NS = not specified (gen. interchangeable) TAFY = thousand acre-feet per year

Footnotes:
1. Information / data from EMWD's 2010 UWMP. All other information from LAFCO MSR Report.
2. Basin numbers as per DWR Bulletin 118.
3. New facility if no 'current' data listed; otherwise *additional* capacity or treatment process upgrade indicated.
4. Adjudicated basin (Fruitvale Judgment and Decree). See Appendix EIR-8 for more information.
5. Adjudicated basin overseen by Santa Margarita River Watermaster. See Appendix EIR-8 for more information.

Source: Riverside LAFCO, Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005.

Table 4.19-AD: EMWD Water Supply and Demand Summary

DATA SUMMARY					Eastern Municipal Water District	
DATA[1]	2010	2015	2020	2025	2030	2035
Population (No. of Accounts)	138,700	153,300	163,700	184,800	204,500	220,900
EXISTING SUPPLIES[2]						
Water Budget – Average Year (in AF)						
Import	NP	149,300	170,700	190,700	210,000	226,200
Groundwater	NP	13,200	13,200	13,200	13,200	13,200
Recycle/Other[3]	NP	51,400	57,500	61,400	62,400	62,800
Supply Total	***NP***	***213,900***	***241,400***	***265,300***	***285,600***	***302,200***
Demand Total	NP	213,900	241,400	265,300	285,600	302,200
Net Supply	NP	0	0	0	0	0
Water Budget – Single Dry Year (in AF)						
Import	NP	155,300	177,600	198,300	218,300	235,100
Groundwater	NP	13,200	13,200	13,200	13,200	13,200
Recycle/Other[3]	NP	53,000	59,300	63,300	64,400	64,800
Supply Total	***NP***	***221,500***	***250,100***	***274,800***	***295,900***	***313,100***
Demand Total	NP	~~221,500~~	~~250,100~~	~~274,800~~	~~295,900~~	~~313,100~~
Net Supply	NP	0	0	0	0	0
Water Budget – Multiple Dry Years (in AF)						
Import	NP	155,300	177,600	198,300	218,300	235,100
Groundwater	NP	13,200	13,200	13,200	13,200	13,200
Recycle/Other[3]	NP	53,000	59,300	63,300	64,400	64,800
Supply Total	***NP***	***221,500***	***250,100***	***274,800***	***295,900***	***313,100***
Demand Total	NP	~~221,500~~	~~250,100~~	~~274,800~~	~~295,900~~	~~313,100~~
Net Supply	NP	0	0	0	0	0
Base Adequacy	***NP***	***yes***	***yes***	***yes***	***yes***	***yes***
FUTURE SUPPLIES						
Planned / Potential (Additional) Water Supply (in AF)						
Recycled	---	6,100	13,500	16,400	22,200	28,200
Desalination	---	4,500	4,500	4,500	4,500	4,500
Additional Conserv.	---	0	0	1,300	4,300	6,400
Future Total	***---***	***10,600***	***18,000***	***22,200***	***31,000***	***39,100***

Footnotes:
1. All data from UWMP, unless noted otherwise. All data rounded to nearest hundred
2. Water years used (for average, dry and multi-year dry benchmarks): 2004-2009, 1977 and 1990-1992.
3. Recycled water system plus desalter output.

Source: Eastern Municipal Water District, Urban Water Management Plan, 2010.

Since the area's native potable groundwater production is limited, or will be limited according to management plan provisions, to prevent continued overdraft, EMWD developed alternatives to assure reliability. Pursuant to its Integrated Recharge and Recovery Program (IRRP), filtration plants treat and deliver imported water to areas previously dependent on groundwater, and recycled water is provided for landscape and agriculture irrigation. Portions of EMWD also overlay the Santa Margarita watershed, but EMWD does not extract groundwater from it and states it has no plans to do so. Two EMWD desalination plants also convert brackish groundwater into potable water in the Sun City area and support EMWD's groundwater salinity management program.

b. EMWD Water Availability

According to EMWD's 2010 UWMP, plans are in place to recharge local groundwater with imported or recycled water and to desalinate groundwater to reduce import demands and provide a sustainable supply. The basins' Water Management Plans limit the amount of water being extracted from the basins to a sustainable yield and the continued recharge of the Hemet/San Jacinto basin using imported water pursuant to the IRRP will ensure that

basin overdraft is eliminated and avoided in the future. Planned local supplies will supplement imported supplies and improve reliability for EMWD and the region.

EMWD also aggressively promotes efficiency through implementation of local ordinances, conservation programs and a tiered pricing structure to reduced retail account demands. Reducing demand allows existing and proposed water supplies to stretch farther and reduces the potential for water supply shortage. Because EWMD also expects water efficiency savings from future recycled water, desalination and planned additional conserved water transfers/exchanges, the district also has a potential surplus which could offset future growth in excess of that planned, if necessary, or buffer against imported water supply variability, SWP water in particular. Altogether, for these reasons, EMWD has concluded that it has the ability to meet current and projected water demands through 2035 during normal, historic single-dry and historic multiple-dry years using existing supplies and imported water from MWD with existing supply resources.

c. EMWD Sewer and Wastewater Services

As noted above, EMWD is one of Riverside County's largest providers of wastewater treatment services. Its 2010 UWMP (page 51) notes that EMWD is responsible for all wastewater collection and treatment within its service area. It has four operational regional water reclamation facilities (RWRF) located throughout EMWD (i.e., Moreno Valley, Perris Valley, San Jacinto and Temecula Valley) and in 2010 treated 46,500 AFY of wastewater. All off EMWD's RWRFs produce tertiary effluent suitable for DHS-permitted uses, including irrigation of food crops and full-body contact recreation. In addition to treatment facilities, EMWD has several recycled water storage ponds. These ponds permit EMWD to sell more than just the recycled water produced by its plants during peak demand months (i.e., June – September). Additionally, storage in these unlined surface impoundments facilitates extensive groundwater recharge. When storage capacity is full, surplus recycled water is disposed of through a regional outfall pipeline to Temecula Creek and the Santa Ana River. Thus, in all, the recycled water produced by EMWD is disposed of via a combination of customer sales (up to 32,500 AF sold annually, mainly for agricultural use), discharge to Temecula Creek and percolation and evaporation from EMWD storage ponds. Among its customers, EMWD sells recycled water to the CDFW for environmental use within the San Jacinto Wildlife Area.

d. EMWD Subagencies

As listed in Table 4.19-AB, above, EMWD supplies wholesale water to a number of subagencies: Lake Hemet Municipal Water District, Rancho California Water District and Elsinore Valley Municipal Water District, as well as the cities of Hemet, San Jacinto and Perris, plus assorted water companies and other private providers. Of these providers, all except the City of Perris use locally obtained groundwater in addition to imports from EMWD. Two also have access to surface water: Lake Hemet MWD uses water from the San Jacinto River and Elsinore Valley MWD uses water from Canyon Lake. Two districts (Elsinore Valley and Rancho California) also obtain water from Western Municipal Water District. Although EMWD has found its water supplies, including its imports, to be sufficient, this finding may or may not hold for individual local agencies which themselves may rely on local supplies other than imports. These local sub-agency providers are summarized below.

Elsinore Valley Municipal Water District: EVMWD provides public water service, wastewater treatment, disposal and recycling for over 35,000 service connections. According to Riverside County LAFCO (2005), EVMWD serves a 97-square mile service area that includes the cities of Lake Elsinore, Canyon Lake and Murrieta, as well as several unincorporated communities. See Figure 4.19.22 (EWD/EVMWD Map). The water EVMWD provides is a blend of local groundwater, imported water from WMWD and surface water from Railroad Canyon Reservoir (Canyon Lake). EVMWD imports treated water from MWD's Skinner and Mills

Water Treatment Plants, located in Temecula and Riverside, respectively. Since 2005, LAFCO reports that approximately 51% of EVMWD's water supply is imported.

For local groundwater supplies, EVMWD has access to groundwater from several area basins, including the Elsinore, Temescal Valley, San Bernardino Bunker Hill, Rialto-Colton, Riverside-North and Coldwater Basins, with the primary source of EVMWD's groundwater supplies the Elsinore Groundwater Basin. See Section 4.19.6.L for a description of this basin. EVMWD pumps approximately 94% of the groundwater produced by that basin (approximately 13.7 mgd) from its nine wells. Elsinore Water District (EWD) has the capacity to pump 5% of the basin's groundwater production. However, currently EVMWD supplies potable water to meet EWD's demands and EWD does not pump any groundwater. EVMWD also pumps groundwater from the Coldwater, Lee Lake and Bedford Basins in Temescal Valley for both potable and non-potable uses.

While EVMWD's wells have a total pumping capacity of 2,274 AFY, based on past pumping rates, EVMWD's share of the safe yield is only 1,250 AFY, limiting the projected supply from Temescal Valley to that amount. Total potable water supply from all sources has averaged 28,500 AFY, with relatively stable groundwater production of 14,000 AFY. In response to continued population growth, additional water has been imported from MWD via EMWD or WMWD when needed. Imported water purchases have averaged 9,600 AFY. Per EVMWD's 2010 UWMP, its water supply from all sources is predicted to be fully reliable through 2030. Further, even if more water were needed than is currently predicted, EVMWD also has to ability to purchase additional raw or treated water from MWD. EVMWD also operates three wastewater treatment plants with a total capacity of 9.7 MGD (as of 2005 per LAFCO).

Lake Hemet Municipal Water District: LHMWD provides retail potable water, irrigation water and sewer collection services to residents of Hemet and San Jacinto, as well as Garner Valley and surrounding unincorporated areas. It does not provide wastewater treatment services; collected sewage is treated by EMWD. There are approximately 13,600 domestic and 50 agricultural customers within LHMWD's 26-square mile service area according to LAFCO.

LHMWD currently serves its water customers from three main sources of supply: locally pumped groundwater, surface water from the San Jacinto River system and water purchases from EMWD. Local groundwater from the Hemet and San Jacinto groundwater basins is the primary potable water source. It has generally been acknowledged by the district, EMWD, the cities of Hemet and San Jacinto and the local agricultural community that the San Jacinto and Hemet Groundwater basins are currently in a state of overdraft, with total groundwater extractions by local agencies and private groundwater users exceeding the natural long term recharge capability of the groundwater basins. LHMWD operates seven wells that provide water to the domestic water system and six wells that supply water to the irrigation system. The district also leases private wells to supplement its domestic and irrigation water needs during high demand periods.

Surface water from the San Jacinto River system averages 3,600 AFY, which is approximately 20% of LHMWD's total water supply. Most of the surface water is used for agricultural purposes, but a portion is conveyed to the LHMWD's Eggen Water Treatment Plant for treatment prior to domestic use. The district can also purchase water from EMWD. LHMWD is entitled to a maximum of 336 AFY of EMWD's Fruitvale System water at a special rate and can purchase additional surplus groundwater as needed at EMWD's normal billing rate.

LHMWD will need additional water supplies to be able to satisfy projected growth within the District's service area. The district has committed to working with EMWD, the cities of Hemet and San Jacinto and the DWR to develop a comprehensive Regional Groundwater Management Plan to secure sufficient groundwater supplies based on appropriate safe yields. Supplemental future water supply options include a recycled water distribution system supplied from the EMWD, supplemental imported water supplies, increased use of local surface water and

demand reduction/conservation. By relying more on local surface water and recycled water, LHMWD will be able to cut its reliance on groundwater from 70% of total supply in 2004 to 59% of total supply in 2025.

Rancho California Water District: For historic reasons, this district receives water from both EMWD and WMWD. See full discussion under WMWD, in the subsequent section, below.

2. Western Municipal Water District

As detailed in its 2010 UWMP Update (dated June 2011), the Western Municipal Water District (WMWD) was formed by the voters in 1954 and is a member of MWD. It receives both Colorado River and SWP water from MWD, and also uses local groundwater from desalters. WMWD provides wholesale water to 14 other water providers, either directly or indirectly, as well as its own retail customers. Additional information about this water district is provided in Appendix EIR-8.

a. Notes on WMWD

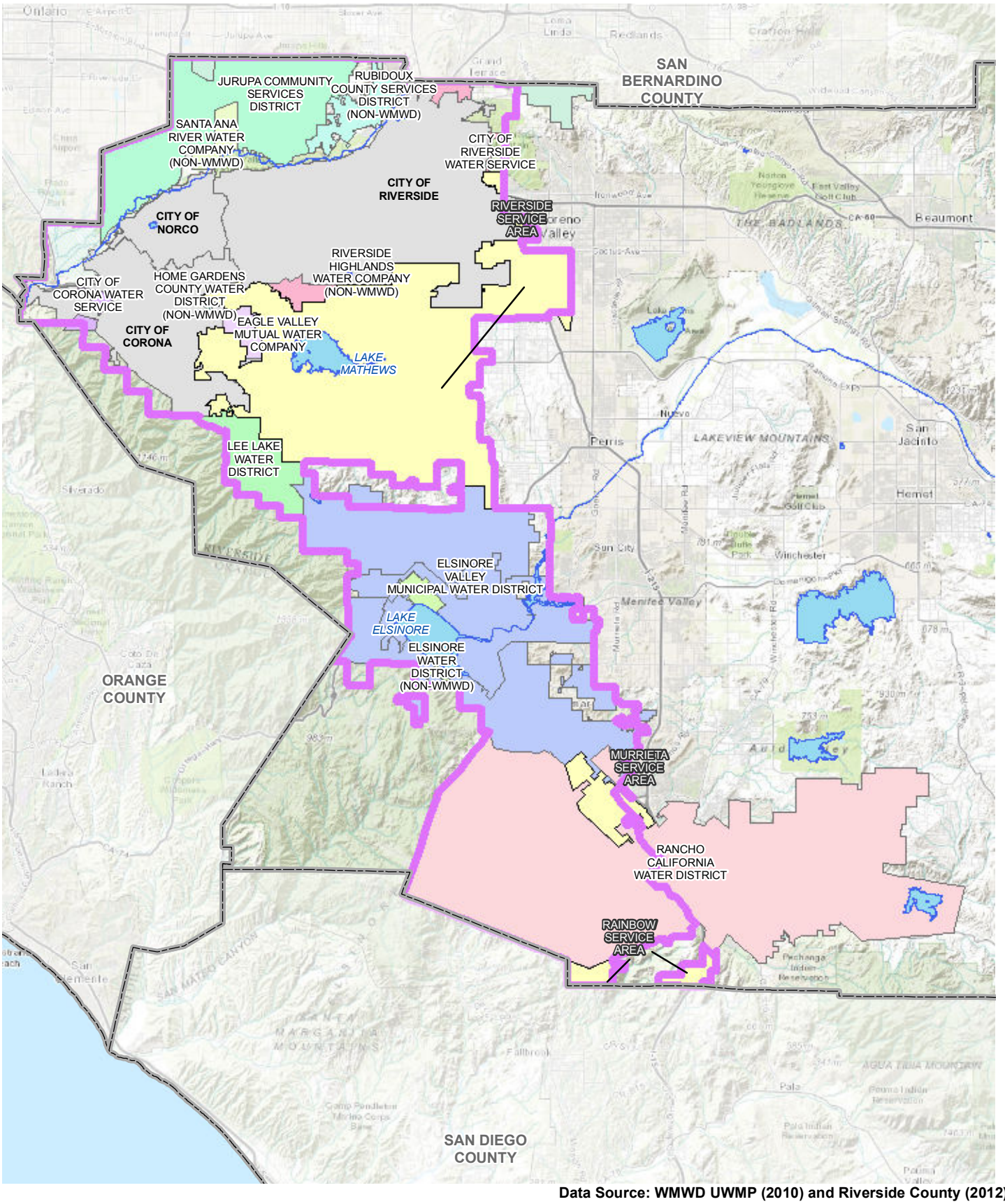
WMWD's retail water uses include residential, commercial, industrial, institutional, governmental, landscape and agricultural. In its wholesale area, most of the water purveyors in the WMWD service area utilize local sources (groundwater, recycled water and a minor amount of surface water), along with imported water and desalter water purchased from EMWD to meet water demands. Total water demand within WMWD's retail area has been increasing since 1995, with demands nearly tripling between 1995 and 2010, although agricultural demand has continued to drop. By year 2035 forecasted demand will increase by approximately 90%. At build out (around 2040), WMWD predicts its total water demands to be nearly double current levels.

WMWD relies on imported water, local groundwater and recycled water to meet its wholesale and retail demands. The District obtains approximately 90% of its total supply through imported water sources from MWD. About one-quarter of the water WMWD purchases from MWD comes from the Colorado River Aqueduct and about 75% from the SWP. WMWD also purchases non-potable water from Elsinore Valley Municipal Water District (Meeks and Daley Water Company purchase) and, when available, from the City of Riverside.

As shown in Figure 4.19.21 (WMWD Service Area), WMWD's local supplies come from groundwater in the Riverside-Arlington, San Bernardino Basin Area (SBBA) and Murrieta basins, as well as from WMWD's own Water Recycling Facility. Future supplies will be developed locally in the Perris North, Arlington and Chino basins, as well as through expansion of WMWD's water recycling facilities.

WMWD intends to utilize excess water, when available, and store this water in the SBBA. This water will come from two different projects – Santa Ana River water rights and the Riverside Corona Feeder. This water would be extracted as needed and transported to WMWD's customers and other water purveyors within WMWD's boundaries for use during dry years. Currently WMWD has 6,000 AF of banked groundwater. Modeling indicates conservatively that WMWD could have 15,000 AF of water banked in most years. This banked water would only be used when needed during drought or water shortage periods.

The Riverside Corona Feeder is a planned regional conveyance facility, comprised of up to 20 wells and 28 miles of pipeline capable of moving up to 40,000 acre-feet per year of groundwater previously banked in the SBBA. The Riverside-Corona Feeder will originate in the SBBA area in San Bernardino County (near the southern portion of the City of San Bernardino) and extend southwesterly to the City of Corona. The Riverside-Corona Feeder will make it possible for WMWD to store excess stormwater, excess SWP water and Santa Ana River water in the SBBA.



Data Source: WMWD UWMP (2010) and Riverside County (2012)

December 16, 2013

WMWD Service Area

Unincorporated WMWD Retail Service Area

Figure 4.19.21

WESTERN MUNICIPAL WATER DISTRICT SERVICE AREA

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b. WMWD Water Availability

While increasing conflicts over the quality and quantity of imported water from the SWP and CRA have lead to increasing imported water costs, WMWD continues to rely on MWD's 2010 RUWMP to evaluate the dependability of these supplies and the amount of imported water that will be available in the WMWD service area. The imported water supply is highly reliable for WMWD, with the full supply available in normal, single-dry years and multiple-dry years.

Table 4.19-AE: Western Municipal Water District Background Information

Sub-Agencies Served[1, 5]	Cities and Communities Served[2]
City of Corona (Department of Water and Power)	City of Murrieta
City of Norco Water Department	City of Riverside
City of Riverside Water Department	Gavilan Hills
Box Springs Mutual Water Company	Lake Hills
Eagle Valley Mutual Water Company	Lake Matthews
Elsinore Water District (EWD)	Mission Grove
Elsinore Valley Municipal Water District (EVMWD)	Orangecrest
Home Gardens County Water District	Victoria Grove
Jurupa Community Services District (JCSD)[6]	Woodcrest
Lee Lake Water District (LLWD)	
Rancho California Water District (RCWD)	
Riverside Highland Water Company	
Rubidoux Community Services District (RSCD)	

Service Area Statistics[3]			
Size	326,400 acres	***CA Hydrologic Region***	South Coast
Population	657,400 people	***Regional WQCB***	8 – Santa Ana

Services Provided[3]					
Distribution	X	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	X	Retail Water		_	Desalination
	X	Recycled or Non-Pot. Water		_	Groundwater Recharge
	X	Wastewater (Collection)		X	Wastewater Treatment

Footnotes:
1. Unless noted otherwise, the District provides wholesale water to these sub-agencies.
2. City/community may be served by this district either wholly or partially. Areas with only a small fragment served by the water district or outside of the district's formal service area may be omitted for clarity.
3. Services and service area statistics from Riverside LAFCO's 2005 Municipal Service Review.
4. Only facilities operated directly by the listed water agency included.
5. In 2005, WMWD absorbed the Murrieta County Water District into its operations.
6. JCSD includes the Santa Ana River Water Company. JCSD receives water through the cities of Corona and Norco; it does not purchase water directly from WMWD. It also gets water from EMWD as well.

Source: WMWD, UWMP, 2010. Riverside LAFCO, Water and Wastewater Municipal Service Review, 2005.

Local groundwater and other water purchased through agreements are deemed reliable in single-dry and multiple-dry years, except for the Temecula-Murrieta Basin supply, for which long-term records are not available. To be conservative, WMWD assumes a 15% reduction in water availability for this service area in dry years. Also, the District assumes conservation reductions will occur slowly, in order to avoid over-estimating potential water savings. WMWD's planned future supplies include new groundwater production and expanded recycled water use. Future supplies will be developed locally, in the Perris North, Arlington and Chino basins, as well as through expansion of the Western Water recycling facility and the Arlington desalter facility.

Table 4.19-AF: WMWD Water and Wastewater Service Data

WATER SERVICE DATA

Water Supply (AF)[1]		Water Connections[1]		Water Service Capacity	
Wholesale	4,200	Domestic	23,000	Total Capacity (AF)	78,400
State W Project	131,200	Irrigation	130	Total Demand (AF)	19,300
Surface	NS	M&I	600	Peak Capacity (mgd)	34.2
Wells[3]	13,400	Reclaimed	3	Peak Demand (mgd)	34.2
Reclaimed	1,000	Other	---	Storage Capacity (mgd)	NP

Water Sources / Suppliers[1]		Water Treatment Facilities[1]		Facility Notes
Import Provider	MWD	Filtration Plants	0	---
Number of Wells	9[3]	Desalination	1	*Arlington Desalter (producing 850 AFY by 2015)*
		GW Recharge	0	---

LOCAL WATER SOURCES[1]

Surface Water	*Source*	*Amount (AFY)*	*Notes*
	Santa Ana River	7,600 ave. yr.	Future diversion, if approved by State of California.[1]

Groundwater	*Basin (Basin No.)* [2]	*Amount (AFY)*	*Notes*
	Riverside-Arlington (8-2.03)	6,400	*Not adjudicated and not in overdraft condition.*
	Temecula-Murrieta (9-4.00)[4]	1,600	*Adjudicated watershed overseen by Watermaster.*
	San Bernardino Basin Area (8-2.06 plus)[5]	64,900	*Combined total for WMWD and member agencies.*

WASTEWATER SERVICE DATA

System Size (miles)		Sewer Connections (#)		Recycled Water Uses		Facility Notes
Gravity Sewer	7.4	Domestic	3,300	X	Irrigation	*Irr. for Riv. National Cemetery*
Force Main	2.9	Commercial	20	X	Agriculture	---
Other	---	Industrial	NP	X	Industrial/Util.	---
		Other	---	X	GW Recharge	*Via discharge to Santa Ana River*

WASTEWATER TREATMENT FACILITIES

Plant No.	CURRENT		PLANNED[3]		PLANT TOTAL
	Treatment	Capacity (mgd)	Treatment	Add'l Capacity (mgd)	Total Capacity (mgd)
1	Secondary	0.85	Tertiary	2.15	***3.0***
2[2]	Tertiary	8.0 (6.6 ave.)	---	24.0	***40.0***
Totals		***8.85***		***26.15***	***35.0***

Key: NP = not provided (in LAFCO Report) NA = not available NS = not specified
"---" denotes no change or not applicable mgd = million gallons per day

Footnotes:
1. Data from District's 2010 UWMP. (Basin numbers per DWR Bulletin 118.)
2. Western Riverside County Regional Wastewater Authority (WRCRWA) facility; operated by WMWD.
3. WMWD does not directly extract groundwater for distribution. Goes to desalination plants first.
4. Adjudicated basin overseen by Santa Margarita River Watermaster. See Appendix EIR-8 for more information.
5. SBBA = Mainly Bunker Hill Subbasin, plus small portions of Yucaipa and Rialto-Colton Basins. Adjudicated basin managed by Watermaster pursuant to Western Judgment.

Source: Riverside LAFCO, Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005.

Table 4.19-AG: WMWD Water Supply and Demand Summary

DATA SUMMARY						Western Municipal Water District	
DATA[1]	2010	2015	2020	2025	2030	2035	2040[4]
Population	85,500	98,800	112,200	126,500	142,700	161,000	181,600
EXISTING SUPPLIES							
Water Budget – Average Year (in AF)							
Import	---	166,500	180,300	190,300	201,500	214,200	214,200
Groundwater	---	7,600	16,600	16,600	16,600	16,600	16,600
Recycle/Other	---	7,400	7,400	7,400	7,400	7,400	7,400
Supply Total	***---***	***181,500***	***204,300***	***214,300***	***225,500***	***238,200***	***238,200***
Demand Total	---	118,600	124,000	134,700	145,200	156,200	168,300
Net Supply	---	62,900	80,300	79,600	80,300	82,000	69,900
Water Budget – Single Dry Year (in AF)							
Import	---	166,500	180,300	190,300	201,500	214,200	214,200
Groundwater	---	7,400	16,400	16,400	16,400	16,400	16,400
Recycle/Other	---	7,400	7,400	7,400	7,400	7,400	7,400
Supply Total	***---***	***181,300***	***204,100***	***214,100***	***225,300***	***238,000***	***238,000***
Demand Total	---	~~134,100~~	~~140,200~~	~~152,200~~	~~164,000~~	~~176,500~~	~~190,200~~
Net Supply	---	47,200	63,900	61,900	61,300	61,500	47,800
Water Budget – Multiple Dry Years (in AF)							
Import	---	166,500	180,300	190,300	201,500	214,200	214,200
Groundwater	---	7,400	16,400	16,400	16,400	16,400	16,400
Recycle/Other	---	7,400	7,400	7,400	7,400	7,400	7,400
Supply Total	***---***	***181,300***	***204,100***	***214,100***	***225,300***	***238,000***	***238,000***
Demand Total	---	134,100	140,200	152,200	164,000	176,500	190,200
Net Supply	---	47,200	63,900	61,900	61,300	61,500	47,800
Base Adequacy	***---***	***yes***	***yes***	***yes***	***yes***	***yes***	***yes***
FUTURE SUPPLIES							
Planned / Potential (Additional) Water Supply (in AF)							
Import	---	0	0	0	0	0	0
Groundwater	---	1,000	2,000	2,000	2,000	2,000	2,000
Recycled	---	200	700	1,300	2,400	3,500	4,700
Desalination	---	4,400	4,400	4,400	4,400	4,400	4,400
Total	***---***	***5,600***	***7,100***	***7,700***	***8,800***	***9,900***	***11,100***

Footnotes:
1. All data from UWMP, unless noted otherwise. All data rounded to nearest hundred
2. Water years used (for average, dry and multi-year dry benchmarks): 2004-2009, 1977 and 1990-1992.
3. Recycled water system plus desalter output.
4. "Build out" year according to WMWD 2010 UWMP.

Source: Western Municipal Water District, Urban Water Management Plan, 2010.

In regard to its own water reliability calculations, WMWD evaluated its ability to supply water to meet expected demands over the 25-year planning period during an average/normal year, single-dry year and multiple-dry years. As shown in Table 4.19-AG, under all three scenarios WMWD expects to have water surpluses, even under the most extreme multiple-dry year scenario.

It is for these reasons that WMWD has concluded that the combination of imported water and expanded local resource programs would ensure that these supplies can be met in the future. As discussed above regarding specific water sources, local groundwater and other water purchased through agreements are considered 100% reliable in single-dry or multiple dry years, except for the Temecula-Murrieta Basin supply. WMWD has only been pumping water from the Temecula-Murrieta Basin since late 2005 and does not have long-term records on water available from this source. Thus, to be conservative, until more data is available, WMWD is assuming its use of Temecula-Murrieta Basin water could be reduced by 15% in a single-dry or multiple dry years. However, even with this conservative estimate, between 2015 and 2040 WMWD has surplus water supplies available each

year between 56,000 and 95,000 AFY, depending on the type of water year. This demonstrates that WMWD has sufficient water supplies to fully supply all potential and planned growth.

c. WMWD Sewer and Wastewater Treatment Services

According to its 2010 UWMP (page 4-1), WMWD operates two wastewater treatment plants that service its Riverside retail service area. That area is also served by the City of Riverside's Riverside Water Quality Control Plant and scattered individual septic systems. The two WMWD are the Western Riverside County Regional Wastewater Treatment Plant (WRCRWTP) and the Western Water Recycling Facility (WWRF), which was formerly the March Wastewater Treatment Plant. Wastewater treatment in WMWD's other retail areas is provided by EMWD at its Temecula Valley Regional Water Reclamation Facility (TVRWRF) and by RCWD at its Santa Rosa Water Reclamation Facility (SRWRF).

WMWD's regional plant (WRCRWTP) provides tertiary treatment with the resulting reclaimed water available for reuse or for discharge through an outfall to the Santa Ana River. Its current capacity is 8 mgd, with an expansion capacity of 32 mgd total. This facility also processes wastewater from Norco, JCSD and the Home Gardens Sanitary District. As of December 2010, average flow into the plant was 6.6 mgd. Discharges to the Santa Ana River are typically 5,000 AFY, although the City of Norco was set to purchase just under 900 AFY of the recycled water once conveyance facilities from the plant were completed. WMWD's other plant, the WWRF, treats domestic wastewater from the March Air Reserve Base and the north-central portion of the district's Riverside service area. As of 2010, the plant produced approximately 1,000 AFY of secondary treated water, which is discharged to an impoundment and then pumped to supply recycled water to the Riverside National Cemetery and a golf course (approximately 800 AFY). When the supply exceeds storage capacity, it is conveyed to the WRCRWTP for tertiary treatment and then discharged to the Santa Ana River.

d. WMWD Subagencies

As reported in their 2010 UWMP Update (page 1-14), WMWD serves nine water purveyors with both treated and raw water using Colorado River and SWP supplies transported by MWD, and also treated water from the Arlington desalter. In addition to water purchased from WMWD, most of these water purveyors also pump and deliver local groundwater and/or recycled water within their respective service areas. None use surface water. It should also be noted that, although WMWD has found its water supplies, including its imports, to be sufficient, this finding may or may not hold for individual local agencies which themselves may rely on local supplies other than imports.

(1) MWD Member Agencies and Customers

WMWD's "member agencies" and customers are listed in Table 4.19-AE, above, and outlined briefly below. Water districts supplied with wholesale water by WMWD include: Elsinore Water District, Elsinore Valley Municipal Water District, Lee Lake Water District and Rancho California Water District, as well as the cities of Corona, Norco and Riverside, plus assorted water companies and other private providers.

Elsinore Valley Municipal Water District: This district receives water from both WMWD and EMWD. Elsinore Valley Municipal Water District (EVMWD) serves approximately 40,000 customers in a 96-square-mile service area in the Lake Elsinore region. EVMWD's water supply is a blend of local groundwater, surface water from Canyon Lake, which EVMWD owns, and imported water. Canyon Lake impounds local runoff from the 750-square-mile San Jacinto River watershed. The lake holds nearly 12,000 AF of water behind Railroad Canyon Dam. See Figure 4.19.22.

EVMWD imports treated water from the Skinner and Mills Water Treatment Plants (WTPs), located in Temecula and Riverside, respectively. Both treatment facilities are owned and operated by MWD. Since 2005, approximately 61% of EVMWD's supply has been imported. In 2009, EVMWD, purchased 16,500 AF from WMWD. See discussion under EMWD, above, for additional details on this water district.

Lee Lake Water District: In the foothills of the Cleveland National Forest, Lee Lake Water District (LLWD) provides potable and reclaimed water to residents of the Temescal Valley. The district has approximately 2,000 service connections across a service area of approximately 450 acres (though its total service area span roughly 6,755 acres). It also provides wastewater collection, treatment and disposal for area residents.

The main portion of Lee Lake Water District is served with imported water from WMWD. LLWD obtains most of its potable water from MWD, which imports it from Northern California via the SWP. The water is then treated at the Henry J. Mills Water Filtration Plant in Riverside and delivered to LLWD via the Mills Pipeline. Other portions within the Lee Lake Water District boundary are either undeveloped, supplied from wells, or supplied from the City of Corona or the EVMWD. LLWD purchased about 3,100 AF of water from WMWD in 2009. Since LLWD's formation, Temescal Valley has undergone much growth as citrus cropland has given way to numerous residential communities, businesses and industrial parks. (WMWD UWMP, 2010.)

LLWD also owns and operates three wastewater treatment facilities. The California Meadows, Butterfield Estates and the Lee Lake Water Reclamation Facility perform wastewater treatment duties for wastewater produced within the District. The most recent addition, the Lee Lake Water Reclamation Facility, is capable of treating 1.5 million gallons per day of raw sewage and producing reclaimed water usable for landscape irrigation and other non-consumptive purposes. Lee Lake also provides incentives for conservation through a tiered rate structure based on the amount of usage. Lee Lake tests water quality three times per month for microbiological organisms and once annually for all other constituents as required by federal and state regulations. Low levels of color and turbidity are a significant factor in customer satisfaction and LLWD delivers the clearest water possible to every household. LLWD water averages a TDS level of 261mg/L.

Rancho California Water District: *RCWD is a "Special District" organized and operated pursuant to the California Water Code. It is governed by a seven-member board of directors that is elected by the voters of the region. RCWD is not a member agency of MWD, but rather contracts through EMWD and WMWD (which are member agencies) for its imported water supplies.* RCWD serves ~~approximately 120,000 customers~~ *134,000 customers with 44,000 service connections (per RCWD's letter to the County dated June 30, 2014)* within a service area that encompasses nearly 100,000 acres *(approximately 156 square miles)* in southern Riverside County. RCWD is divided into the Rancho Division, served by EMWD, and the Santa Rosa Division, which is served by WMWD. ~~The District has 940 miles of water mains, 36 storage reservoirs, one surface reservoir (Lake Vail) and 47 groundwater wells. In 2009, WMWD delivered approximately 22,000 AF of water to RCWD.~~ *In their letter to the County (dated June 30, 2014) RCWD reports that its capital asset value is approximately $518 million with 962 miles of water mains, 43 storage tanks, one surface reservoir (Vail Lake) and 53 groundwater wells. RCWD delivers a combination of local groundwater, recycled water and imported water to meet domestic, industrial and agricultural demands. As of June 2014, these demands total an average of 63,000 AFY of potable water, which is 63% of their projected buildout demand. The existing non-potable/recycled water demand is currently (as of June 2014) totaling an average of 3,800 AFY. RCWD projects buildout potable water demand is to be approximately 101,000 AFY (per their letter dated June 30, 2014).*

~~RCWD is implementing water management strategies to address water supply for the region. These include development of over 114,000 AF per year of additional local supply by 2030; reduction of imported water dependency by 25% via conservation and local supply development by 2030; diversification of supplies including expanded groundwater, new desalination of brackish groundwater, new recycled water, conjunctive use storage~~

~~and water transfers. These and other efforts described in the IRWMP will enable RCWD to continue to meet or exceed water demands within RCWD's service area.~~

RCWD's population is anticipated to increase to over 162,000 by 2035, requiring system improvements to ensure reliability of water supply. Local water management strategies implemented by RCWD to address water supply reliability for the region include: reduction of imported water dependency through ongoing conservation programs; budget-based tier rates; conjunctive use for optimized groundwater recharge and recovery strategies; and, an advance-treated recycled water program for expanded recycled water use. (RCWD, June 30, 2014)

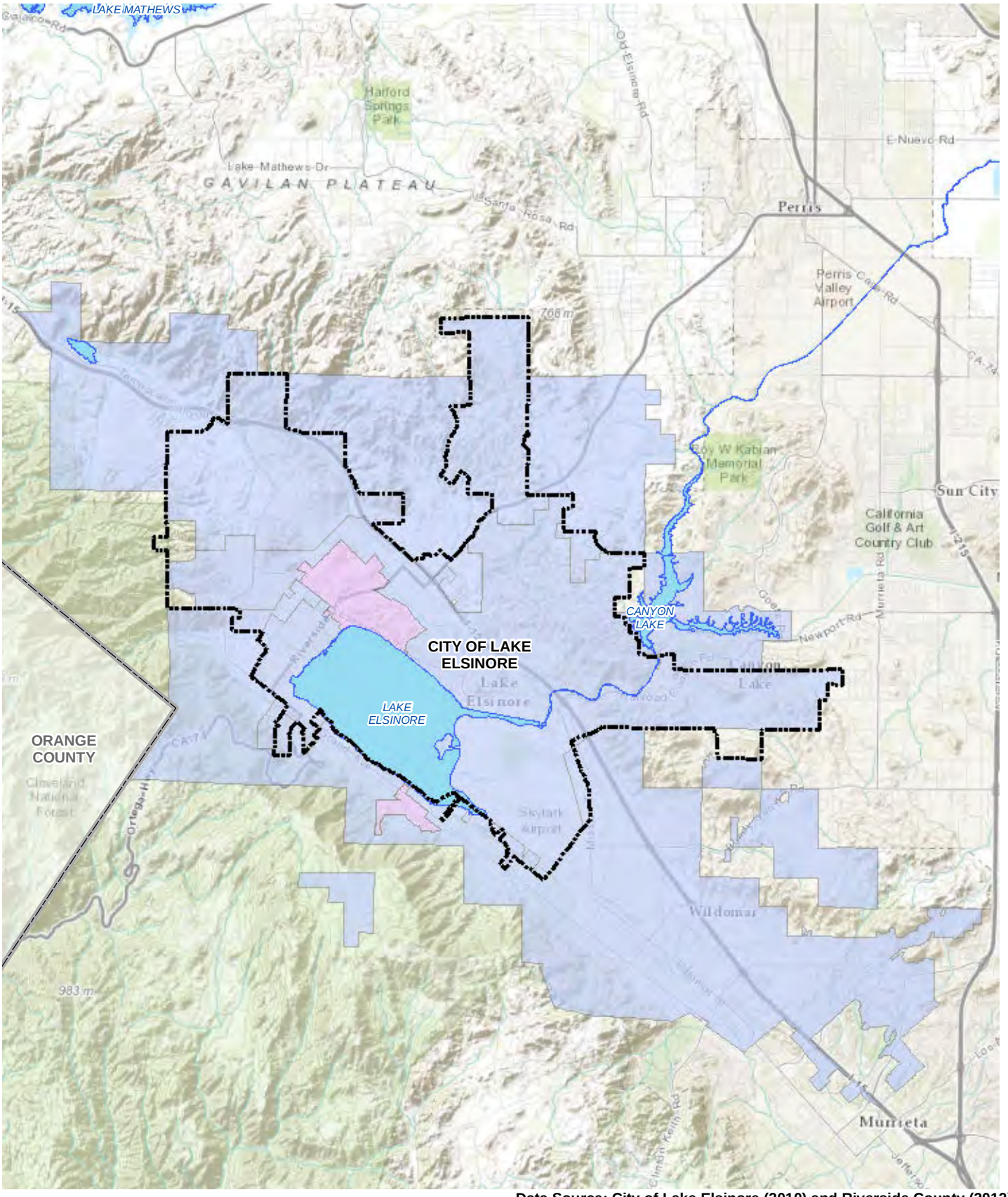
In compliance with the Urban Water Management Planning Act, RCWD prepares an Urban Water Management Plan (UWMP). The UWMP includes an assessment of water sources and supply, reliability of supplies, water use efficiency measures, and water demand and supply comparisons. In addition, recent legislation under the Water Conservation Bill of 2009 requires urban water suppliers to report in their UWMPs a base daily per-capita water use ("baseline"), urban water use targets for the year 2020 and interim water use targets for the year 2015. This information will be included in RCWD's 2015 UWMP, which will be released by December 31, 2015. RCWD also has a Regional Integrated Resources Plan (IRP) to develop a long-range water supply plan to reliably meet the needs of the District through 2050. The IRP addresses issues of imported water supply availability, system capacity constraints, rising imported water costs and water quality.

As set forth in the information and analyses provided for MWD (see Section 4.19.4.E), including MWD's 2010 RUWMP, MWD has determined that it is capable of meeting demands for imported water throughout its service area over the next 20-year planning horizon and beyond during normal, single-dry and multiple dry-year periods. RCWD ~~and EVMWD obtain their~~ *obtains its supply of imported* water from MWD via EMWD and WMWD*, as noted above*. ~~As detailed above,~~ MWD strategically manages water in times of surplus to ensure adequate and reliable supplies during a shortage. ~~Even though MWD can reliably meet RCWD's demands, there is a capacity constraint issue associated with the turnouts from MWD pipelines. This will potentially cause future peak day water shortages after 2025 for RCWD.~~

Box Springs Mutual Water Company: According to WMWD (2010 UWMP), this water purveyor (BSMWC) has approximately 585 service connections in a 430-acre service area and is connected to WMWD's distribution system. BSMWC currently receives water from one BSMWC-owned well located in the Riverside South Groundwater Basin. In 2005, BSMWC's water purchases from WMWD totaled roughly 86 AF and 87 AF in 2010. The purchased water is used for blending purposes.

Eagle Valley Mutual Water Company: Eagle Valley Mutual Water Company was established in the late 1950s as a privately-owned mutual water company to serve non-potable irrigation water to an agricultural area of approximately 3,070 acres in Eagle Valley, west of Lake Mathews. It is anticipated that as long as its service area has agricultural lands, the water company will continue to be a viable operating agency. Eagle Valley has no groundwater pumping at this time. Eagle Valley purchased 652 AF of water from Western in 2009.

Jurupa Community Services District: The Jurupa Community Services District (JCSD) serves approximately 91,000 customers in a 42-square-mile service area in the northwest corner of Riverside County. JCSD does not currently receive imported water from Western, but JCSD is in the planning stages of developing supply and conveyance to augment existing water supplies with imported water. See Section 4.19.4.I (Local Water Providers Relying on Groundwater Only) for more information on Jurupa CSD water services.



Data Source: City of Lake Elsinore (2010) and Riverside County (2012)

December 16, 2013

Elsinore Water District (EWD)

Elsinore Valley Municipal Water District (EVMWD)

Figure 4.19.22

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

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RIVERSIDE COUNTY PLANNING DEPARTMENT

BOARD OF SUPERVISORS

ELSINORE WATER DISTRICT AND ELSINORE VALLEY MUNICIPAL WATER DISTRICT SERVICE AREA

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(2) Other Agencies in WMWD's Service Area

There are several agencies in the WMWD service area that do not currently purchase water from WMWD. These agencies are briefly described below.

Elsinore Water District: EWD was formed in 1933 to provide potable water services to the Lake Elsinore area. EWD provides retail domestic potable water and recycled/reclaimed water distribution to a service area of approximately seven square miles with approximately 1,700 service connections. It does not provide wholesale water, sanitary sewer services or wastewater treatment. It maintains two separate water distribution systems both of which are located in older parts of Lake Elsinore and surrounding unincorporated areas and supplies water from EVWD and from local wells. (It does not import water directly from WMWD, but does get water from EVWD which does itself import from WMWD.)

LAFCO reports that the 2004 water demand in the EWD service area was 454 AF per year with an existing supply of 460 AFY. Future (2025) supply and demand data was not available. As indicated by its supply and demand data, EWD has sufficient water and infrastructure to serve its existing customers into the future. However, as part of the 2005 municipal service review, LAFCO concluded, "EWD is essentially built out." The ability of EWD to serve new development has not been verified.

Home Gardens County Water District: Home Gardens County Water District (HGCWD) was established in 1979 as a county water district. With its formation, it acquired the assets and facilities of the Home Gardens Mutual Water Company. HGCWD serves an area of more than 230 acres in the Riverside County area east of Temescal Street and south of Sampson Avenue. It has approximately 800 metered services for a population of approximately 3,000 people. Initially, HGCWD served its customers with local groundwater from wells in the Arlington Basin. However, because of the basin's poor water quality, the district has discontinued much of its well supply. Currently HGCWD receives approximately two-thirds of its water from the City of Riverside. It does not import water from WMWD.

Riverside Highlands Water Company: RHWC provides domestic and irrigation water services to the City of Grand Terrace, portions of the City of Colton and portions of unincorporated Riverside and San Bernardino Counties. It serves approximately 12,000 people in a service area of roughly 5,500 acres. All of RHWC's water supply originates from groundwater wells located in the Riverside North and South Basins and the Bunker Hill Basin. It does not import water from WMWD.

Rubidoux Community Services District: Rubidoux Community Services District serves roughly 27,000 customers in a 120-acre service area. All of Rubidoux CSD's potable water supply is obtained from extraction wells located within its own boundaries, except for emergency water supplies delivered through interconnections with JCSD and West Valley Water District. Rubidoux CSD's wells extract water from the portion of the Riverside Basin lying within Riverside County. In 2009 Rubidoux pumped and delivered approximately 6,600 AF to its customers. It does not import water from WMWD. See Section 4.19.4.I for more information on Rubidoux CSD water services.

Santa Ana Water Company: The SAWC was established in 1925 and is a privately held, independently operated mutual water company. It serves an area surrounded by Jurupa CSD in unincorporated Riverside County (and, now the cities of Jurupa Valley and Eastvale). The SAWC utilizes water from the Chino Basin Desalter Authority, water leases with Jurupa CSD and also local groundwater. It does not import water from WMWD.

3. San Bernardino Valley Municipal Water District

SBVMWD covers about 325 square miles in southwestern San Bernardino County and serves a population of 576,000. SBVMWD imports SWP water and manages groundwater storage within its boundaries, which include groundwater basins located partially within Riverside County. Specifically, LAFCO (2002) reports that SBVMWD is responsible for monitoring groundwater supplies in the San Bernardino and Colton-Rialto basins and maintaining flows at Riverside Narrows on the Santa Ana River. The district's current water supplies are comprised of 68% groundwater, 17% imported, 14% surface water, less than 1% recycled.

As one of MWD's 26 member-agencies, SBVMWD receives imported water supplies from Northern California via the SWP and provides wholesale water to 11 retail sub-agencies of its own. It does not directly serve any retail water customers of its own. Two of SBVMWD's retail agencies, the West Valley Water District and Yucaipa Water District, are located within Riverside County (see discussion below). SBVMWD also receives exported (recycled) water from the City of Riverside. Unless otherwise noted, the information in this subsection comes from the 2010 San Bernardino Valley Regional Urban Water Management Plan (RUWMP, for this subsection), which was prepared by Kennedy/Jenks Consultants, June 2011, and addresses, in addition to SBVMWD, the San Bernardino Municipal, East Valley, West Valley and Yucaipa Valley water districts, as well as the water agencies for the cities of Loma Linda, Redlands and Colton.

a. Notes on SBVMWD

SBVMWD was formed in 1954, under the Municipal Water District Act of 1911 (CWC Section 71000 et seq.) as a regional agency to plan a long-range water supply for the San Bernardino Valley. Its enabling act includes a broad range of powers to provide water, wastewater and stormwater disposal, recreation, and fire protection services. SBVMWD does not deliver water directly to retail water customers. SBVMWD monitors and manages the groundwater supplies (and recharge) in the San Bernardino and Colton-Rialto basins and maintains flows at Riverside Narrows on the Santa Ana River.

SBVMWD's services are provided to a population of about 657,500. The district spans the eastern two-thirds of the San Bernardino Valley, plus Crafton Hills and a portion of Yucaipa Valley. It also includes the cities and communities of San Bernardino, Colton, Loma Linda, Redlands, Rialto, Fontana, Bloomington, Highland, East Highland, Grand Terrace, Mentone and Yucaipa; most of which are in San Bernardino County. A map illustrating district's service area, along with the service areas of the retail water purveyors, is provided in Figure 4.19.23 (Map of SBVMWD's Service Area). In the 2010 RUWMP, the district estimated a future population projection for 2015 to 2035, based on the amount of San Bernardino County served (35%) and Riverside County served (0.01%). According to the RUWMP, by 2015, SBVMWD expects to serve nearly 717,800 residents, 832,600 residents by 2025 and nearly 940,000 by 2035.

The climate within SBVMWD's service area is characterized by warm, dry summers and mild winters with moderate amounts of rainfall. Mean annual temperatures average 64.1°F, with summer high temperatures (June through September) in the low 80s and winter lows in the upper 30s. The average annual maximum monthly temperature is 79.9° F. The average annual precipitation is 16.1 inches, most of which occurs between December and March.

b. SBVMWD Water Availability

To better manage water resources to a burgeoning population within a dry climate, SBVMWD is actively involved in several regional projects that will improve water reliability and water quality. The district is exploring a broad array of water management measures, including water waste prevention and water loss control that will be implemented in 2012. The district expects to expand its recycled water supply from 1% to 7% to meet future water demands.

Table 4.19-AH: San Bernardino Valley Municipal Water District Background Information

Sub-Agencies Served[1]			Cities Served[2]
East Valley Water District[5]	Fontana Union Water Co.[5]		City of San Bernardino[5]
West Valley Water District	Fontana Water Company[5]		City of Loma Linda[5]
Yucaipa Water District	Bear Valley Mutual Water Co.[5]		City of Redlands[6]
San Bernardino Municipal WD[5]	Muscoy Mutual Water Co.[5]		City of Rialto[5]
Riverside Highland Water Co.	Terrace Water Co.[5]		City of Colton[5]
South Mesa Water Co.[5]	Western Heights Mutual W Co[5]		City of Fontana[5]

Service Area Statistics[3]			
Size	208,000 acres	***CA Hydrologic Region***	South Coast
Population	657,500 people	***Regional WQCB***	8 – Santa Ana

Services Provided[3]					
Distribution	X	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	_	Retail Water		_	Desalination
	_	Recycled or Non-Pot. Water		X	Groundwater Recharge
	_	Wastewater (Collection)		_	Wastewater Treatment

Footnotes:
1. Unless noted otherwise, the district provides wholesale water to these sub-agencies.
2. City/community may be served by this district either wholly or partially. Areas in which only a small fragment are served by the water district or are outside of the district's formal service area may be omitted for clarity.
3. Services and service area statistics from Riverside LAFCO, 2005 Water and Wastewater Municipal Service Review.
4. Only facilities operated directly by the listed water agency included.
5. Serves only San Bernardino County territory.
6. Due to a boundary adjustment, a small sliver of Riverside County falls within this district.

Source: Kennedy/Jenks Consultants. 2010 SBV RUWMP, 2011; Riverside LAFCO. Water and Wastewater Municipal Service Review Report, 2005.

A second strategy for addressing water supply during an emergency is to ensure system redundancy. To that end, SBVMWD has identified alternative conveyance facilities which could be used in the event of a failure of one of district's pipelines. For example, the district has an agreement with MWD which could allow the use of the Inland Feeder Pipeline to bypass a large portion of the Foothill Pipeline, the district's primary delivery line. In addition, the SBVMWD proposes to develop the following facilities that would create additional system redundancy:

Table 4.19-AI: SBVMWD Water and Wastewater Service Data

WATER SERVICE DATA					
Water Supply (AF)		**Water Connections**		**Water Service Capacity**	
Wholesale	All	Domestic	NP	Total Capacity (AF)	299,100
State W Project	67,700	Irrigation	NP	Total Demand (AF)	364,600
Surface	73,200	M&I	NP	Peak Capacity (mgd)	NP
Wells	132,200	Reclaimed	NP	Peak Demand (mgd)	NP
Reclaimed	26,000	Other	NA	Storage Capacity (mgd)	NP

Water Sources / Suppliers[1]		Water Treatment Facilities[1]		Facility Notes
Import Provider	SWP	Filtration Plants	_	
Number of Wells	NP	Desalination	_	
		GW Recharge	*yes*	*Provided using SWP water and local runoff.*

LOCAL WATER SOURCES[1]			
Surface Water	***Source***	***Amount (AFY)***	***Notes***
	Santa Ana River	NS	*Adjudicated water rights. See Appendix EIR-8.*
	SBBA Surface Water	39,000	*Specific streams not identified in RUWMP.*
Groundwater	***Basin (Basin No.)*** [2]	***Amount (AFY)***	***Notes***
	San Bernardino Basin Area (SBBA)[3, 4]	167,238 [5]	*Per the Western Judgment.*
	Yucaipa (8-02.07) [3]	17,700	*See Rialto Basin Decree and the Western Judgment.*
	Riv.-Arlington (8-02.03) [Riverside North] [3]	21,085	*For Riverside County use per the Western Judgment.*
	Rialto-Colton (8-02.04) [3]	NS	*See Rialto Basin Decree and the Western Judgment.*
	Yucaipa subbasin (8-02.07)	NS	---
	San Timoteo subbasin (8-02.08) [6]	8,650[6]	*Outside SBVMWD service area; used by YVWD.*
	Chino subbasin (8-2.01) [3]	1,000	*Outside SBVMWD service area; used by WVWD.*
WASTEWATER SERVICE DATA – *None provided by SBVMWD (see subagency info., below).7*			

Key: NP = not provided (in LAFCO Report) NS = not specified in RUWMP NA = not applicable

Footnotes:

1. Information / data from District's 2010 UWMP. All other information from LAFCO MSR Report.
2. Basin information from SBV-RUWMP, page 2-6.
3. An adjudicated basin; see Appendix EIR-8.
4. SBBA = Bunker Hill (8.02-07) and Lytle Creek basins. The Lytle Creek subbasin is not mapped in DWR Bulletin 118
5. AFY total is for all agencies within SBVMWD service area. Extractions above this amount allowed if replaced with imported recharge water in kind.
6. Also see the "Beaumont Basin" which is largely comprised of the San Timoteo basin, plus two others. Adjudicated; see Appendix EIR-8 for more of this basin's complicated legal history.
7. All wastewater treatment services provided by subagencies, none provided by SBVMWD directly.

Source: Riverside LAFCO, Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005. Kennedy/Jenks Consultants, 2010 Regional San Bernardino Valley UWMP, 2011.

Table 4.19-AJ: SBVMWD Water Supply and Demand Summary

DATA SUMMARY					San Bernardino Valley Municipal Water District	
DATA[1,2,3]	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Population	657,500	717,800	783,600	832,600	884,600	939,900
EXISTING SUPPLIES[2]						
Water Budget – Average Year (in AF)						
Surface Water[4]	50,200	50,200	50,200	50,200	50,200	50,200
Groundwater[5]	242,200	246,200	254,200	259,800	264,100	267,700
Imported SWP Water	21,800	23,900	25,400	27,000	27,100	27,100
Stored SWP Water[6]	39,800	37,700	36,200	34,600	34,500	34,500
Supply Total	***353,900***	***357,900***	***365,900***	***371,500***	***375,800***	***379,400***
Demand Total[7]	NS	240,100	256,100	283,900	305,400	323,500
Net Supply	NS	+ 117,800	+ 109,800	+ 87,600	+ 70,300	+ 55,800
Water Budget – Single Dry Year (in AF)						
Surface Water[4]	21,700	21,700	21,700	21,700	21,700	21,700
Groundwater[5]	260,100	260,100	268,500	276,200	281,000	284,900
Imported SWP Water	13,400	13,300	13,300	13,300	13,300	13,300
Stored SWP Water[6]	48,200	48,200	48,200	48,200	49,200	49,200
Supply Total	***343,300***	***343,300***	***351,700***	***359,400***	***364,200***	***368,100***
Demand Total[7]	NS	~~260,900~~	~~278,200~~	~~307,500~~	~~330,400~~	~~349,600~~
Net Supply	NS	+ 82,400	+ 73,500	+ 51,900	+ 33,800	+ 18,500
Water Budget – Multiple Dry Years (in AF)						
Surface Water[4]	23,600	23,600	23,600	23,600	23,600	23,600
Groundwater[5]	259,100	259,100	267,300	275,000	279,900	283,700
Imported SWP Water	33,900	33,900	33,900	33,900	35,900	35,900
Stored SWP Water[6]	27,700	27,700	27,700	27,700	25,700	25,700
Supply Total	***344,200***	***344,200***	***352,500***	***360,200***	***365,000***	***368,900***
Demand Total[7]	NS	~~260,900~~	~~278,200~~	~~307,500~~	~~330,400~~	~~349,600~~
Net Supply	NS	+ 83,300	+ 74,300	+ 52,600	+ 34,600	+ 19,300
Base Adequacy	***NS***	***yes***	***yes***	***yes***	***yes***	***yes***

Key: NS = not specified

Footnotes:
1. All data from SBV-RUWMP, unless noted otherwise. All data rounded to nearest hundred.
2. All data is for the regional water supply, that is, the water agencies covered by the RUWMP (see Table 4.19-AH).
3. Water years used for average, single-dry years not specified. Various years used for the multi-year dry data.
4. Includes SBBA surface water, Seven Oaks supply and Glen Oak.
5. Groundwater includes SBBA groundwater, SBBA return flows extraction above the safe yield and groundwater from the Rialto-Colton, Riverside North and Chino basins, as well as Yucaipa, Beaumont and San Timoteo.
6. Assumes SWP water is stored in wet years so it can supplement lower deliveries of SWP imports in dry years.
7. From Tables 4-1, 4-2 and 4-3 of the SBV-RUWMP.

Source: Kennedy/Jenks Consultants. 2010 SBV RUWMP, Tables 2-8, 2-9, 2-10, 4-1, 4-2, 4-3 and 6-1, 2011.

- **Central Feeder Pipeline:** The Central Feeder Pipeline System parallels the Foothill Pipeline and could allow groundwater to be delivered to customers along the East Branch Extension of the California Aqueduct if the Foothill Pipeline was not available to deliver SWP water.

- **Ninth Street Feeder:** This project would provide an interconnection between the East Valley Water District and SBVMWD's Baseline Feeder Extension South Pipeline.

SBVMWD is also developing a storage program to help meet direct delivery demands during a shortage of SWP water. The current storage program includes the DWR's Carryover Storage Program, the Yuba Accord and the DWR Dry Year Water Transfer Program. SBVMWD is also evaluating 'upstream' groundwater banks located along the California Aqueduct as well as Big Bear Lake. Finally, SBVMWD is planning to implement seismic improvements for high priority facilities, including the Foothill pipeline, Santa Ana River connector, Morton Canyon connector and Greenspot pipeline.

In recent years, water conservation has become an increasingly important factor in water supply planning in California. DMMs are programs and activities through which a water supplier can communicate with their customers and encourage, regulate or incentivize water conservation. The Urban Water Management Planning Act identifies 14 DMMs that are to be evaluated in each UWMP. DMMs include hiring a conservation coordinator to manage water conservation efforts, enacting ordinances or terms of service that prohibit water waste and require water-efficient design in new development, as well as enacting ordinances developing water shortage response measures.

Although SBVMWD is not a retail agency, it does support water waste prohibition and water conservation. Consistent with its DMMs, the district actively supports its retailers through a variety of programs including: school education programs and emphasizing the use of water friendly planting through the district's Inland Empire Garden friendly Program. In recent years, SBVMWD performed a water loss audit, engaged in a variety of public information programs concerning water waste prevention, provided $500,000 for a demonstration garden at California State University of San Bernardino, engaged in conservation-related education programs through local school districts and contributed $430,000 in financial incentives to upgrade inefficient irrigation controllers to weather-based controllers.

Because it is a wholesale agency, SBVMWD is not directly implementing water survey programs for single-family residential and multifamily residential customers, residential plumbing retrofits, metering with commodity rates, large landscape conservation programs, high efficiency washing machine rebate programs or other such programs. Instead, the district supports their retail agencies with their conservation programs. Further, the RUWMP emphasizes a greater reliance on recycled water and seeks to expand that resource from 1% to 7% of its water supply. SBVMWD's UWMP concludes that the district has the water supply to meet or exceed demands in a normal year, single dry year and multiple dry year period through the year 2035.

c. Sewer and Wastewater Treatment Services in the Region

The SBVMWD does not provide any wastewater treatment services. Within SBVMWD's service area, according to the RUWMP, sewage collection and wastewater treatment services are provided by several retail agencies. In particular, sewer collection systems are provided by the County of San Bernardino, the East Valley Water District and the cities of San Bernardino and Loma Linda.

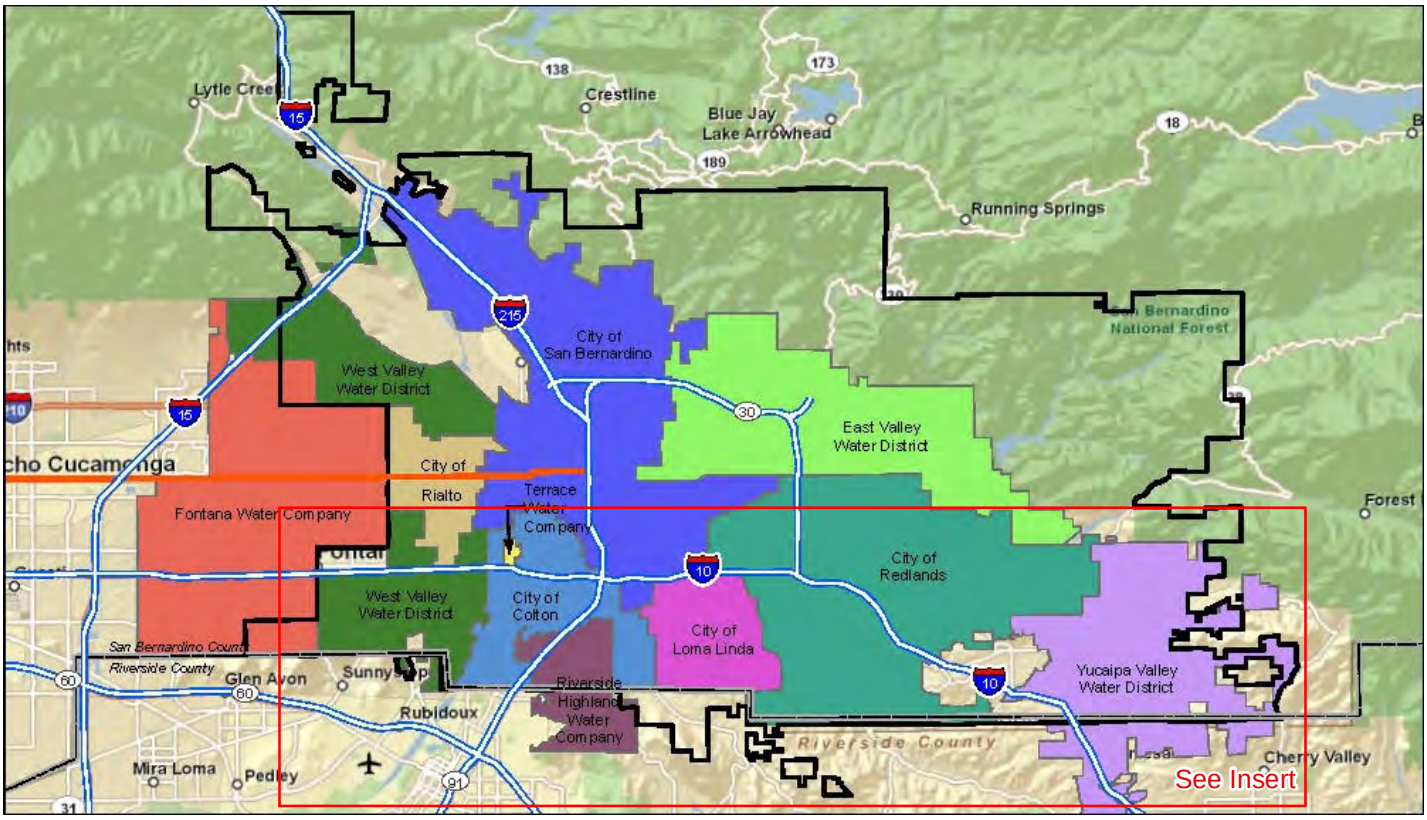
One of the region's two major wastewater treatment plants is the San Bernardino Regional Wastewater Treatment Plant (SBRWTP) in the City of San Bernardino, which has a capacity of 33 mgd (or just under 37,000 AFY). Although as of 2010, flows only averaged around 29,000 AFY, the SBV-RUWMP calls for production to reach over 35,200 AFY by 2035. A number of local providers convey their sewage to this plant for treatment to secondary standards. From the SBRWTP, the effluent is then sent to the Rapid Infiltration/Extraction (RIX) Plant in the City of Colton and treated to Title 22 tertiary standards using natural biofiltration via percolation basins followed by ultraviolet disinfection.

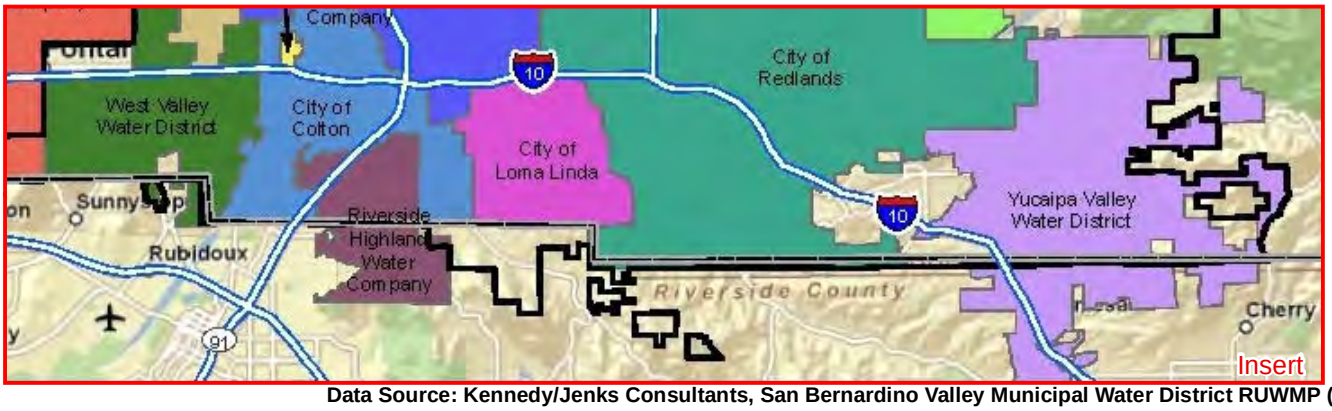
In this way, the RIX can treat up to 41 mgd of secondary effluent. It produced 33,000 AF in 2010 and is projected to reach just over 40,000 AFY by 2035. Ultimate capacity is 45,000 AFY per the RUWMP (page 10-31). RIX-treated wastewater consistently meets or exceeds required discharge standards and is often superior in quality to effluent produced by conventional tertiary treatment facilities. Ultimately, the RIX water is discharged to the Santa Ana River to meet a 16,000-AFY obligation for downstream recharge. Amounts beyond this may be made available for future resale.

The East Valley Water District provides sewage collection services to its members (roughly 7.3 mgd) and conveys the sewage to the SBRWTP. The City of Loma Linda also sends its sewage (up to 7 mgd) to the SBRWTP. Wastewater collected by the West Valley Water District (WVWD) is treated mainly by the City of Rialto, with facilities run by the City of Colton and the Inland Empire Utilities Agency handling the rest. Rialto's plant processes 8 mgd to Title 22 standards for "restricted irrigation." Unused reclaimed water is discharged into the Santa Ana River. The City of Redlands also operated a wastewater treatment facility that produces up to 6 mgd of high-quality tertiary effluent (its maximum capacity is 7.2 mgd per RUWMP, page 9-28); roughly 6,000 AFY total. From this source, the city supplies recycled water (roughly 2,200 AFY) to Southern California Edison for its use as cooling water for its Mountain View power plant. The rest is disposed of via percolation ponds for recharge.

The Yucaipa Valley Water District (YVWD) collects and conveys wastewater through roughly 160 miles of sewer lines to its Wochholz Regional Water Recycling Facility. The RUWMP (page 12-39) reports that this facility was recently expanded to a 6.7-mgd wastewater treatment capacity, with a 10-mgd advanced tertiary treatment capacity ultimately planned. Water from the Wochholz facility (approximately 920-1,075 AFY) is currently discharged into San Timoteo Creek and used by three irrigation customers. Ultimately, YVWD's recycled water production is projected to reach 8,000 AFY.

The City of Colton provides wastewater collection and treatment services to customers within its service area through the system it owns, operates and maintains. Colton also jointly owns, with the San Bernardino Municipal Water District (note, this is not SBVMWD), the RIX facility. Wastewater conveyed to Colton's WWTP undergoes secondary treatment processes in compliance with Santa Ana RWQCB regulations and is then conveyed to RIX for tertiary treatment and reuse or discharge.





Data Source: Kennedy/Jenks Consultants, San Bernardino Valley Municipal Water District RUWMP (2009)

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Figure 4.19.23

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT SERVICE AREA

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d. SBVMWD Subagencies

As listed in Table 4.19-AH, above, SBVMWD supplies wholesale water to a number of subagencies, most of which are located in San Bernardino County. Two, however, serve portions of Riverside County: West Valley Water District and Yucaipa Water District. The City of Riverside (with the Gage Canal Water Company) also exports water from the SBVMWD service area. These local sub-agency providers are summarized briefly below.

West Valley Water District: WVWD, formerly known as the West San Bernardino County Water District, provides retail water service to an area of approximately 19,000 acres; 310 acres of which lie within Riverside County according to LAFCO (2005). Its population was roughly 66,600 people in 2010. WVWD estimated that there were 150 metered connections within Riverside County in 2002 and the total will reach a maximum of 250 connections at build out. WVWD relies on a combination of imported, ground, surface (Lytle Creek) and recycled water to meet demand. Imported water is purchased from SBVMWD (7,000 AFY) and groundwater is extracted from five basins. WVWD shares the Chino, Bunker Hill and North Riverside basins with the cities of Norco and Riverside, as well as Jurupa CSD. According to the RUWMP (page 11-27), WVWD has the capacity to produce up to 36 mgd, but typically meets its demand running at only two-thirds that capacity. As of 2010, it had 25 reservoirs with a total storage capacity of approximately 72.6 million gallons. The district also operates a 9.6-mgd water filtration facility. According to LAFCO, water demand for 2025 will be below the ultimate expected demand within WVWD's service area.

Yucaipa Valley Water District: According to LAFCO (2005), the YVWD provides water, wastewater and recycled water service to customers in the cities of Calimesa and Yucaipa, as well as portions of both unincorporated San Bernardino and (a small portion of) Riverside Counties. Located at the upper portion of the Santa Ana Watershed, it is within the service area of two SWCs, the San Gorgonio Pass Water Agency, in addition to SBVMWD. According to the RUWMP (page 12-1), YVWD's service area spans 40 square miles (nearly 25,800 acres). Its service area also includes the Western Heights Water Company and the South Mesa Water Company, which span 2,900 and 2,560 acres, respectively. In the past, YVWD has sold water to both these companies due to lack of groundwater in their service areas (RUWMP, page 12-6).

YVWD produces groundwater from the San Timoteo Subbasin and the "Beaumont Groundwater Basin," which according to the RUWMP (page 2-12) is composed of three other groundwater basins (primarily the San Timoteo, Upper Santa Ana Valley and the San Gorgonio Pass subbasins). Both basins are located in Riverside County and outside the SBVMWD service area. Approximately 530 AFY was pumped from the Beaumont basin by YVWD in 2008-2009. (Though in total, YVWD pumps groundwater from a total of 11 different area basins per RUWMP Figure 12-3). YVWD operates a surface water treatment plant (with water rights from Wildwood Canyon and Oak Glen) capable of producing up to 1 MGD. It also has 22 above-ground storage tanks (reservoirs) to provide operational storage, as well as water for emergencies and fire protection needs.

YVWD operates the Yucaipa Valley Regional Water Filtration Facility, which processes imported (SWP) water to tertiary standards. The plant's treatment capacity was recently expanded to 8 mgd. The plant uses microfiltration filters and ultraviolet light for disinfection. Plans are underway to add reverse osmosis as well, along with a 15-mile brine line for waste disposal, which began construction in 2010. The plant provides 2,000 AFY of potable water of exceedingly high quality after processing.

According to the RUWMP (page 12-26), YVWD purchased approximately 6,500 AF of wholesale water from SBVMWD in 2010 and plans additional purchases into the future: 7,900 (2015), 8,300 (2020), 8,700 (2025), 9,000 (2030) and 9,400 (2035). YVWD also purchased 700 AF of wholesale water from the San Gorgonio Pass Water Agency (SGPWA) in 2010 and plans to purchase additional water from this agency as well: 1,800 (2015), 2,300 (2020), 2,800 (2025), 3,600 (2030) and 4,500 (2035). By 2010, YVWD imported 28% of its supply. This increased

use of imported water has somewhat eased demand on local groundwater, as has the district's use of recycled water for up to 10% of its demand.

4. Jurupa Community Services District

The Jurupa Community Services District (JCSD) was formed in 1956 for the purpose of providing a sewer system to the community of Jurupa, which is now in the newly incorporated City of Jurupa Valley (roughly two-thirds of which is served by JCSD). JCSD also serves virtually all of the newly incorporated City of Eastvale. However, since these new city incorporations post-dated the initiation of this EIR, this information is included here to ensure a comprehensive water analysis.

The JCSD encompasses an area of 48 square miles in Riverside County and serves approximately 101,700 customers. Its service area includes portions of unincorporated Riverside County in the communities of Pedley, Glen Avon, Sunnyslope and Mira Loma. It also serves several areas outside the district boundary, according to LAFCO (2005). See Figure 4.19.24 (Jurupa and Rubidoux Community Service Districts Service Areas). In addition to water and sewer services, it also provides a variety of critical services such as water, sewer, street lights, frontage landscape maintenance and graffiti abatement. JCSD is also responsible for parks maintenance and recreation programming within its parks territory (i.e., not every service is provided in every area).

Although a member agency of WMWD, JCSD relies on groundwater to serve its customers and does not import water from Western. It does, however, implement conservation programs through WMWD. Unless noted otherwise, the information in this subsection comes from JCSD's 2010 Urban Water Management Plan ('UWMP,' for this subsection).

a. Notes on JCSD

With 16 wells, eight booster stations, 15 reservoirs and a total capacity of 53.7 million gallons, JCSD relies predominantly on groundwater and desalinated brackish groundwater from the Chino Groundwater Basin. JCSD currently has 16 wells, eight booster stations and 15 reservoirs of 53.7 million-gallon capacity. There are two small irrigation water systems located in JCSD, one in Sunnyslope and the other in Eastvale.

The majority of JCSD's service area overlies the Chino Basin, with the remainder over the Riverside Groundwater Basin. The primary source of local groundwater is the Chino Groundwater Basin, consisting of approximately 154,000 acres, which is a part of the Upper Santa Ana Valley groundwater basin. JCSD has rights to groundwater pumping in the Chino Basin through the adjudication and to contract amounts of the Chino desalters. The Chino Basin was adjudicated in 1978 pursuant to a Judgment entered in the Superior Court of the State of California for the County of San Bernardino. Pumping within the basin is managed and reported by the Watermaster, with management activities implemented through an Optimum Basin Management Program (OBMP) that was developed for the Chino Basin in 2000. Safe yield of the Chino Basin is 140,000 AFY; this total is allocated among the overlying agricultural pool (82,800 AFY), the overlying non-agricultural pool (7,400 AFY) and the appropriative pool (49,800 AFY). Water produced in excess of a user's scheduled allotment is charged at a higher rate. Thus, the quantity and availability of groundwater from the Chino Basin is more a matter of the cost than a limitation on JCSD's access to groundwater supply or distribution capabilities.

The JCSD participates in the Chino Desalter Authority (CDA), a joint powers authority, with other neighboring water purveyors using the Chino Basin. The CDA owns and operates two water treatment plants (desalters) for the removal of TDS and nitrates in the Chino Basin, along with 22 wells, pipelines, two booster pump stations and two reservoirs for delivery of this highly treated water. Both desalters utilize reverse osmosis and ion

exchange treatment processes to remove the nitrates from the groundwater. The treatment capacity for each plant is 12 mgd. JCSD has a contractual obligation to purchase 7.8 mgd (8,200 AFY). The CDA expanded capacity beyond the Chino I desalter by adding the Chino II desalter which processes 10.5 MGD; for a total of 22.5 MGD. In addition, the Chino II desalter is being expanded to 20.5 MGD, with JCSD contracted for 3 MGD (3,300 AFY) of that output.

JCSD also operates three sewer systems that each discharge wastewater to different treatment plants. JCSD's Regional Lift Station pumps wastewater to the City of Riverside's Regional Water Quality Control Plant. Second, the Community Finance District (CFD) No. 1 wastewater system is mostly from industrial sources and is discharged to the Inland Empire Brine Line (IEBL), formerly known as the Santa Ana River Interceptor (SARI) System, for treatment in Orange County, which has higher salt limits because it discharges to the Pacific Ocean. Lastly, the Eastvale area discharges to the River Road Lift Station, which pumps the wastewater to another regional treatment plant, operated by the Western Riverside County Regional Wastewater Authority (WRCRWA), of which JCSD is a member. The WRCRWA plant, which is located within JCSD's service area, has a 3.25-mgd capacity.

Table 4.19-AK: Jurupa Community Services District Background Information

Cities and Communities Served[1]					
City of Jurupa Valley		Pedley		Glen Avon	
City of Eastvale		Sunnyslope		Mira Loma	
Service Area Statistics[2]					
Size	30,700 acres		***CA Hydrologic Region***	South Coast	
Population	101,700 people		***Regional WQCB***	8 – Santa Ana	
Services Provided[3]					
Distribution	_	Wholesale Water	***Operations[4]***	_	Potable Water Treatment
	X	Retail Water		_	Desalination
	X	Recycled or Non-Potable Water[3]		X	Groundwater Recharge
	X	Wastewater (Collection)		X	Wastewater Treatment

Footnotes:
1. City/community may be served by this district either wholly or partially. Areas in which only a small fragment are served by the water district or are outside of the district's formal service area may be omitted for clarity.
2. Information from Riverside LAFCO's Water and Wastewater Municipal Service Review (2005).
3. The district operates two small irrigation water distribution systems per its UWMP (page 5).
4. A variety of agencies operate facilities within JCSD's boundaries including CDA and WRCRWA.

Source: JCSD, UWMP, 2010. Riverside LAFCO, Water and Wastewater Municipal Service Review Report, 2005.

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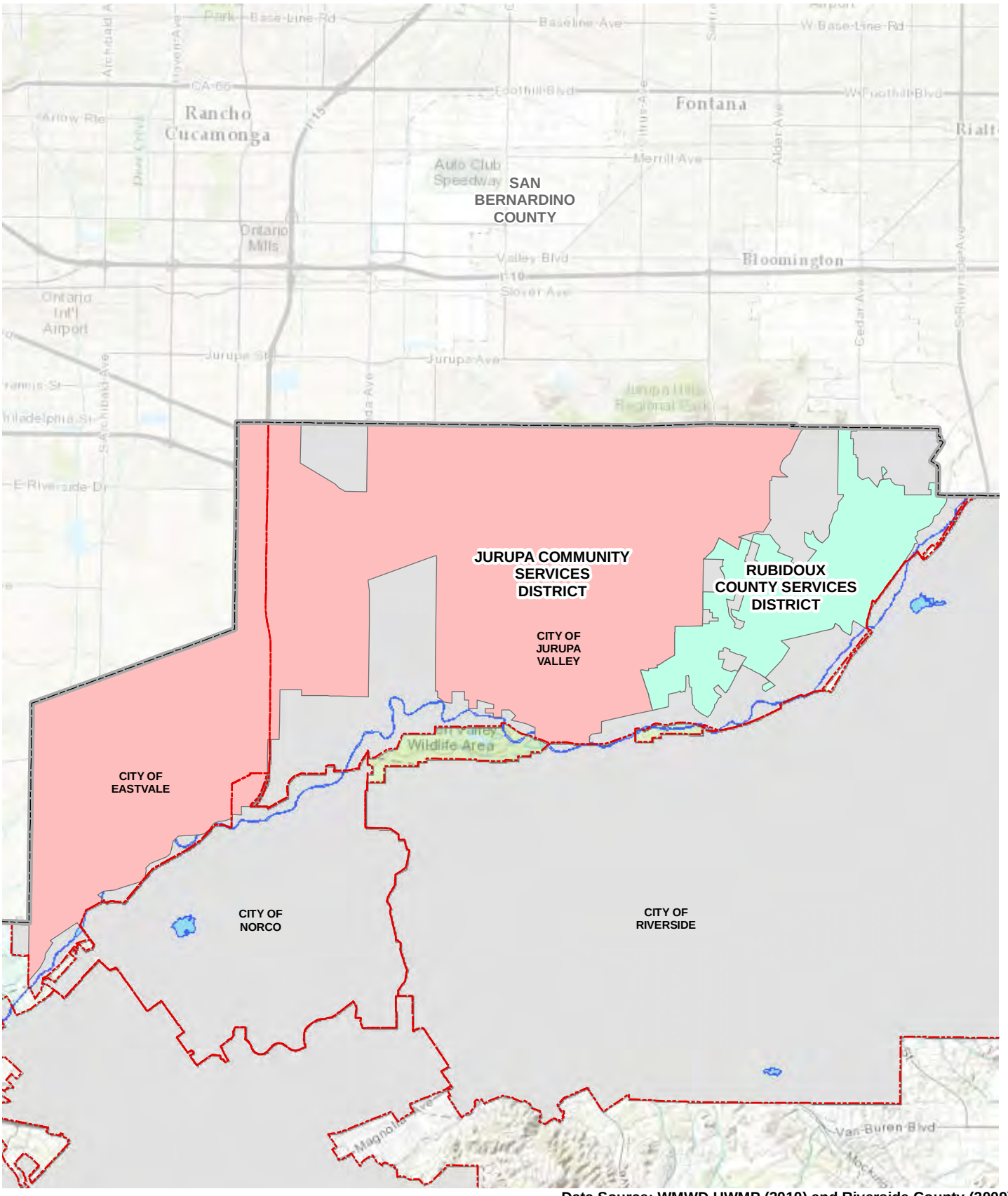

Data Source: WMWD UWMP (2010) and Riverside County (2009)

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Figure 4.19.24

JURUPA AND RUBIDOUX COMMUNITY SERVICE DISTRICTS

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b. Water Supplies

JCSD obtains its groundwater supplies from the Chino and Riverside basins. In total the groundwater supplies in the JCSD service area include three sources of water: potable and non-potable water is pumped from the Chino Basin; groundwater is also extracted from the Chino Basin and treated by the Chino I and II desalters; and, non-potable-use groundwater is also pumped from the Riverside Basin.

Local groundwater supplies from the Riverside Basin (a portion of the Riverside-Arlington Subbasin, No. 8.2-03) represent a small supplemental source of water for JCSD. The district's non-potable water wells are in the Riverside South portion of the Riverside Basin; it is the portion of the basin within Riverside County (the Riverside North portion is within San Bernardino County). As of November 2008, groundwater management planning spearheaded by Riverside Public Utilities (RPU) for the Riverside Groundwater Basin has resulted in issuance of a draft Groundwater Management Plan.

Chino Groundwater Basin, identified in the DWR Bulletin 118, 2003 Update, as the Chino Subbasin (No. 8-2.01) which is a part of the Upper Santa Ana Valley Groundwater Basin. The Chino Basin is the largest groundwater basin in the Upper Santa Ana River Watershed, consisting of approximately 240 square miles (154,000 acres). The majority of JCSD's 48-square mile service area overlies the Chino Basin; the remainder of the service area overlies the Riverside Basin. JCSD has rights to groundwater pumping in the Chino Basin through adjudication and contracts with the Chino desalters, as per above.

The Chino Basin itself is located within portions of the counties of San Bernardino, Riverside and Los Angeles. It is bounded on the north, south, east and northwest by earthquake faults (Cucamonga, Chino, Rialto-Colton and San Jose faults, respectively). It is also bounded by the impermeable rocks of the Jurupa Mountains to the southeast, Puente Hills to the south and San Gabriel Mountains to the north. San Antonio and Cucamonga creeks drain the surface of the basin southward to join Santa Ana River, which flows on towards its Pacific Ocean outlet in Orange County. Annual mean precipitation ranges from 13 to 29 inches across the surface of the basin and averages about 17 inches, per the Bulletin 118 Update (DWR, 2003).

The saturated sediments in the Chino Basin include a shallow aquifer system and at least one deep aquifer system. The shallow aquifer system is generally characterized by unconfined to semi-confined groundwater conditions, high permeability within its sand and gravel units and high concentrations of dissolved solids and nitrate (especially in the basin's southern portions). The deep aquifer system is generally characterized by confined groundwater conditions, lower permeability within its sand and gravel, and lower concentrations of dissolved solids and nitrate (JCSD UWMP, page 30).

Groundwater in the Chino Basin generally flows in a south-southwest direction from the primary areas of recharge in the northern parts of the basin toward the Prado Flood Control Basin in the south. The Chino Basin's Watermaster has three active, comprehensive groundwater-level monitoring programs to collect basin-wise groundwater level data. The groundwater level monitoring program is comprised of about 700 wells, with water level data collected quarterly with the assistance of several partner agencies. The wells in the monitoring program within the southern portion of the basin were mainly selected to assist in Watermaster's monitoring programs for desalter impacts to private well owners, hydraulic control and land subsidence (JCSD UWMP, page 36).

Table 4.19-AL: JCSD Water and Wastewater Service Data

WATER SERVICE DATA

Water Supply (AF)		Water Connections[1]		Water Service Capacity	
Wholesale	600	Domestic	22,500	Total Capacity (AF)	96 / day
State W Project	0	Irrigation	yes	Total Demand (AF)	95 / day
Surface	0	M&I	NP	Peak Capacity (mgd)	31.5
Wells[1]	17	Reclaimed	yes	Peak Demand (mgd)	31
Reclaimed	NP	Other	NP	Storage Capacity (mgd)	40 (14 reservoirs [1])

Water Sources / Suppliers[1]		Water Treatment Facilities[1]		Facility Notes
Import Provider	NONE	Filtration Plants	0	---
Number of Wells	17	Desalination	2[3]	11.5 AFY total *Operated by CDA, not JCSD*
		GW Recharge	0	---

LOCAL WATER SOURCES[1]

Groundwater	Basin (Basin No.)[2]	Amount (AFY)[1]	Notes
	Chino Basin (8-2.01)	24,600	*JCSD potable and non-potable, CDA use also.*
	Riverside Basin (8-2.03)	500	*Non-potable only.*

Other Notes *JCSD does not use imported water at present.*

WASTEWATER SERVICE DATA

System Size (miles)		Sewer Connections (#)		Recycled Water Uses	Facility Notes
Gravity Sewer	200	Domestic	12,800	_ Irrigation	---
Force Main	5.5	Commercial	100	_ Agriculture	---
Other	---	Industrial	1,500	_ Industrial/Util.	*Also see Footnote 4.*

Other Notes *Member of the Western Riverside County Regional Wastewater Authority (WRCRWA) and CDA.*

WASTEWATER TREATMENT FACILITIES

Plant No.	CURRENT		PLANNED[5]		PLANT TOTAL
	Treatment	Capacity (MGD)	Treatment	Add'l Capacity (MGD)	Total Capacity (MGD)
1	Tertiary	1.0	---	---	***1.0***
2[5]	Tertiary	8.0	---	16.0	***24.0***
Totals		***9.0***		***16.0***	***25.0***

Key: NP = not provided (in LAFCO Report) NA = not available --- no change (or NA)
NS = not specified (gen. interchangeable) MGD = million gallons per day AFY = acre-feet per year

Footnotes:
1. Information / data from District's 2010 UWMP. All other information from LAFCO MSR Report, 2005.
2. Basin numbers as per DWR Bulletin 118 Update, 2003.
3. Chino Desalter Authority (CDA) plants within JCSD's service area.
4. JCSD discharges wastes from part of its service area to the Inland Empire Brine Line.
5. New facility if no 'current' data listed; otherwise additional capacity or treatment process upgrade indicated.
6. WRCRWA wastewater treatment plant within JCSD's service area.

Source: Riverside LAFCO. Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005.

The projected groundwater pumping by JCSD in the Chino Basin and Riverside Basin is summarized in Table 4.19-AM (JCSD Water Supply and Demand Summary). JCSD produces water from groundwater sources from the Chino Basin, which was adjudicated by the Judgment in 1978 (Appendix C). The Judgment represents a plenary adjudication of all water rights in the Chino Basin and is administered under the authority of the Watermaster with continuing jurisdiction by the Court. The Judgment declares that the safe yield of the Chino Basin is 140,000 AFY, which is allocated among the three pools as follows: the overlying agricultural pool (82,800 AFY); the overlying non-agricultural pool (7,366 AFY); and, the appropriative pool (49,834 AFY). The Judgment recognizes that there is a substantial amount of available groundwater storage capacity in the Chino Basin that can be utilized for storage and conjunctive use of supplemental water and basin waters. Utilization of this storage capacity is subject to Watermaster control and regulation.

Of JCSD's historical total groundwater pumping from 2005 to 2009, including pumping from the JCSD's existing wells, CDA purchased desalinated water and pumping from the Riverside Basin, on average, about 81-97% of the

water used in the service area was from groundwater extraction. The majority of pumping was in the Chino Basin, pursuant to the Judgment and through the CDA (UMWP, page 40).

JCSD's existing potable water supply comes from 16 wells, all located within JCSD's service area and drilled within the Chino Basin. JCSD's historical pumping for potable use from its existing wells ranged from 15,975 AF in 2009 to 19,747 AF in 2008. Groundwater production in 2009 was less than during the previous four years which is indicative of the recent rate increases, drought conditions and poor economic conditions.

JCSD's existing potable supply well field has a current maximum production capacity of nearly 26,000 gpm potable water (41,900 AFY) as of 2010. However, JCSD does not operate its wells at maximum capacity (i.e., 24 hours per day, 365 days per year) and only uses its maximum capacity during maximum day and peak hour conditions and for redundancy. The existing well field annual production capacity is just under 28,000 AFY for 2010, which is roughly two-thirds the maximum capacity. Historical potable well pumping between 2005 and 2009 has also been below JCSD's well field capacity. The UWMP indicates JCSD's future pumping projections are also below the current well field production capacity of 28,000 AFY and potential future production capacity of 54,000 AFY.

JCSD also receives groundwater extracted from the Chino Basin and treated at the CDA's Chino I and II desalters. Between 2005 and 2009, JCSD purchased roughly 3,500-8,900 AF through the CDA. JCSD's current delivery from the CDA is 8,200 AFY and an additional delivery capacity of 3,300 AFY to JCSD is anticipated by 2015 from the proposed Chino II desalter expansion.

Groundwater quality in the lower Chino Basin is poor, as nitrate and TDS exceeding drinking water standards. Nitrate and TDS intrusion are primarily from historic dairy and agricultural users. Other water quality concerns include the presence of perchlorate, VOCs and other chemicals associated with airport cleanup sites (Ontario International and Chino airports). The Chino Watermaster continues its active role in cleanup sites across the basin. Water quality issues in the Chino Basin have been addressed by the completion of desalter facilities and the installation of well head ion exchange treatment facilities. Water quality produced from these facilities is within standards set for acceptable drinking water by the federal government and the California Department of Public Health (DPH). Water quality in the Riverside South Basin is not a major issue, as it is a minor contributor to JCSD's supplies.

In addition, JCSD currently uses non-potable irrigation wells to extract water from the Chino Basin. Between 2005-2010, JCSD used up to six non-potable wells to produce 200-260 AFY of groundwater. From the Riverside Basin, non-potable groundwater pumping comprised only a small portion of total groundwater pumping, ranging from 267 to 605 AFY during 2005 and 2009. Transfer opportunities currently available in the JCSD service area include the current and future projected transfers from the Rubidoux Community Services District (RCSD), as well as a long-term lease of Chino Basin pumping right from the Santa Ana River Water Company (SARWC). Since 2000, JCSD has been purchasing water from RCSD, which extracts its water from the Riverside South Basin. In 2009, JCSD purchased 480 AF from RCSD. JCSD has opened negotiations with RCSD to purchase additional water from them in the future. Total water transfer from Rubidoux CSD is projected to be 1,500 AFY. JCSD also has a long-term lease from the SARWC of up to 1,200 AFY. The groundwater is pumped using JCSD facilities but is tracked in accordance with the Judgment and the lease agreement.

At present, about 700 AFY of non-potable water is used for irrigation in the district. However, the future water demand in the JCSD service area will increase as development continues and thus could be an important and reliable source of additional water. Up to 4,300 AFY of existing and future irrigation demand in the JCSD service area, such as public facilities including parks, medians, schools and golf courses, could be supplied by non-potable water. Detailed evaluations of existing and future non-potable water demands throughout the service area were

performed that evaluated potential alternatives with non-potable water sources – a "Draft 2008 Non-Potable Water Master Plan" and "2010 Non-Potable Water Evaluation in the Eastern Portion of JCSD Service Area." Currently, JCSD and other entities meet approximately 42% (approximately 1,800 AFY) of their total irrigation demands with non-potable well water. The total estimated future additional demand that could be met by non-potable water is 2,500 AFY. Thus, total ultimate irrigation demand, existing and future, is estimated to be 4,200 AFY. It is projected that up to 500 AFY of recycled water will be available from the WRCWRA plant. JCSD has been working with WMWD to discuss the feasibility of using this recycled water.

c. JCSD Water Demand

Table 4.19-AM shows current and projected water demands for both potable and non-potable water. The water serves a range of customer types, including single-family and multi-family homes, commercial, industrial, institutional, government, landscape and agriculture. Single-family residential represents 70% of the water demand, with landscape irrigation at 10% and agricultural at 1%.

The impact of low precipitation in a given year on a particular supply may differ based on how low the precipitation is, or whether the year follows a high-precipitation year or another low-precipitation year. Within JCSD, the water supply is predominantly from local groundwater and the groundwater basin is recharged from surface supplies. The Chino Basin Watermaster oversees recharge and overdraft prevention within the Chino Basin. Groundwater recharge occurs from the following sources: stormwater, SWP water provided by MWD and recycled water.

To further project its groundwater supply, JCSD is currently pursuing an option to acquire up to 10,000 AFY from WMWD through the proposed Riverside-Corona Feeder Project. This proposed connection to WMWD is to be constructed by 2020 and would provide an additional source of water for JCSD. The feeder project would allow WMWD to purchase SWP water from MWD during wet years when it is available and store it in the San Bernardino Groundwater Basin. Then, it can extract the water from this basin when it is needed in years of drought.

JCSD has a diverse portfolio which currently includes a connection to another agency (Rubidoux CSD), access to the CDA and local groundwater including a lease of up to 1,200 AFY of water rights from the Santa Ana River Water Company (SARWC). Membership also allows access to other sources of supply from the six other CDA members (WMWD, SARWC and the cities of Ontario, Norco, Chino and Chino Hills). To ensure reliability, JCSD intends to increase their water portfolio by pursuing water from WMWD via the Riverside Corona Feeder, the Riverside Basin and recycled water. Water pumped in excess of safe yield is available for pumping but is charged a higher rate in order to cover the cost of replenishment. Stormwater, imported water from the SWP and recycled water contribute to the recharge of the Basin.

As shown above, JCSD has adequate supplies to meet demands during normal, single-dry and multiple-dry years throughout the 20-year planning period. There is no difference in the supply and the demand since the local groundwater supplies are pumped according to the demand. In addition, there is more than sufficient production capacity to meet future demands.

The JCSD manages a water conservation program that includes actively pursuing incidents of waste and regulating sources for excessive leakage and facilities failure. It also has established conservation levels that are enacted in response to a water supply shortage pursuant to JSCD's Water Shortage Contingency Plan and Ordinance No. 317. They include increasing restrictions on water use in response to worsening drought conditions and decreasing available supplies.

The largest customer class in the JSCD service area is residential, accounting for approximately 94% of connections and 70% of total demand. JSCD has nearly 25,400 single- and multi-family residential accounts. Accordingly, JCSD focuses the majority of its conservation efforts on residential use, including offering a number of rebates, educational materials and audit programs. In addition, all water deliveries are metered and all new water service accounts require meters. Likewise, large landscapes, including landscaped medians, greenbelts, parks and golf courses, have dedicated irrigation meters. In addition, the limited agriculture in the region is monitored with individual meters.

Under its Ordinance No. 317, JCSD has developed a four level rationing plan to be invoked during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity and anticipated duration of the water supply shortage. Mandatory prohibitions enacted during water shortages, e.g., drought, include educational programs and changes in water use.

d. JCSD Water Availability

As mentioned above, water rights within the Chino Basin were adjudicated in 1978. Pumping within the Chino Basin is managed and reported by the Watermaster. The principal function of adjudication is to control the use of a water source to ensure the source is utilized in an optimum manner.

The Chino Basin stores approximately 5 million AF of groundwater with the capability of storing an additional 1 million AF. For purposes of adjudication, the central feature is the determination of the safe yield of the basin. The Judgment established the safe yield of the Chino Basin as 140,000 AFY. Also as mentioned above, pursuant to the Judgment, the average safe yield of the Chino Basin is allocated among three "pools" of users. In the Chino Basin, groundwater is reallocated to the appropriative pool for urban use from the overlying agricultural pool when not pumped by the agricultural users.

The Watermaster may determine that the operating safe yield can be higher from year-to-year depending on factors including favorable precipitation and management efforts that maximize the beneficial use of the Chino Basin. Based on the historical records of pumping in the Chino Basin, as reported by the Watermaster, total pumping (basinwide) ranged approximately from 160,000 AF to 180,000 AF from 2000 to 2005 and started to decline in 2007. Pumping for the 2009-2010 production year was 114,496 AF.

The Judgment does not place specific limits upon the groundwater production by any party to the Judgment, including JCSD. Each of the parties to the Judgment, divided into three pools, are prohibited from pumping the basin in excess of their rights except under certain proscribed situations. In particular, additional groundwater production in excess of the safe yield is allowed by the adjudication provided that the pumped water is replaced with replenishment water. Historically, the Watermaster has purchased imported water from MWD to provide replenishment water when pumping exceeds the safe yield of the Chino Basin. Water from MWD is available via the Foothill Feeder. Since 2000, roughly 12,800 AFY of supplemental (SWP) water recharge has been provided to the basin (JCSD UWMP, page 45).

The Judgment expresses a clear expectation that its subject parties, including JCSD, would produce water in excess of their adjudicated production rights; provided, however, they must pay a replenishment assessment when production exceeds that amount. JCSD's ability to produce water from the Chino Basin is thus largely a matter of cost. Water produced in excess of a party's production rights costs more than water produced within a party's production rights. Thus, the quantity and reliability of groundwater supplies is a matter of the cost of the water produced from the Chino Basin rather than limitations on JCSD's access to groundwater supply.

The Riverside South Basin is not adjudicated and not identified as overdrafted nor is it projected by the DWR to become overdrafted. According to the UWMP (page 43), current and future projected pumping by JCSD in the Riverside Basin and projected pumping by other major pumpers (i.e., City of Riverside) in this basin are expected to be within sustainable yields since efforts to manage groundwater in the basin have been initiated; thus, availability of this local groundwater source for JCSD is not considered an issue.

In terms of water supply reliability, JCSD has various water supplies available to meet demands during normal, single-dry and multiple-dry years. After analyzing the various supply and demand issues associated with these varying conditions, the JCSD UWMP (page 82) finds that any supply deficits "will be satisfied with local groundwater." And that, "Overall, the Chino Basin is considered a reliable supply as the recharge is managed through the Chino Basin Watermaster with local and [MWD] replenishment water." Further, in its 2010 RUWMP, MWD indicated that it will be able to meet all demands during the next 20 year planning period. Even during multiple dry year periods with an assumed 10% increase in demand, the demand will be met. In addition, a regional message from MWD regarding water conservation during dry years, which can be reinforced by JCSD, will likely minimize increases in dry year demand.

Table 4.19-AM: JCSD Water Supply and Demand Summary

DATA SUMMARY						Jurupa Community Services District
DATA[1]	2009	2015	2020	2025	2030	2035
Population	101,700	113,800	130,400	132,500	134,800	137,000
EXISTING SUPPLIES						
Water Budget – Average Year[5] (in AF)						
Import[2]	0	0	0	0	0	0
Groundwater[3]	13,600	13,800	13,700	12,800	11,900	10,500
Desalinated Water[4]	8,700	8,700	11,500	11,500	11,500	11,500
RCSD Transfer	700	1,500	1,500	1,500	1,500	1,500
Recycled/Other	700	NS	NS	NS	NS	NS
Supply Total	***23,700***	***29,000***	***33,900***	***34,500***	***35,100***	***35,600***
Demand Total	23,700	29,000	33,900	34,500	35,100	35,600
Net Supply	0	0	0	0	0	0
Water Budget – Single Dry Year[5] (in AF)						
Import[2]	0	0	0	0	0	0
Groundwater[3]	16,000	16,700	17,100	16,300	15,400	14,100
Desalinated Water[4]	8,700	11,500	11,500	11,500	11,500	11,500
RCSD Transfer[3]	700	1,500	1,500	1,500	1,500	1,500
Recycled/Other	3,700	~~2,200~~	~~2,200~~	~~2,200~~	~~2,200~~	~~2,200~~
Supply Total	***25,300***	***29,700***	***35,100***	***35,700***	***36,400***	***37,100***
Demand Total	29,000	~~31,900~~	~~37,300~~	~~37,900~~	~~38,600~~	~~39,200~~
Net Supply	0	0	0	0	0	0
Water Budget – Multiple Dry Years [5,6] (in AF)						
Import[2]	0	0	0	0	0	0
Groundwater[3]	18,700	NS	NS	NS	NS	NS
Desalinated Water[4]	8,700	8,700	11,500	11,500	11,500	11,500
RCSD Transfer[3]	700	1,500	1,500	1,500	1,500	1,500
Recycled/Other	900	NS	NS	NS	NS	NS
Supply Total	***29,000***	***31,200***	***36,600***	***38,800***	***39,500***	***40,000***
Demand Total	29,000	~~28,900~~	~~34,000~~	~~39,500~~	~~40,100~~	~~40,800~~
Net Supply	0	0	0	0	0	0
Net Adequacy	***yes***	***yes***	***yes***	***yes***	***yes***	***yes***

Key: NS = not specified --- = not applicable

Footnotes:

1. All data from UWMP, unless noted otherwise. All data rounded to nearest hundred.
2. No imported water used by JCSD at present. However, UWMP does identify MWD/WMWD as a source of future water transfers, as shown under "Future."
3. Potable groundwater only (non-potable listed under "Other").
4. Processed Chino Basin water purchased from Chino Desalter Authority (CDA) per contractual obligation.

5. Water years used (for average, dry and multi-year dry benchmarks): 2004, 2009 and 2009-1012.
6. Third dry year (largest demand values of the three-year period) listed.
Source: JCSD, UWMP, Tables 6-2, 6-3, 6-5, 6-6 and 6-7, 2010.

5. Rubidoux Community Services District

Formed in 1952, the Rubidoux Community Services District (RCSD) was California's first community services district. Today, RCSD continues to provide retail domestic potable water, agricultural water treatment and distribution, wastewater collection and fire protection services to a community that has grown from 4,000 to over 26,000. The RCSD is now almost entirely within the eastern side of the newly incorporated (July 2011) City of Jurupa Valley. However, since the incorporation post-dated the initiation of this EIR, information on this district is included here to ensure a comprehensive water analysis for GPA No. 960. According to the district's UWMP, it also serves roughly 120 acres located in San Bernardino County.

The information presented in this subsection comes from the 2005 Riverside LAFCO report entitled, "Water and Wastewater Municipal Services Review," and RCSD's 2010 Urban Water Management Plan ('UWMP' for the purposes of this subsection), dated November 2011.

a. Notes on RCSD

As shown in Figure 4.19.24, RCSD's service area encompasses an 8.5-square mile service area with a service population of approximately 26,000 located wholly within the City of Jurupa Valley. RCSD's water supply and distribution system can provide over 8.0 million gallons a day (mgd) of potable water. The construction of a manganese removal plant and a nitrate treatment plant has afforded the district the opportunity to serve the community with water from existing groundwater supplies. The District also delivers 2.0 mgd to the Regional Wastewater Treatment Plant located in and operated by the City of Riverside. RCSD also sells water to the City of Norco and the Santa Ana Water Company.

Table 4.19-AN: Rubidoux Community Services District Background Information

Water Purveyors Served[1]			**Cities and Communities Served[2]**		
Santa Ana Water Company			City of Jurupa Valley		
Jurupa Community Services District			City of Norco		
Service Area Statistics[3]					
Size		4,800 acres	***CA Hydrologic Region***		South Coast
Population		26,200 people	***Regional WQCB***		8 – Santa Ana
Services Provided[3]					
Distribution	_	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	X	Retail Water		_	Desalination
	_	Recycled or Non-Potable Water		_	Groundwater Recharge
	X	Wastewater (Collection)		_	Wastewater Treatment

Footnotes:
1. Water sold or transferred to these entities.
2. City/community may be served by this district either wholly or partially.
3. Data from Riverside LAFCO, Water and Wastewater Municipal Service Review, 2005.
4. Only facilities operated directly by the listed water agency included (or as noted otherwise).
Source: RCSD, UWMP, 2010. Riverside LAFCO, Water and Wastewater Municipal Service Review Report, 2005.

Table 4.19-AO: RCSD Water and Wastewater Service Data

WATER SERVICE DATA					
Water Supply (AF)		**Water Connections**		**Water Service Capacity**	
Wholesale	---	Domestic	6,000	Total Capacity (AF)	10,800
State W Project	0	Irrigation	20	Total Demand (AF)	5,800
Surface	0	M&I	400	Peak Capacity (mgd)	12.5
Wells	5,000	Reclaimed	0	Peak Demand (mgd)	9.95
Reclaimed	0	Other	0	Storage Capacity (mgd)	0
Water Sources / Suppliers[1]		**Water Treatment Facilities[1]**		**Facility Notes**	
Import Provider	NONE	Filtration Plants	2	---	
Number of Wells	12	Desalination	0	---	
		GW Recharge	0	---	
LOCAL WATER SOURCES[1]					
Groundwater	***Basin (Basin No.)*** [2]		***Amount (AFY)***	***Notes***	
	Riverside-Arlington (8-2.03)		6,500	*Amount pumped in 2010 per UWMP.*	
WASTEWATER SERVICE DATA					
System Size (miles)		**Sewer Connections (#)**		**Recycled Water Uses**	
Gravity Sewer	72.4	Domestic	5,600	_ Irrigation	_ Industrial / Utility
Force Main	3.6	Commercial	400	_ Agriculture	_ GW Recharge
Other	---	Industrial	0	X *None*	
WASTEWATER TREATMENT FACILITIES *NONE*					

Key: NP = not provided (in LAFCO Report) NA = not available --- = no change or NA
NS = not specified (gen. interchangeable) TAFY = thousand acre-feet per year MGD = million gallons/day

Footnotes:
1. Information / data from District's 2010 UWMP. All other information from LAFCO MSR Report.
2. Basin numbers as per DWR Bulletin 118.

Source: Riverside LAFCO. Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley. 2005.

b. RCSD Water Supply

As of December 2005, RCSD has over 6,800 metered connections, including 6,400 residential and 400 commercial/industrial. RCSD's water supply is obtained 100% from groundwater (the Riverside South Basin of the Riverside-Arlington Subbasin). As explained under Jurupa CSD, this basin is adjudicated and its groundwater management is "currently the responsibility of WMWD and all groundwater extractors within the basin." (RCSD UWMP, page 23) The RCSD's UWMP (page 12) reports all water users in Rubidoux use this groundwater source. RCSD currently does not purchase or otherwise obtain water from a wholesale water supplier and recycled water is not currently available to the district. The UWMP notes that RCSD expects that groundwater extracted from the Riverside South Basin by its six potable and six non-potable (irrigation only) groundwater wells will "continue to be its primary (and possibly only) source of water through the year 2035 and possibly beyond."

RCSD has approximately 60 miles of pipeline, 11 active production wells (six potable water and five non-potable water), four storage reservoirs and two booster stations. According to 2004 data presented in the LAFCO report, RCSD's retail water system serves a peak demand of 10.0 MGD with a peak capacity of 12.5 MGD and one-day storage capacity. Also according to LAFCO, in 2004 RCSD's existing retail water demand was 5,800 AF and existing supply 10,600 AF. At that time, future (2025) retail water demand was projected at 10,600 AF and future supply RCSD planned to serve was 19,400 AF. The average daily water use for retail customers is approximately 10.8 AF or 3.5 million gallons.

Table 4.19-AP: RCSD Water Supply and Demand Summary

DATA SUMMARY					Rubidoux Community Services District	
DATA[1]	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Population	29,900	32,900	36,400	39,500	42,200	45,200
Water Budget – Average Year[2] (in AF)						
Groundwater[5]	6,500	7,600	8,100	8,700	9,200	9,700
Recycled/Other[3]	500	600	700	700	800	800
Transfers[4]	700	400	500	500	500	500
Demand (Use) Total[5]	***7,600***	***7,600***	***8,100***	***8,700***	***9,200***	***9,700***
Supply Total[6]	17,000	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~
Net Supply	+ 9,400	+ 9,400	+ 8,900	+ 8,300	+ 7,800	+ 7,300
Water Budget – Single Dry Year (in AF)						
Groundwater[5]	6,500	7,600	8,100	8,700	9,200	9,700
Recycled/Other[3,4]	1,200	1,000	1,000	1,000	1,000	1,000
Demand (Use) Total[6]	***7,600***	***7,600***	***8,100***	***8,700***	***9,200***	***9,700***
Supply Total[6]	17,000	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~
Net Supply	+ 9,400	+ 9,400	+ 8,900	+ 8,300	+ 7,800	+ 7,300
Water Budget – Multiple Dry Years (in AF)						
Groundwater[5]	6,500	7,600	8,100	8,700	9,200	9,700
Recycled/Other[3,4]	1,200	1,000	1,000	1,000	1,000	1,000
Demand (Use) Total[6]	***7,600***	***7,600***	***8,100***	***8,700***	***9,200***	***9,700***
Supply Total[6]	17,000	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~	~~17,000~~
Net Supply	+ 9,400	+ 9,400	+ 8,900	+ 8,300	+ 7,800	+ 7,300
Base Adequacy	***yes***	***yes***	***yes***	***yes***	***yes***	***yes***

Footnotes:
1. All data from RCSD UWMP, unless noted otherwise. All data rounded to nearest hundred
2. Per UWMP Table 18, water years used (average, dry and multi-year dry): 2001, 2007 and 2007-2009.
3. Value is for system losses (UWMP, Table 7). No groundwater recharge or recycled water used by RCSD.
4. Past (2010) and projected (2015-2035) sales to other agencies (i.e., Jurupa CSD).
5. Actual amounts pumped/used per UWMP Tables 10 and 11.
6. Total supply available is RCSD's current maximum production capability. However, actual amounts pumped would only be as needed to meet actual demand.
7. Per UWMP, page 34, "The district will develop additional groundwater extraction and groundwater treatment facilities as needed to ensure a continuous and adequate water supply for its service area."

Source: RCSD, 2010 UWMP, 2010.

RCSD also has wastewater facilities that consist of regional conveyance facilities, gravity sewers, lift stations and approximately 80 miles of wastewater collection lines. As of 2004, RCSD had approximately 6,000 wastewater service connections. Since the 1970s, RCSD no longer conducts wastewater treatment itself. At present, all wastewater from the service area is conveyed to the City of Riverside for treatment at the Riverside Regional Water Quality Control Plant, which is owned and operated by Riverside and provides tertiary water treatment. This plant's capacity as of 2010 was 40 mgd (approximately 123 AF per day), with expansion proposed.

RCSD currently has capacity rights in the treatment plant for average daily wastewater flows of 3.0 MGD. The volume of wastewater treated as of 2004 was approximately 2.0 MGD. In 2010, RCSD reports 2,230 AF of wastewater was treated. Into the future, the district projects quantities of 2,370 AFY (2015), 2,420 AFY (2020), 2,460 (2025), 2,500 (2030) and 2,550 (2035). All treatment plant effluent is treated to be used for irrigation or is discharged to the Santa Ana River. Recycled water from this plant is not readily available for use by RCSD and, due to economic constraints, no plans to utilize this water are currently proposed or anticipated over the next 25 years.

c. RCSD Water Availability

As shown in Table 4.19-AP (RCSD Water Supply and Demand Summary), the RCSD estimates an available groundwater supply of 14,000 AFY (potable) and 3,000 AFY of non-potable water. These estimates are based on

the "maximum quantity of water that the district is capable of producing if all existing wells operated continuously for 24 hours per day." (RCSD UWMP, page 32) It further notes that the district has "not experienced an actual supply deficiency during dry years, and supply and demand remain relatively unchanged in the district's service area during dry years." This combined with the relatively small amounts of future development anticipated in the district lead the RCSD to plan for relatively stable water supply and demand needs, with growth increases in demand being readily met by the district's existing surplus pumping ability. As indicated by the data above, RCSD has sufficient water supplies and infrastructure to serve both its existing and projected water and wastewater (sewer) needs.

G. Water Providers in Eastern Riverside County

As noted previously, a variety of water providers serve eastern Riverside County, particularly within Coachella Valley. Of these providers, two are State Water Contractors: the Coachella Valley Water District, which imports water from both the Colorado River and (indirectly via MWD) the SWP, and the Desert Water Agency, which also (indirectly) imports SWP water. The Palo Verde Irrigation District (PVID) also uses water from the Colorado River, but only for irrigation purposes; it does not supply municipal (drinking) water. Potable water used in the far east desert region of unincorporated Riverside County comes from local groundwater either through private wells, a mutual water company (shared private system) or through arrangement with the City of Blythe. See discussion in Section 4.19.4-B for more information on groundwater supplies.

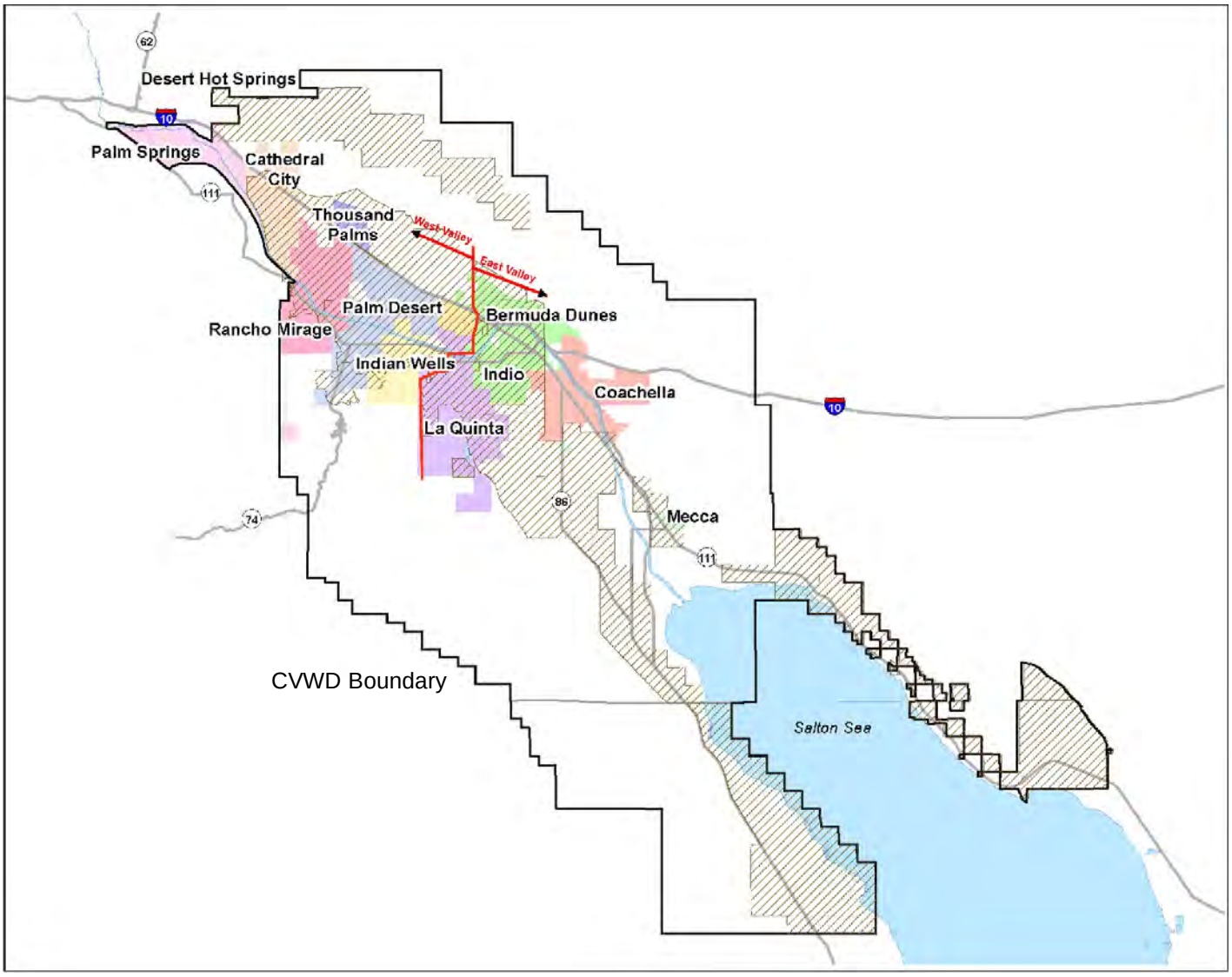
In this section, eastern Riverside County providers are summarized, with expanded details provided for CVWD, in particular, as the region's major wholesaler. City water districts are not described in any great detail as they serve incorporated cities only or predominantly.

1. Coachella Valley Water District

Coachella Valley Water District (CVWD), encompassing 995 square miles, extends from San Gorgonio Pass to the Salton Sea. The District provides water to approximately 366,500 residents, in addition to irrigated farmland and a variety of commercial, resort and industrial users. Services provided by CVWD include the delivery of domestic and irrigation water, water conservation, wastewater reclamation and recycling, stormwater protection, agricultural drainage, groundwater recharge and water education. The management and implementation of CVWD water resources are conducted pursuant to its 2010 Urban Water Management Plan Final Report, dated July 2010 ('UWMP' for this subsection).

a. Notes on CVWD

For water management purposes the valley is divided into west valley and east valley regions. The West valley region, which includes the cities of Palm Springs, Cathedral City, Rancho Mirage, Indian Wells and Palm Desert, has a predominantly resort and recreation-based economy that relies on groundwater as its principal water source. The east valley, which includes the cities of Coachella, Indio and La Quinta, as well as the unincorporated communities of Mecca and Thermal, has a more agricultural-based economy relying on both groundwater and Colorado River water imported via the Coachella Canal. The CVWD service area also includes the western and eastern shores of the Salton Sea which relies on groundwater pumped from the Whitewater River Subbasin. See Figure 4.19.25 (CVWD Service Area) and Figure 4.19.26 (Colorado River Water Users and Infrastructure).



CVWD Urban Water Service Area

Data Source: Kennedy/Jenks Consultants, CVWD UWMP (2009)

December 16, 2013

Figure 4.19.25

COACHELLA VALLEY WATER DISTRICT SERVICE AREA

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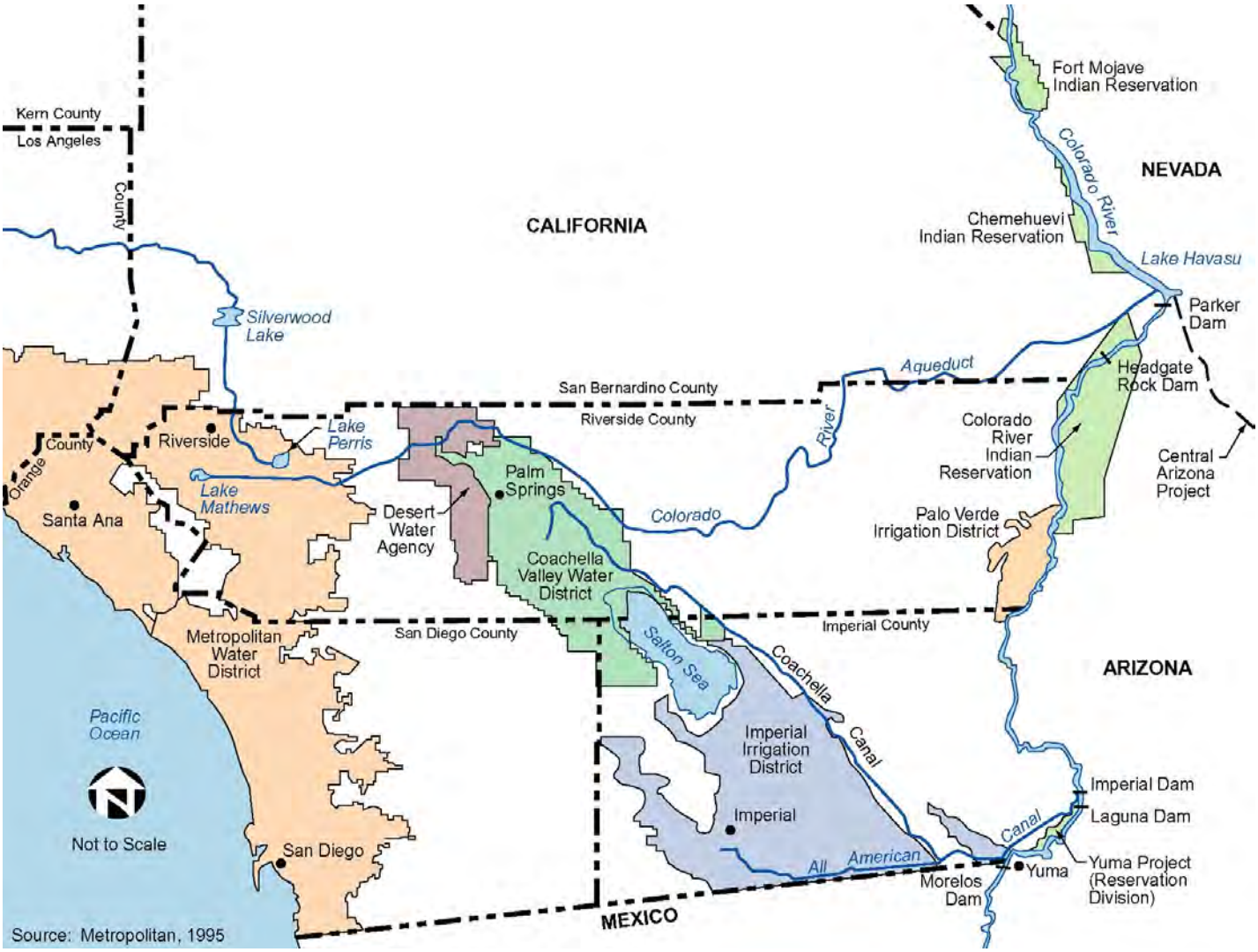

Data Source: CVWD UWMP (2005)

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Figure 4.19.26

COLORADO RIVER USERS AND INFRASTRUCTURE

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Nearly all of the Colorado River Hydrologic Region, in which the CVWD is located, has a subtropical desert climate with hot summers and mostly mild winters, and the average annual rainfall is quite low. Average annual precipitation ranges from three to six inches, most of which occurs in the winter. However, summer storms do occur and can be significant in some years. Clear and sunny conditions typically prevail, with the region receiving sunshine 85-90% of each year, the highest value in the United States. Winter maximum temperatures are mild, but summer temperatures are very hot, with more than 100 days over 100° F each year. As an indicator of climate in the Coachella Valley, Palm Springs has an average 24-hour temperature of 73° F.

With the rapid population increase in the Coachella Valley in the early 2000s, the valley's population increased by 35% since 2000. Since late 2007, however, Riverside County has been negatively affected by the current economic recession and some areas have experienced high rates of foreclosures and unemployment. Due to this economic downturn, growth in Riverside County has significantly moderated over the last two years. The RCP-06 growth forecasts were developed and adopted in late 2006 and early 2007, before the onset of the widespread recession. Therefore, the slowdown in the housing market, which was one of the primary components of the recession, is not accounted for in the RCP-06 forecasts. As a result of the recession, economists have predicted slower growth between 2010 and 2015, which could result in a lower than projected (i.e., RCP-06) growth rate for the valley in the near term. The timing and extent of this reduced growth rate cannot be accurately predicted at this time. Nevertheless, because the UWMP planning period extends through 2035, CVWD states that it expects the effect of the recession on growth in the valley to be attenuated over the long term. Changes in the growth forecast will be reflected in future UWMP updates, but to be conservative (overestimating growth and hence water demand), it is assumed that the RCP-06 growth forecasts are applicable.

Table 4.19-AQ: Coachella Valley Water District Background Information

Sub-Agencies, Cities and Communities Served [1, 2]		
Coachella Water Authority (City of Coachella)	City of Palm Desert	Cathedral City
Indio Water Authority (City of Indio)	City of Palm Springs	City of La Quinta
City of Rancho Mirage	City of Indian Wells	Community of Mecca Community of Thermal

Service Area Statistics[3]			
Size	640,000 acres	***CA Hydrologic Region***	Colorado River
Population	202,700 people	***Regional WQCB***	7 - Colorado River

Services Provided[3]					
Distribution	_	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	X	Retail Water		_	Desalination
	X	Recycled or Non-Pot. Water		X	Groundwater Recharge
	X	Wastewater (Collection)		X	Wastewater Treatment

Footnotes:
1. Unless noted otherwise, the District provides wholesale water to these sub-agencies.
2. City/community may be served by this district either wholly or partially. Areas in which only a small fragment are served by the water district or are outside of the district's formal service area may be omitted for clarity.
3. Services and service area statistics from Riverside LAFCO, 2005 Water and Wastewater Municipal Service Review.
4. Only facilities operated directly by the listed water agency included.

Source: CVWD, UWMP, 2010. Riverside LAFCO, Water and Wastewater Municipal Service Review Report, 2005.

b. CVWD Water Supplies

CVWD relies on a combination of local groundwater, Colorado River water, SWP exchange water, surface water and recycled water to meet water demands. For its urban water supply, CVWD does not rely on a wholesale water agency; rather, it draws 100% of its supply from local groundwater, a portion of which is replenished from imported water. For imported water, CVWD is a contractor with the United States to receive Colorado River water and both CVWD and DWA are contractors with the State of California to receive SWP water. See Table 4.19-AS (CVWD Water Supply and Demand Summary). The information below discusses these sources, with an emphasis on groundwater. Additional discussions of SWP and Colorado River waters are provided in prior parts

of Section 4.19.3, above. Also, though a State Water Contractor, the CVWD does not currently sell water to other agencies.

The only direct water source for urban water use in the Coachella Valley is local groundwater. Although SWP Exchange and Colorado River water are used to replenish the groundwater basin, the potable water distribution system does not currently receive water directly from either imported water source. Recycled water, as discussed later in this section, is also used extensively by non-potable water customers for irrigation purposes to offset groundwater pumping, but it is not used to offset the demand of urban potable water customers.

Table 4.19-AR: CVWD Water and Wastewater Service Data

WATER SERVICE DATA

Water Supply (AF)		Water Connections		Water Service Capacity	
Wholesale	NP	Domestic	81,800	Total Capacity (AF)	257,000
State W Project[5]	33,000	Irrigation	3,900	Total Demand (AF)	129,000
Surface[1]	5,800 (ave.)	M&I	2,800	Peak Capacity (mgd)	200
Wells	257,000	Reclaimed	NP	Peak Demand (mgd)	200
Reclaimed[1]	13,100	Other	1,400	Storage Capacity (mgd)	NP

Water Sources / Suppliers[1]		Water Treatment Facilities[1]		Facility Notes
Import Provider	MWD [4, 5]	Filtration Plants	---	---
Number of Wells	80	GW Recharge	yes	*Elaborate GWR program with SWP.*

LOCAL WATER SOURCES[1]

	Source	Amount (AFY)	Notes
Surface Water	Whitewater River, Snow Creek, Falls Creek, Chino Creek	NS	---
	Basin (Basin No.) [2]	**Amount (AFY)**	**Notes**
Groundwater	Whitewater Basin (7-21.01)	28,800,000	---
	Mission Creek Basin (7-21.02)	2,600,000	---

Other Notes: *Imported water used for groundwater basin recharge; pumped indirectly.*

WASTEWATER SERVICE DATA

System Size (miles)		Sewer Connections (#)		Recycled Water Uses			
Gravity Sewer	1,000	Domestic	81,000	X	Irrigation	X	Industrial/Util.
Force Main	37	Commercial	0	X	Agriculture	X	GW Recharge
Other	---	Industrial	0				

WASTEWATER TREATMENT FACILITIES

Plant No.	CURRENT		PLANNED		Total Capacity (mgd)
	Treatment	Capacity / Ave. (mgd)	Treatment	Add'l Capacity (mgd)	
1	WRP-1 Secondary	0.15	---	---	**0.15**
2	WRP-2 Secondary	0.18 / 0.03 ave	---	---	**0.18**
3	WRP-4 Secondary	9.9 / 4.75 ave	Tertiary	---	**9.90**
4	WRP-7 Second. and Tert.	5.0 and 2.5 / 3.0 ave	Tertiary	5.0 additional	**7.50**
5	WRP-9 Secondary	0.40 / 0.33	---	---	**0.40**
6	WRP-10 Sec. and Tert.	18.0 and 10.8 / 10.8 ave	---	---	**18.50**
Totals		***31.63***	**---**	***5.0***	***36.63***

Key: NP = not provided (in LAFCO Report) NA = not available --- denotes no change or not applicable
NS = not specified (gen. interchangeable) mdg = million gallons per day

Footnotes:
1. Information / data from District's 2010 UWMP. All other information from LAFCO MSR Report.
2. Basin numbers as per DWR Bulletin 118.
3. Water from MWD in exchange for CVWD's and DWA's portion of SWP water per 1960s agreement.
4. Pumped from groundwater basin.

Source: Riverside LAFCO, Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005.

The urban water distribution system is defined as the area served by CVWD's potable groundwater production wells. CVWD has non-potable irrigation customers who only receive untreated Colorado River water via a

separate irrigation distribution system (the Coachella Canal) that was installed by the United States Bureau of Reclamation in the 1950s primarily for agricultural irrigation. Prior to receiving Colorado River water, these users obtained groundwater from private wells. CVWD plans to install infrastructure to allow its urban water customers to obtain Colorado River water in the future as development occurs. This will include both non-potable Colorado River water for landscape irrigation purposes and treated Colorado River water for potable use. CVWD's non-urban customers may also potentially receive desalinated irrigation drain water and recycled water in the future. These two potential urban water sources are also discussed briefly, below.

(1) Groundwater

As shown in Figure 4.19.14, groundwater is the principal source of municipal water supply in the Coachella Valley. CVWD obtains groundwater from both Whitewater River and the Mission Creek subbasins. The Whitewater River Subbasin is a common groundwater source, which is shared by CVWD, Desert Water Agency (DWA), Myoma Dunes Mutual Water Company (Myoma), the cities of Indio and Coachella, and numerous private groundwater producers. For purposes of administering a replenishment assessment, CVWD divides the Whitewater River Subbasin into the Upper and Lower Whitewater River 'Areas of Benefit' (AOBs). Myoma Dunes and the cities of Indio and Coachella obtain water from the Lower Whitewater River AOB. The Mission Creek Subbasin is also a common water supply that is utilized by CVWD, Mission Springs Water District and private groundwater producers.

Both CVWD and DWA have legal authority (under the 1992 CVWD-DWA Water Management Agreement) to manage the groundwater basins within their respective service areas. Subject to certain legal requirements, each agency may levy an assessment on groundwater pumping to finance the acquisition of imported and recycled water supplies and to recharge the groundwater basins. Towards this end, CVWD has prepared a water management plan (CVWMP, herein) for the Whitewater River Subbasin (7-21.01) and is currently preparing one for the Mission Creek groundwater basin (7-21.02). For details on the legal basis for the water rights involved with these basins, as well as other contractual water rights used by CVWD, refer to the 1992 CVWD-DWA Water Management Agreement.

The Whitewater River Subbasin is not adjudicated. For oversight purposes, it is divided into two management areas, the Upper and Lower Whitewater River Subbasin AOBs. The Upper Whitewater River Subbasin AOB is jointly managed by CVWD and DWA under the terms of the 1976 Water Management Agreement, while the Lower Subbasin AOB is managed only by CVWD. DWA and CVWD jointly operate groundwater replenishment programs wherein groundwater pumpers within designated areas of benefit pay a per-acre-foot charge that is used to fund water importation and aquifer recharge. The Whitewater River Subbasin is further divided into the Palm Springs, Thermal, Thousand Palms and the Oasis subareas.

In 1964, the DWR estimated that the Coachella Valley groundwater basin contained a total of approximately 39.2 million AF of water in the first 1,000 feet below the ground surface; much of this water originated as runoff from the adjacent mountains. Of this amount, approximately 28.8 million AF of water was stored in the Whitewater River Subbasin. However, the amount of water in the subbasin has decreased over the years due to pumping to serve urban, rural and agricultural development in the Coachella Valley that has withdrawn water at a rate faster than its rate of recharge.

Historical fluctuations of groundwater levels within the Whitewater River Subbasin indicate a steady decline in the levels throughout the subbasin prior to 1949. With the importation of Colorado River water from the Coachella Canal after 1949, the demand on the groundwater basin declined in the east valley and the groundwater levels rose sharply. However, since the early 1980s, water levels in this area have again declined, at least partly due to increasing urbanization and groundwater usage. Recharge activities with SWP exchange water began in 1973 at the

Whitewater River Recharge Facility, though activities there have varied depending on SWP exchange water availability. Although the recharge activities have led to stabilization of the groundwater levels near the recharge basins, water levels in the areas of Palm Desert and southerly have generally declined.

Table 4.19-AS: CVWD Water Supply and Demand Summary

DATA SUMMARY						Coachella Valley Water District
DATA[1]	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Population[2]	202,700	244,700	314,000	386,300	442,100	512,200
EXISTING SUPPLIES[3]						
Water Budget – Average Year (in AF)						
Import	---	---	---	---	---	---
Groundwater	109,500	118,700	125,600	129,900	133,500	128,700
Recycle/Other[4]	0	7,000	30,400	57,700	78,500	113,900
Supply Total[5]	***109,500***	***125,800***	***156,100***	***187,700***	***212,000***	***242,700***
Demand Total	**109,500**	**125,800**	**156,100**	**187,700**	**212,000**	**242,700**
Net Supply	0	0	0	0	0	0
Water Budget – Single Dry Year (in AF)						
Import	---	---	---	---	---	---
Groundwater[6]	109,500	118,700	125,600	129,900	133,500	128,700
Recycle/Other[4,6]	0	7,000	30,400	57,700	78,500	113,900
Supply Total[5]	**---**	***125,800***	***156,100***	***187,700***	***212,000***	***242,700***
Demand Total	**---**	**125,800**	**156,100**	**187,700**	**212,000**	**242,700**
Net Supply	---	0	0	0	0	0
Water Budget – Multiple Dry Years (in AF)						
Import	---	---	---	---	---	---
Groundwater[6]	109,500	118,700	125,600	129,900	133,500	128,700
Recycle/Other[4,6]	0	7,000	30,400	57,700	78,500	113,900
Supply Total[5]	**---**	***125,800***	***156,100***	***187,700***	***212,000***	***242,700***
Demand Total	**---**	**125,800**	**156,100**	**187,700**	**212,000**	**242,700**
Net Supply	---	0	0	0	0	0
Base Adequacy	**---**	***yes***	***yes***	***yes***	***yes***	***yes***

Footnotes:
1. All data from UWMP, unless noted otherwise. All data rounded to nearest hundred.
2. Population per CVWD 2010 UWMP, Table 2-4.
3. Water years used (for average, dry and multi-year dry benchmarks): 2004-2009, 1977 and 1990-1992.
4. Treated and untreated Colorado River water and (for 2035) 10,000 AF of desalinated agricultural drain water.
5. Potable water only. CVWD also supplies non-potable water for use and for groundwater recharge.
6. Due to its 3a priority, CVWD reports that its Colorado River supplies would generally be unaffected by drought. Similarly, it states the "vast storage capacity of the Whitewater River subbasin (about 28.8 million AF) would be more than adequate to meet the projected groundwater extraction needs of CVWD, DWA and the private pumpers" (even if MWD depletes the Advance Delivery Storage account water). CVWD 2010 UWMP, page 5-8.

Source: Coachella Valley Water District. Urban Water Management Plan, Tables 3-8 through 3-12, 3-19 and 4-1, 2010.

(2) Imported Water

In the west valley, resort and urban development typically rely solely on groundwater. Recognizing the need for additional water supplies, DWA and CVWD entered separate agreements for SWP water in the 1960s. To avoid the $150 million cost to construct a pipeline, CVWD and DWA instead signed a water exchange agreement with MWD to deliver an equivalent amount of Colorado River water from MWD's aqueduct in exchange for CVWD's and DWA's SWP water. Groundwater recharge began in 1973 and nearby groundwater levels began to improve, but a steady decline continued in central portions of the valley. CVWD and DWA signed an agreement with MWD for MWD to store excess Colorado River water in the West Valley basin, but even with this additional water, groundwater levels in the west valley continued to decline. With these challenges in mind, the 2010 Coachella Valley MWP sets objectives for meeting all current and future water demands with a 10% supply

buffer, eliminating long-term groundwater overdraft and managing water quality, while managing costs and minimizing adverse environmental impacts.

Also relative to CVWD water supplies, the Quantification Settlement Agreement (QSA) was signed in 2003 and provided assurances regarding existing water sources and additional supplies for CVWD. For additional information and analyses regarding the factors affecting the QSA, please refer to the discussion above regarding MWD's Colorado River supplies in Section 4.19.3. In addition, CVWD and DWA purchase additional SWP water and municipal wastewater treatment plant recycling now contributes approximately 14,000 AFY. Several source substitutions have been successful, with canal or recycled water being used for golf courses in lieu of groundwater pumping and agreements with several developers for use of non-potable water systems for landscape irrigation. Groundwater recharge efforts also continued.

Colorado River Supplies: Colorado River water has been a major source of supply for the Coachella Valley since 1949 with the completion of the Coachella Canal. As discussed in detail above, the Colorado River is managed and operated in accordance with the Law of the River, under which California's apportionment of Colorado River water in a normal year is 4.4 million AFY, which is allocated between Palo Verde Irrigation District (PVID), Imperial Irrigation District (IID), CVWD and MWD, with CVWD and IID in the third priority position. CVWD receives its Colorado River water from the 122-mile Coachella Canal, a branch of the All-American Canal that brings Colorado River water into the Imperial and Coachella Valleys and terminates in CVWD's Lake Cahuilla. See Figure 4.19.26. The service area for Colorado River water delivery under CVWD's contract with the U.S. Reclamation Bureau is defined as Improvement District No. 1, which encompasses most of the east valley and a portion of the west valley north of Interstate 10.

As of 2010, CVWD receives 368,000 AFY of Colorado River water deliveries under the QSA. CVWD's allocation will increase to 459,000 AFY by 2026 and remain at that level for the 75-year term of the QSA. After deducting conveyance and distribution losses, approximately 428,000 AFY will be available for CVWD use. The Colorado River's supply and water quality problems, as well as the ongoing QSA litigation, are discussed in Section 4.19.3.

SWP Supplies: CVWD and DWA also have contractual access to SWP Table A water, as shown in Table 4.19-AS (also see Table 4.19-H). However, there are no physical facilities to deliver SWP water to the Coachella Valley. Thus, CVWD's and DWA's Table A water is exchanged with MWD for a like amount of Colorado River water from MWD's Colorado River Aqueduct. SWP Exchange water has been used to recharge the Whitewater River Subbasin at the Whitewater River Recharge Facility since 1973. MWD, DWA and CVWD executed an advanced delivery agreement in 1985 that allowed MWD to pre-deliver up to 600,000 AF of SWP water into the Coachella Valley. MWD then has the option to deliver CVWD's and DWA's SWP allocation either from the CRA or from water previously stored in the basin. This agreement was subsequently amended to increase the pre-delivery amount to a maximum of 800,000 AF. The 2002 WMP established a goal of maintaining an average amount of SWP exchange water recharge at 140,000 AFY in the Whitewater River Subbasin.

MWD historically has not made full use of its SWP Table A amounts in normal and wet years. Under the 2003 Exchange Agreement, CVWD and DWA acquired 100,000 AFY of MWD's SWP Table A water as a permanent transfer. The water would be exchanged for Colorado River water and either recharged at the existing Whitewater Spreading Facility or delivered via the Coachella Canal for golf course irrigation purposes in the Palm Desert-Rancho Mirage area of the west valley. The transferred water may also be delivered from MWD's Advance Storage account. The terms of the agreement provide that CVWD receives 88,100 AFY and DWA receives 11,900 AFY of MWD's SWP Table A water. CVWD and DWA assume all capital costs associated with capacity in the California Aqueduct to transport this water and variable costs to deliver the water to Lake Perris. MWD retains other rights associated with the transferred water including interruptible water service, carryover

storage in San Luis Reservoir and flexible storage at Castaic and Perris Reservoirs. Amendments to CVWD's and DWA's SWP contracts were executed in 2003. MWD has the option to call back the water in certain years according to specified terms.

In 2004, CVWD purchased an additional 9,900 AFY of SWP Table A water from the Tulare Lake Basin Water Storage District (Tulare Lake Basin) in Kings County. In 2007, CVWD and DWA made a second purchase of Table A SWP water from Tulare Lake Basin totaling 7,000 AFY (DWR, 2007a and 2007b). Also in 2007, CVWD and DWA completed the transfer of 16,000 AFY of Table A water from the Berrenda Mesa Water District in Kern County. These latter two transfers became effective in January 2010. With these additional transfers, the total SWP Table A amount for CVWD and DWA is 194,100 AFY, with CVWD's portion equal to 138,350 AFY.

As further described in the sections above, DWR issues its SWP Delivery Reliability Report every two years. The 2009 Report expressly accounts for impacts to water delivery reliability associated with climate change and recent environmental, legal and regulatory restrictions related to endangered species in the Delta. Based on information from DWR's 2009 Report, the average long-term reliability of SWP Table A deliveries is projected to be 60% of Table A allotments. This allocation percentage is based on computer modeling of the state's watersheds, an expected range of Delta export controls to protect threatened and endangered species, the current condition of the river and reservoir systems, and a variety of potential climate change scenarios. The published reliability of the SWP water has decreased over time, for the reasons discussed above. To account for additional variability related to future SWP supplies, the 2010 UWMP takes the extraordinarily conservative step of further reducing the projected long-term reliability of SWP supplies to 50% of Table A allotments in the absence of successful completion of the Bay-Delta Conservation Plan (BDCP) and delta conveyance facilities.

As per above, CVWD and DWA SWP Table A amounts are used to replenish the Upper Whitewater River and Mission Creek subbasins. Water for recharge is allocated to each in proportion to their levels of pumping. CVWD and DWA both have made significant progress toward meeting the 2002 WMP goal of 140,000 AFY average SWP delivery for the Whitewater River Subbasin.

Table 4.19-AT: State Water Project Supplies to Desert Region

Agency	Original SWP Table A	Tulare Lake Basin Transfer #1	Tulare Lake Basin Transfer #2	MWD Transfer	Berrenda Mesa Transfer	Totals*
CVWD	23,100	9,900	5,250	88,100	12,000	138,350
DWA	38,100	----	1,750	11,900	4,000	55,750
Totals	***61,200***	***9,900***	***7,000***	***100,000***	***16,000***	***194,100***

*All values expressed in AFY. 'SWP' denotes State Water Project.
Source: CVWD, Coachella Valley Water Management Plan, Table 4-3, 2010.

(3) Surface Water

Surface water supplies come from several local rivers and streams including the Whitewater River, Snow Creek, Falls Creek and Chino Creek, as well as a number of smaller creeks and washes. Some of this water is diverted for direct delivery to customers while the remainder becomes part of the groundwater supply through percolation of runoff. In 2009, surface water supplied less than 1% of total water supply to the west valley to meet urban and golf course demands and none to the east valley.

Because surface water supplies are affected by variations in annual precipitation, the annual supply is highly variable. Since 1936, the historical surface water deliveries have ranged from approximately 1,400 to 9,000 AFY, averaging about 5,800 AFY. The majority of local surface water is derived from runoff from the San Bernardino and San Jacinto Mountains with lesser amounts from the Santa Rosa Mountains. This runoff either percolates in the streambeds or is captured in mountain-front debris basins where it recharges the groundwater basin.

According to the estimates developed for the 2010 UWMP Update, since 1993, an average of approximately 60,000 AFY of surface water recharged the Whitewater River Subbasin.

(4) Recycled Water

Recycled water is a significant potential local resource that can be used to help reduce overdraft. Wastewater that has been highly treated and disinfected can be reused for landscape irrigation and other purposes; however, treated wastewater is not suitable for direct potable use. Recycled wastewater has historically been used for irrigation of golf courses and municipal landscaping in the Coachella Valley. In addition, fish farm effluent is available in localized areas of the east valley and a portion is recycled. Based on data from CVWD and DWA, recycled water usage in the west valley is approximately 12,400 AFY (8,200 AFY CVWD usage, 4,200 AFY DWA usage). Recycled water usage in the east valley is approximately 700 AFY and is mainly for agricultural irrigation.

CVWD operates six water reclamation plants (WRPs), three of which generate recycled water for irrigation of golf courses and large landscaped areas. WRP-4 became operational in 1986 and serves communities from La Quinta to Mecca. WRP-4 effluent is not currently recycled; however, it will be recycled in the future when the demand for recycled water develops and tertiary treatment is constructed. The City of Palm Springs operates the Palm Springs Wastewater Treatment Plant. DWA provides tertiary treatment to effluent from this plant and delivers recycled water to golf courses and parks in the Palm Springs area. There is also potential for obtaining recycled water from the reclamation plants operated by the City of Coachella and Valley Sanitary District (VSD), but water from these sources is not currently recycled.

CVWD has also worked with a local aquaculture firm to develop water efficiency programs that include water treatment and reuse. Historically, the amount of fish farm effluent recycled in the east valley was approximately 2,000 AFY. However, one of the largest fish farms in the east valley recently terminated operations and is now using their ponds to grow algae that will be used for the production of biofuel. This shift in operations has significantly reduced groundwater pumping as well as essentially eliminated a source of reusable aquaculture effluent. Water users that have used this recycled water will need to convert to Canal water as a supply. Several areas have been approved for Canal water service pending design and construction of facilities. The 2010 UWMP assumes that no aquaculture water is available for future reuse.

(5) Other Supplies

CVWD along with other valley agencies have investigated other water transfer opportunities described below. Since these water transfers are highly variable, they are not accounted for as firm existing supply capacity available to CVWD.

Yuba River Accord Dry-Year Water Purchase Program: In March 2008, CVWD and DWA entered into separate agreements with the DWR for the purchase and conveyance of supplemental SWP water under the Yuba River Accord Dry-Year Water Purchase Program. This program provides dry year supplies through a water purchase agreement between DWR and Yuba County Water Agency (YCWA) as part of the Lower Yuba River Accord (Yuba Accord), which settled long-standing operational and environmental issues over instream flow requirements for the lower Yuba River. Yuba Accord water transfers will include both surface water and groundwater substitution transfers for an estimated total of up to 140,000 AFY. The available water is allocated among participating SWP contractors based on their Table A allotments. It is estimated that CVWD and DWA may be able to purchase up to 4% (5,600 AFY) and 1.3% (1,800 AFY), respectively for a total of 7,400 AFY. The amount of water available for purchase in a given year varies and will be based on DWR's water year classification. These agreements provide for the exchange of these supplies with MWD for Colorado River water

in accordance with existing exchange agreements. CVWD and DWA obtained 1,800 AF in 2008 and 3,500 AF in 2009 from this program.

Rosedale-Rio Bravo Transfer: In 2008, CVWD executed an agreement with Rosedale-Rio Bravo Water Storage District (Rosedale) in Kern County for a one-time transfer of 10,000 AF of banked Kern River flood water that is exportable to CVWD. Per the Rosedale agreement, deliveries to CVWD began in 2008 and were completed by December 31, 2010. Similar transfers could be executed in future years based on water availability.

c. CVWD Supply Projections

Table 4.19-AU (CVWD Current and Projected Water Supplies), below, presents CVWD's projected direct water supply up to 2035 for urban water use. The CVWD assumes for the purposes of these projections, that total water supplies are equal to total urban water demand. Since groundwater is the principal source of water supplies and the groundwater basin is not adjudicated, actual water supply of the basin is dependent on replenishment and production by other water users of the groundwater basin. With the ongoing implementation of the Coachella Valley WMP, it is assumed that CVWD will either reduce or maintain its current groundwater pumping and meet the rest of its demand with Colorado River water. This urban water supply from the Colorado River will gradually increase with time as the required infrastructure is installed and will offset groundwater pumping to meet the urban water demand.

Table 4.19-AU: CVWD Current and Projected Water Supplies

Water Supply Sources (in AFY)	2010	2015	2020	2025	2030	2035
Supplier-Produced Groundwater	109,488	118,700	125,600	129,900	133,500	128,700
Treated Colorado River Water	0	5,700	19,300	31,400	39,500	49,100
Untreated Colorado River Water	0	1,300	11,100	26,300	39,000	54,800
Desalinated Agricultural Drain Water	0	0	0	0	0	10,000
Totals	**109,488**	**125,800**	**156,100**	**187,700**	**212,000**	**242,700**

Source: CVWD, UWMP, Table 4-1, page 4-4, 2010.

d. CVWD Water Supply Issues

The existing water supplies face risks and variability that could affect long-term supply reliability. These include the extended drought in the southwestern United States and legal/regulatory decisions affecting vital contracts and water deliveries. In addition, climate change could impact both supplies and demands in the valley.

Colorado River: Although CVWD's Colorado River supply has historically been fully available, drought conditions affecting the Colorado River and legal issues affecting the QSA may continue to affect the availability and reliability of this supply in the future. Other issues affecting the reliability of Colorado River water supplies are discussed above (see Section 4.19.3).

State Water Project: Many of the issues affecting the availability and reliability of SWP supplies are discussed above (see Section 4.19.3) and in Appendix EIR-8. CVWD and DWA have contractual rights to SWP water, which are exchanged with MWD for an equivalent amount of Colorado River water. While CVWD and DWA do not take any actual delivery of SWP water because of the lack of conveyance facilities, the exchange water amounts will decrease with any decrease in the amount of SWP water in which those agencies have contractual rights. However, current assumptions are that, if successful, these programs could restore average long-term SWP delivery reliability to the pre-Wanger decision levels of 77% of Table A amounts. This assumption is consistent with planning assumptions being made by MWD in its 2010 RUWMP that is discussed in detail above.

Accordingly, the 2010 UWMP evaluates both the conservatively low (50%) and high (77%) reliability in determining future water needs for the valley.

Recycled Water: Recycled wastewater has historically been used for irrigation of golf courses and urban landscaping in the Coachella Valley. The amount of wastewater available for recycling in the future primarily depends on growth in the valley. Future waste discharge requirements will dictate the level of treatment that would be required at the valley's wastewater treatment plants. More stringent discharge requirements might result in higher treatment costs, which in turn might make recycling a more feasible option. Thus, future growth and water quality regulations will dictate the amount of recycled water available in the Coachella Valley.

Water Quality: The Water Quality Control Plan for the Colorado River Basin (Region 7) (Basin Plan) was prepared and adopted by the Colorado River Regional Water Quality Control Board (RWQB) in 1993. The planning area includes the Coachella Valley. The Basin Plan was updated with subsequent amendments and was readopted by the RWQCB in June 2006. The Coachella Valley water agencies will keep tracking proposed changes to the Basin Plan and will actively participate in development of new policies. Additional monitoring, increased treatment and implementation of best management practices (BMPs) can also help limit discharges to the CVSC and Salton Sea which could otherwise conflict with the Basin Plan.

Salinity management is an important water quality issue in the Coachella Valley. Use of imported water for recharge, agricultural irrigation and municipal irrigation directly results in the addition of salt into the basin. Some areas in the valley, such as the Oasis and Salton City, have naturally occurring high-salinity groundwater. If the activities in the basin are not managed properly, the salt could eventually migrate to the Lower aquifer and result in long-term water quality degradation in the groundwater basin. Colorado River water used for delivery and recharge in the Coachella Valley has higher TDS concentrations on average than most local groundwater. CVWD is investigating alternatives to reduce water quality impacts of Colorado River recharge, including direct importation and recharge of lower TDS System Conservation Plan water through construction of an $800 million to $1.5 billion SWP extension. However, this would significantly increase the cost of providing water to Coachella Valley customers and would provide water only for recharge to the west valley. Another alternative is treatment of Colorado River water before recharge. The primary deterrent to this is against cost, because it could increase the annual water bill for an average customer by $450, with an even greater impact on major water users such as golf courses. CVWD will continue to work with other water purveyors to develop a plan for addressing this issue.

Recycled municipal wastewater is being used for irrigation for golf courses, other municipal greenbelts and landscaped areas. Because the amount of municipal wastewater available for reuse is expected to increase 150% by 2045, this water represents a valuable resource that needs to be put to beneficial use to reduce groundwater overdraft. Valley-wide recycled water projects identified in the 2010 WMP Update will be implemented.

Pursuant to SWRCB requirements, a salt/nutrient plan must be developed by 2014, which is intended for management of all sources contributing salt/nutrients on a basin-wide or watershed-wide basis to ensure that water quality objectives are achieved, taking into consideration all sources, hydrogeology, recharge, water quality and other factors. Brine discharge and management will also be a major issue in the Coachella Valley in the future and a detailed study should be conducted to evaluate brine disposal alternatives. CVWD will undertake a detailed study investing alternatives for brine disposal.

Discharges from agricultural lands can affect water quality by transporting pollutants from fields to surface waters. The State and Regional Water Quality Control Boards can conditionally waive waste discharge requirements if it is in the best interest of the public and such waivers are generally given on the condition that the discharges not cause violations of water quality objectives. CVWD's existing waivers for these discharges

have expired; the RWQCB must develop a water quality control policy to address potential or actual impacts of these discharges on the waters of the region

In addition to salinity concerns, current and emerging groundwater quality issues include arsenic, perchlorate, chromimum-6, uranium and nitrates. As of 2006, the standard for maximum arsenic levels is 10 μg/L and arsenic concentrations as high as 162 μg/L have been observed in some east valley municipal water wells and other wells exceeded the standard. Three new groundwater treatment facilities became operational in 2006 and can be expanded to treat additional wells if necessary.

Perchlorate has been found in Colorado River water imported to the Coachella Valley. It originated from the Kerr-McGee plant in Nevada, on Las Vegas Wash upstream of Lake Mead. Use of Colorado River water for irrigation and recharge in the east valley led to perchlorate contamination of the groundwater there. Perchlorate seep capture and treatment was initiated in 1999 and three locations in Nevada, which has resulted in significant reduction in Colorado River contamination. Tests on CVWD groundwater wells in 2000 and 2009 showed no detectable perchlorate and DWA detected only levels of perchlorate below the maximum contaminant limit (MCL). Monitoring will continue. No wells in the Coachella Valley exceed the 50 μg/L total chromium MCL. Monitoring will continue. While trace uranium levels have been observed in groundwater in the Cove communities and Indio Hills system, they were well below the California MCL. Monitoring will continue.

The primary drinking water standard for nitrates is 10 mg/L and concentrations as high as 40 mg/L have been found in some of the shallower portions of the Coachella Valley groundwater basin. Steps have been identified to reduce the risk of nitrate migration, including locating recharge activities away from areas of high nitrate concentrations and treatment of pumped groundwater.

Invasive Species: The non-mollusk known as the Quagga mussel has been found in the Colorado River system, which could significantly affect Coachella Valley's water quality, aquatic ecosystems and water delivery systems. Quagga mussels were first discovered in Lake Mead in January 2007 and have infested the CRA by way of Lake Havasu. They have been found at Imperial Dam, but have not been detected in the Coachella Canal. CVWD has been proactively working to prevent infestation and spread by chlorinating Coachella Canal water downstream of the turnout from the All-American Canal and turbulence is generated by keeping the gate partially closed.

Subsidence: Declining groundwater levels can contribute to or induce land subsidence in aquifer systems that contain a significant fraction of silts and clays. Land subsidence can disrupt surface drainage, cause earth fissures and damage wells, buildings, roads and utility infrastructure. Since the late 1970s, demand for water in the east valley has exceeded the deliveries of imported surface water, pumping increase and groundwater levels declined. At least four areas in the Coachella Valley have experienced land subsidence between 2003 and 2005, and subsidence rates increased by as much as a factor of 10 between 2000 and 2005. However, studies of these sites have not confirmed a relationship between the land subsidence and declining groundwater levels, and the 2002 Coachella Valley Water Management Plan Programmatic EIR incorporated mitigation measures addressing potential land subsidence caused by declining water levels. Valleywide subsidence studies are continuing.

Salton Sea Restoration: The Salton Sea is a saline terminal lake located at the east end of the Coachella Valley. It is California's largest lake and a main stop on the Pacific Flyway for migratory birds. Approximately 90% of the freshwater inflow into the Sea is agricultural drain water from the Imperial, Coachella and Mexicali valleys. Because the Sea has no outlet, salts concentrate in it by evaporation. Salt concentrations in the Sea are currently about 51,000 mg/L, about 45% higher than ocean water, with the salinity increasing another 1% per year. The 2010 UWMP currently plans for existing drain flows into the Salton Sea to remain at current levels. However, in order to meet the 2045 demand conditions in the Coachella Valley, up to 112,000 AFY of drain flow into the

Salton Sea will be captured and desalinated for urban use. This may result in a substantial reduction of projected flow to the Salton Sea from the Coachella Valley compared to previous estimates.

e. CVWD Water Demand Projections

CVWD's UWMP provides a number of tables for past, current and projected urban water usage projections. The District's two biggest water use sectors are single-family homes and landscaping. And, for such residential uses, it is estimated that 80% of a single-family home's water usage is for outdoor landscaping. Accordingly, CVWD has focused its conservation efforts to reduce landscape water usage. Table 4.19-AV (CVWD Total Urban Water Deliveries by Customer Type), below, shows existing and projected urban water use by sector.

Projected water use for 2015 through 2035 in five-year increments is shown in Table 4.19-AW (CVWD Total Projected Potable and Non-Potable Urban Water Use) below. According to the UWMP, these demand projections are based on projected population and per-capita water use. As mentioned earlier, the population projections are based on Riverside County's RCP-06 forecasts. For the projected per-capita water use shown, the baseline population is the current existing service area population. It is then assumed that this population will have a 20% reduction in per-capita water use due to tiered water rates and landscaping conservation (pursuant to SB7x7 mandates, etc.). The added population is composed of future new CVWD customers. These new customers are calculated to have a greater reduction in outdoor per-capita water use due to CVWD's landscape ordinance and other conservation efforts. Based on the currently available development and land use information for Coachella Valley, it is assumed that the proportions of water use by sector in the future will be equal to the sector proportions of 2010 water use.

Table 4.19-AV: CVWD Total Urban Water Deliveries by Customer Type

Year	Units[1]	Single family Resi.	Multi-family Resi.	Commercial	Industrial	Instit./ Gov.	Landscape	Agri.[2]	Construct.	Totals
2010[3]	# of Accts.	92,863	3,610	3,821	0	377	5,142	0	188	106,018
	Volume	59,902	8,629	4,841	0	1,023	28,994	0	920	104,309
2015	# of Accts.	110,400	4,500	4,400	0	430	6,100	0	240	126,100
	Volume	69,900	10,100	5,600	0	1,200	33,800	0	1,100	121,700
2020	# of Accts.	138,900	6,000	5,400	0	530	7,600	0	290	158,700
	Volume	86,700	12,500	7,000	0	1,500	42,000	0	1,300	151,000
2025	# of Accts.	169,400	7,500	6,400	0	630	9,100	0	340	193,400
	Volume	104,300	15,000	8,400	0	1,800	50,500	0	1,600	181,600
2030	# of Accts.	194,900	8,500	7,400	0	730	10,600	0	7,400	229,500
	Volume	117,800	17,000	9,500	0	2,000	57,000	0	1,800	205,100
2035	# of Accts.	223,900	10,000	8,400	0	830	12,100	0	440	255,700
	Volume	134,800	19,400	10,900	0	2,300	65,300	0	2,100	234,800

Footnotes:
1. Includes both metered and unmetered sources, but excludes system water losses. 'Volume' in acre-feet (AF).
2. CVWD serves agricultural farms, golf courses and other uses with Colorado River water via a non-potable distribution system. The volume of agricultural water use is described in Table 3-18 of the UWMP.
3. Values for 2010 are actual. Values for rest of the years are projected estimates.

Source: CVWD, UWMP, Tables 3-8 through 2-12, 2010.

f. CVWD Coachella Valley Water Management Plan Implementation

Implementation flexibility is critical to respond to variable and unpredictable future growth as well as water supply conditions. The 2010 CVWMP Update (CVWMP) identifies water conservation and water supply elements sufficient to meet not only the projected water demands, but to provide a level of contingency should individual water conservation and supply projects not be implemented as currently envisioned or if growth is higher than

anticipated. If these objectives are not met, then additional measures must be implemented. For example, the amount of future water conservation, water transfers and drain water desalination can be adjusted in response to the outcome of long-term solutions in the Delta. Once water conservation and supplies are defined, water management strategies can be developed to reduce and ultimately eliminate groundwater overdraft. The two primary measures for doing this are source substitution and groundwater recharge. Again, a flexible approach is taken where targets for both source substitution and recharge are established.

Table 4.19-AW: CVWD Total Projected Potable and Non-Potable Urban Water Use

Water Use (in AFY)	2010	2015	2020	2025	2030	2035
Total Urban Consumptive Water Uses[1]						
Single-family Residential	59,900	69,900	86,700	104,300	117,800	134,800
Multi-family Residential	8,600	10,100	12,500	15,000	17,000	19,400
Commercial	4,800	5,600	7,000	8,400	9,500	10,900
Institutional/Government[2]	1,000	1,200	1,500	1,800	2,000	2,300
Landscape[3]	29,000	33,800	42,000	50,500	57,000	65,300
Construction	900	1,100	1,300	1,600	1,800	2,100
Subtotal	**104,300**	**121,700**	**151,000**	**181,600**	**205,100**	**234,800**
Groundwater Recharge with Non-Potable Water						
Whitewater Spreading Facility[4]	87,400	72,300	88,800	78,000	78,700	82,000
Levy Spreading Facility	32,500	40,000	40,000	40,000	40,000	40,000
Martinez Cyn. Spreading Fac.	4,000	4,000	4,000	20,000	20,000	20,000
Indio[5]	0	5,000	5,000	10,000	10,000	10,000
Mission Creek Spreading Fac.[6]	8,200	9,900	10,700	10,700	10,700	11,100
Subtotal	**132,100**	**131,200**	**148,500**	**158,700**	**159,400**	**163,100**
Non-Potable Water Use						
Agriculture	313,400	279,700	242,700	222,300	204,700	184,000
Golf Course and Municipal[7]	33,700	59,300	76,700	91,900	94,700	99,600
Subtotal	**347,100**	**339,000**	**319,400**	**314,200**	**299,400**	**283,600**
Urban System Water Losses[8]						
Subtotal	**5,200**	**4,100**	**5,100**	**6,100**	**6,900**	**7,900**
Grand Totals	**588,688**	**596,000**	**624,000**	**660,600**	**670,800**	**689,400**

Footnotes:
1. Consumptive water uses exclude system water losses.
2. Industrial water delivery is zero (per CVWD, 2010 UWMP, Tables 3-9 through 3-12) and therefore omitted.
3. CVWD serves agricultural uses with non-potable water from the Colorado River. Thus, it is included under 'Non-potable Water Use,' rather than in this category.
4. Values for 2010 based on anticipated operations. Actual values may be higher based on imported water availability. Values for 2015 through 2035 represent average annual values based on anticipated water availability.
5. Values are estimated. Site of the recharge facility in Indio is still under investigation.
6. Water recharged at Whitewater and Mission Creek facilities is the joint responsibilities of CVWD and DWA. Amounts will vary based on hydrologic conditions and amount of groundwater pumping conducted.
7. Golf course and municipal non-potable demand is use of recycled water and Canal water.
8. Future system water loss is assumed to be 3.2% of total water production, which is the average system water loss percentage from the past five years (i.e., 2006-2010).

Source: CVWD, UWMP, Tables 3-9 through 3-12 and Tables 3-17 through 3-20, pages 3-7 through 3-15, 2010.

However, these targets are flexible to allow adjustments in response to changes in development patterns affecting sources substitution and basin groundwater levels. Source substitution programs initially focus on supplying imported and recycled water to existing groundwater users. As growth occurs, these systems can be used to meet the needs of future development without increasing groundwater use. Recharge projects provide flexibility by allowing variable amounts of recharge in the future to either restore storage losses during dry periods and to prevent excessively groundwater levels.

The elements of the CVWMP implementation plan are being carried out by CVWD in conjunction with the region's Indian Tribes and other valley water districts. (See Appendix EIR-8 for copy of the CVWMP implementation plan, i.e., Table 8-1 of that document.) The plan calls for completion of key measures between

2010 and 2020. The central themes of these elements are balance and flexibility, with the minimization of costs as feasible. Currently, due to groundwater overdraft and full use of existing developed supplies, there is no supply buffer. Development of the additional supplies to provide a buffer may also provide an opportunity to reduce overdraft earlier and store water in the basin for future use. Under the implementation plan, a supply buffer will be achieved by establishing increased planning targets for urban water conservation, desalinated drain water, recycled water and water transfers and taking the actions to implement these higher targets, if and when needed. Pursuant to the plan, in 2011 the supply buffer should be about 68,000 AFY and should gradually increase with demand until a buffer of around 89,000 AFY is achieved by 2045.

Based on the water conservation measures described in the programs below, the range of potential savings to be achieved will be 43,000-100,000 AFY for urban water uses, 11,000-23,000 AFY for agricultural water use and 6,000-22,000 AFY for golf courses. This translates into a total savings of between 60,000-145,000 AF per year.

(1) Urban Conservation

Although CVWD could likely meet the requirements of SBX7-7 without implementing additional conservation measures, water savings in excess of SBX7-7 requirements are likely due to the significant emphasis placed on reduced water use by existing and future customers. Based on the potential range of domestic water conservation actions identified in the 2010 UWMP, additional urban water conservation savings could potentially range from 43,000 AFY to 266,000 AFY by 2045. Extreme changes in lifestyle would be required to reduce water use to an amount comparable to Tucson (50% reduction) or the Colorado River region's target in the 20x2020 Plan (41% reduction).

Methods available for achieving these targets (i.e., Level 3 option) include the following: Continued implementation of the 2009 Valleywide Landscape Ordinance (Ordinance No. 1302-2); installation of automated or 'smart' water meters; extension of the landscape ordinance to include all landscaping regardless of size (current limit is 5,000 square-feet or larger for homeowner furnished landscaping); implementation of water budget-based tiered water rates or other conservation based rates by other water agencies; further decreases in the water allocations for landscape irrigation consistent with good irrigation practices and desert landscaping; the offering of landscape retrofit rebates, i.e., economic incentives for replacing high water use landscaping with water-efficient vegetation, also known as "cash for grass;" placing of restrictions on the total amount of turf allowed; mandating use of smart irrigation controllers by all customers; performing audits of new development to assure continued compliance with the landscape ordinance; requiring plumbing retrofits for existing properties, including mandatory retrofit (ultra-low flush toilets, showerhead replacement, etc.) prior to sale of property; offering conservation rebates for high-efficiency clothes washers; complying with 2009 California Green Building Code standards (CCR, Title 24, Part 11); and, performing water distribution system audits and implementing loss reduction programs.

(2) Agricultural Conservation

Agricultural conservation programs have consisted of CVWD funding and voluntary grower participation. Through the "Extraordinary Conservation Program," the CVWD was able to completely payback its water overrun (73,200 AF) by 2009. A cooperative study, "Water 2025," was funded by Reclamation, CVWD and participating growers and suppliers within the Coachella Valley. The objectives of the study were to provide clear quantification of reductions in applied water resulting from specific farm practices and to develop a market mechanism for saved water. The following provides the building blocks for agricultural conservation.

Grower Education and Training: This would consist of grower meetings and grower training programs funded by the District. In order to encourage grower participation, the District would implement confidential grower audits.

District-Provided Services: This would include CVWD-funded conservation programs provided as a service to growers in the district. Programs would include scientific irrigation scheduling, scientific salinity management, moisture monitoring and farm distributions uniformity evaluations. From 2004 through 2009, 73,400 AF of documented extraordinary conservation occurred using these programs for a total program cost of $2,954,000. Additional expenditures of $200,000 in 2009-2010 resulted in savings of 3,400 AFY.

Irrigation Upgrade/Retrofit: This would add full funding, partial funding or financial support to growers that wish to convert from flood and sprinkler to micro-sprinkler and drip systems. In a fully funded program, the CVWD would provide reasonable reimbursement to a grower that upgrades his or her irrigation system or retrofits an aging drip system. A partially funded program would cost-share the expenses and a program that offers financial support would provide low or no-interest loans for the upgrades or retrofits.

Economic Incentives: This would involve adoption of one or more pricing approaches to encourage conservation, if needed. This might be accomplished by establishing an irrigation water allocation based on evapotranspiration (the rate water is lost from plants and the soil into the air) and a crop-specific coefficient. Water use in excess of the base allocation would be charged at a higher rate.

Regulatory Programs: These types of programs would be considered as a last resort and would include regulations that support and provide for agricultural conservation. Programs could include: grower-prepared on-farm water management plans defining the methods of applying water and the water conservation measures utilized; and, all new permanent crops would use drip and/or micro-spray irrigation systems. All current crops must be converted within a five-year period.

Evaluation of grower practices and crop requirements indicates that a savings of up to 14% of current water use could be achieved through incremental implementation of these measures. Assuming no change in cropping patterns and average evapotranspiration conditions, agricultural water use is expected to decrease from 6.2 AFY per acre to about 5.33 AFY per acre. As agricultural land is removed from production in response to urban development, it is expected that the amount of water saved through agricultural conservation will decrease from almost 39,500 AFY in 2020 to 23,000 AFY in 2045. In general, CVWD program experience indicates the cost of agricultural conservation is in the range of $30 to $60/AF of water conserved, making it a very cost-effective method for extending the water supply.

(3) Golf Course Conservation

The CVWD Landscape Ordinance established maximum allowable turf area and associated water demands for new golf courses by limiting turf to four acres per hole plus ten acres for associated practice areas (driving ranges and putting greens). Other landscaping must use low water-using plant materials. Based on a typical 18-hole course encompassing about 125 acres of landscaped area, the expected water use would be about 700 AFY, which is an additional 22% reduction compared with the 2002 WMP goal for new courses. CVWD continues to work with new and existing golf courses to reduce water demands through programs such irrigation system audits, soil moisture monitoring, plan checking, inspecting new golf courses for plan check compliance and monitoring maximum water allowance compliance. Implementation of conservation measures could reduce golf course demands by 11,600 AFY by 2045.

g. CVWD Sewer and Wastewater Treatment Services

CVWD operates six wastewater reclamation plants (WRPs), three of which (plants 7, 9 and 10) currently generate recycled water for irrigation of golf courses and large landscaped areas. WRP-4 serves communities from La Quinta to Mecca, although its effluent is not currently recycled. However, it will be recycled in the future when the demand for recycled water develops and tertiary treatment is constructed. The City of Palm Springs operates the Palm Springs Wastewater Treatment Plant. The DWA provides tertiary treatment to effluent from this plant and delivers recycled water to golf courses and parks in the Palm Springs area. There is also potential for obtaining recycled water from the reclamation plants operated by the City of Coachella and Valley Sanitary District, but water from these sources is not currently recycled. CVWD plans to expand the non-potable water delivery systems described below in the future. The existing wastewater treatment plants treat 35,900 AF annually and with expansions will have a projected treatment capability of just under 89,700 AFY.

Water Reclamation Plant 1 (WRP 1): WRP-1 serves the Bombay Beach community near the Salton Sea. It has a design capacity of 150,000 gallons per day and consists of two mechanically aerated concrete-lined oxidation basins, two unlined stabilization basins and six evaporation-infiltration basins. Currently all of the effluent from this facility is disposed by evaporation-infiltration. CVWD has no plans to recycle effluent from this facility because of the low flow and lack of potential uses near the plant.

Water Reclamation Plant 2 (WRP 2): WRP-2 serves housing in the North Shore community with two types of treatment facilities: an activated sludge treatment plant capable of providing secondary treatment of up to 180,000 gpd and an oxidation treatment basin with a design capacity of 33,000 gpd. The oxidation treatment basin is mechanically aerated and lined with a single synthetic liner. The activated sludge treatment plant is used only when the maximum daily flow exceeds 33,000 gpd, otherwise the oxidation basin is used for treatment. WRP-2 is currently discharging an average of 18,000 gpd of treated secondary effluent into four evaporation-infiltration basins for final disposal. CVWD has no plans to recycle effluent from this facility because of the low flow and lack of potential uses near the plant.

Water Reclamation Plant 4 (WRP 4): CVWD's WRP-4 is a 9.9-million gallons-per-day (mgd) capacity treatment facility located in Thermal. WRP-4 provides secondary treatment consisting of pre-aeration ponds, aeration lagoons, polishing ponds and disinfection. The treated effluent is discharged to the CVSC pursuant to a NPDES permit. Annual average flow to the facility is approximately 4.75 mgd (5,300 AFY). Effluent from WRP-4 is not currently suitable for water recycling due to the lack of tertiary treatment. However, CVWD plans to add tertiary treatment and reuse effluent from this plant in the future as development occurs.

Water Reclamation Plant 7 (WRP 7): Located in northern Indio, WRP-7 is a 5.0-mgd secondary treatment facility with a current tertiary treatment capacity of 2.5 mgd. The tertiary-treated wastewater is used for irrigation of golf courses in the Sun City area. The average annual flow in 2010 is estimated to be 3 mgd (3,300 AFY). The plant consists of aeration basins, circular clarifiers, polishing ponds and filtration. Recycled water not used for irrigation is percolated at onsite and offsite percolation ponds. A plant expansion is currently under design that will increase the plant capacity to 7.5 mgd.

Water Reclamation Plant 9 (WRP 9): Located in Palm Desert, WRP-9 treats approximately 0.33 mgd (370 AFY) of wastewater from the residential development surrounding the Palm Desert Country Club. Treatment units at the plant include: a grit chamber, aeration tanks, secondary clarifiers, chlorine contact chamber, aerobic digester and two infiltration basins. One basin is lined for storage of treated wastewater. Raw wastewater in excess of the design capacity is pumped to WRP-10 for treatment. Secondary effluent from WRP-9 is used to irrigate a portion of the Palm Desert Country Club golf course. During winter months when demand is low, effluent that cannot be recycled is diverted to the infiltration basins for disposal through ground infiltration.

Water Reclamation Plant 10 (WRP 10): WRP-10 is located in Palm Desert and consists of an activated sludge treatment plant, a tertiary wastewater treatment plant, a lined holding basin, six storage basins and 21 infiltration basins. The plant's combined secondary wastewater treatment design capacity 18 mgd. WRP-10 treats an annual average daily flow of 10.8 mgd from the activated sludge plant. Approximately 60% of this plant's effluent receives tertiary treatment for reuse and is delivered to customers through an existing recycled water distribution system. The remaining secondary effluent is piped to a holding basin or one of six storage basins and disposed of by distribution to the 21 infiltration basins. Most of the secondary effluent receives tertiary treatment and is used for irrigation of local golf courses. Since 2009, CVWD blends tertiary effluent with Coachella Canal water provided by the Mid-Valley Pipeline for distribution to golf courses.

h. CVWD Water Availability

The above elements of the 2010 UWMP Update and Implementation Plan avoid excessive reliance on any one supply source while meeting projected water demands in the CVWD service areas. The CVWD's 2010 UWMP Update demonstrates that the total projected water supplies available to CVWD will be sufficient to meet the total projected water demands of their customers during normal, single-dry and multiple dry-year periods, and that successful implementation of planning efforts will result in a 10% supply buffer by the year 2045.

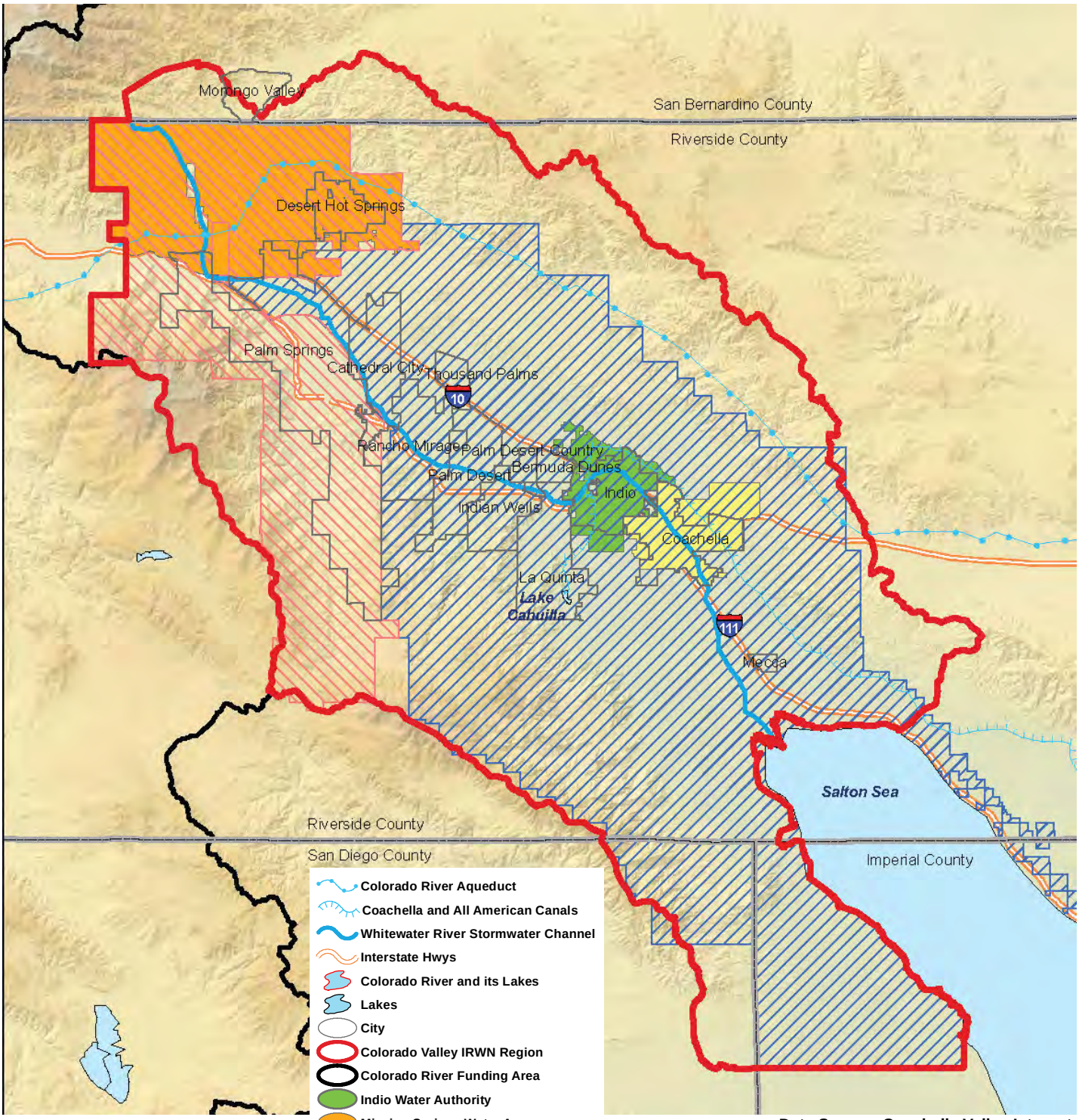
2. Desert Water Agency

Desert Water Agency (DWA), a State Water Contractor, is the water utility for the northwesterly portion of the Upper Coachella Valley. Originally, in the 1920s and 30s, DWA's municipal water supply came entirely from creek diversions. Today, DWA's water supply sources include groundwater produced by local potable water supply wells, surface water diverted from creeks in the San Jacinto Mountains, imported SWP water and recycled water (used for irrigation). All of the imported (SWP) water is used for recharge of the Upper Coachella Valley groundwater basin, particularly the Whitewater River and Mission Creek subbasins. DWA provides both wholesale water to the Missions Springs Water District (MSWD) and potable water to its own retail customers. DWA's 2010 Urban Water Management Plan (UWMP) addresses a variety of issues related to water supply, demand and reliability. Additional information about this water district is provided in Appendix EIR-8.

a. Notes on DWA

The DWA provides municipal (retail) water service to the City of Desert Hot Springs, part of Cathedral City and most of Palm Springs, as well as to outlying county unincorporated areas, for a total area of approximately 335 square miles. See Figure 4.19.27 (Water Agencies in the Coachella Valley). In addition to supplying municipal water, DWA also provides artificial groundwater recharge or replenishment to augment local groundwater supplies using imported water and also makes imported water available to MSWD for groundwater recharge within its service area. It also uses Colorado River water to replenish underground aquifers in cooperation with CVWD and gets additional (surface) water from mountain streams: Chino Creek, Snow Creek and Falls Creek.

Because of the region's low annual rainfall and extremely high summer temperatures, large quantities of water are required for supplemental landscape irrigation, even during the cooler winter months. As a result, DWA estimates up to 80% of water supplied to local customers is used outdoors. Thus, DWA has focused water conservation efforts on developing outdoor water conservation measures.



Data Source: Coachella Valley Integrated Water Management Plan (2009)

December 16, 2013

Figure 4.19.27

WATER AGENCIES IN THE COACHELLA VALLEY

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DWA's surface water diversions account for 10% of less of its total water supply. Surface waters utilized are from the Whitewater River, as well as several of its tributary creeks. Between 2005-2009, surface water diverted by DWA ranged from between 1,000 to 2,500 AFY. The DWA projects future surface water diversions between 2010-2035 will be 5,900 AFY.

Colorado River water is exchanged for SWP water per 2003 and prior Exchange Agreements among DWA, CVWD and MWD. According to DWA's UWMP (page II-2), currently approximately 93% of exchange water is directed to the Whitewater River Subbasin, of which 25% is allocable to DWA, with the remaining 75% to the CVWD. SWP water consists of DWA's apportionment of its Table A allocation, Article 21 surplus water allocation (when available) and other surplus water acquired and conveyed through the SWP. Other surplus water used for import includes Pools A and B Turnback water, Yuba River Accord water and Central Valley flood water from the Kern and other rivers. See Section 4.19.3 and Appendix EIR-8 for more information on these water sources.

Groundwater extracted by the DWA is the result of natural recharge, non-consumptive return and groundwater from storage. The DWA extracts groundwater for municipal use from the upper portion of the Whitewater River Subbasin, one of the Coachella Valley Groundwater Basin's five subbasins. The supply is supplemented with artificial recharge with imported SWP and Colorado River water according to a complex series of agreements amongst the basin's major users (see the prior section on CVWD for additional discussion).

Due to pumping to serve urban, rural and agricultural development, which has withdrawn water at a rate faster than its rate of discharge, the amount of water in the Whitewater River Subbasin has decreased over the years. The Whitewater River Subbasin is not, however, adjudicated. The DWA does not currently have a groundwater management plan per Assembly Bill 3030, but in 1976, the DWA and CVWD entered into a joint Water Management Agreement (as amended in 1992) for the cooperative management of the Whitewater River Subbasin. Under this agreement, the DWA and CVWD jointly operate groundwater replenishment programs wherein groundwater pumpers within designated areas of benefit pay a per-acre-foot charge that is used to pay the cost of importing water and recharging the aquifer. See Section 4.19.E-1 (CVWD discussion) for additional details on the Whitewater River Subbasin.

Table 4.19-AX: Desert Water Agency Background Information

Sub-Agencies Served[1]			**Cities and Communities Served[2]**		
Mission Springs Water District			City of Palm Springs		Cathedral City
Palo Verde Irrigation District			City of Desert Hot Springs		
Service Area Statistics[3]					
Size	214,400 acres		***CA Hydrologic Region***	Colorado River	
Population	60,600 people		***Regional WQCB***	7 – Colorado River	
Services Provided[3]					
Distribution	X	Wholesale Water	***Operations[4]***	X	Potable Water Treatment
	X	Retail Water		_	Desalination
	X	Recycled or Non-Pot. Water		X	Groundwater Recharge
	X	Wastewater (Collection)		X	Wastewater Treatment

Footnotes:
1. Unless noted otherwise, the District provides wholesale water to these sub-agencies.
2. City/community may be served by this district either wholly or partially. Areas in which only a small fragment are served by the water district or are outside of the district's formal service area may be omitted for clarity.
3. Services and service area statistics from Riverside LAFCO, 2005 Water and Wastewater Municipal Service Review.
4. Only facilities operated directly by the listed water agency included.

Source: DWA, UWMP, Dec. 2011. Riverside LAFCO, Water and Wastewater Municipal Service Review Report, 2005.

Except for DWA's surface water diversions, all water produced within the Whitewater River Subbasin is groundwater. Per page II-4 of their UWMP, extracted groundwater provided between 81-95% of the water served

by DWA. Between 2010 and 2035, this trend is projected to continue with groundwater providing between 78-81% of the total water supplies provided by DWA.

Based on the above information, the various contracts and agreements in place and other factors presented in its UWMP (page II-7), the DWA finds that, "The Whitewater River and Mission Creek subbasins are capable of meeting the demands that will be placed on them, provided they continue to be replenished with sufficient quantities of imported water to meet future needs."

Table 4.19-AY: DWA Water and Wastewater Service Data

WATER SERVICE DATA

Water Supply (AF)		Water Connections		Water Service Capacity	
Wholesale	0	Domestic	16,800	Total Capacity (AF)	85,100
State W Project	50,000	Irrigation	0	Total Demand (AF)	42,300
Surface	2,000	M&I	2,600	Peak Capacity (mgd)	59.63
Wells	40,000	Reclaimed	11	Peak Demand (mgd)	67
Reclaimed	2,900	Other	300	Storage Capacity (mgd)	54.2

Water Sources / Suppliers[1]		Water Treatment Facilities[1]			Facility Notes
Import Provider	SWP via MWD	Filtration Plant	1	7,900	---
Number of Wells	29	GW Recharge	1	7,000	---

LOCAL WATER SOURCES[1]

Surface Water	***Source***	***Amount (AFY)***	***Notes***
	Whitewater River	2,800	*Per 2010 UWMP*
Groundwater	***Basin (Basin No.)*** [2]	***Amount (AFY)***	***Notes***
	Whitewater (Indio) (7-21.01)	7,000	*DWA portion (per natural recharge) managed by CVWD and DWA jointly*

WASTEWATER SERVICE DATA

System Size (miles)		Sewer Connections (#)		Recycled Water Uses		Facility Notes
Gravity Sewer	6.43	Domestic	300	X	Irrigation	*Tertiary treated*
Force Main	0.25	Commercial	60	_	Agriculture	---
Other	---	Industrial	0	_	Industrial/Util.	---
		Other	0	X	GW Recharge	*Secondary treated*

WASTEWATER TREATMENT FACILITIES

Plant No.	CURRENT		PLANNED[3]		PLANT TOTAL
	Treatment	Capacity	Treatment	Additional Capacity	Total Capacity
1	Secondary/Tertiary[4]	10 MGD	---	5 MGD	15 MGD

Key: NP = not provided (in LAFCO Report) NA = not available --- denotes no change or not applicable
NS = not specified (gen. interchangeable) MGD = million gallons per day

Footnotes:
1. Information / data from District's 2010 UWMP. All other information from LAFCO MSR Report.
2. Basin numbers as per DWR Bulletin 118.
3. New facility if no 'current' data listed; otherwise additional capacity or treatment process upgrade indicated.
4. DWA's RWTF provides tertiary treatment once the City of Palm Springs has completed primary and secondary treatment per 1988 agreement.

Source: Riverside LAFCO, Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley, 2005.

In 1988, DWA and the City of Palm Springs entered into an agreement to treat wastewater. Under this agreement, the city provides primary and secondary treatment then the secondary effluent is piped to DWA's Recycled Water Treatment Facility (RWTF) for tertiary treatment. The RWTF has a present treatment capacity of 10.0 million gallons per day (MGD) with an ultimate capacity of 15.0 MGD. The facility provides recycled water for landscape irrigation use by its customers. Any excess secondary effluent is discharged into percolation ponds for groundwater recharge. DWA projects use of 7,900 AFY of recycled water (a combination of tertiary treated water used for landscape and secondary treated water for groundwater recharge) in 2010, increasing to 11,000 AFY by 2035.

b. DWA Water Availability

The existing water supplies face risks, variations and unpredictability that could affect long-term supply reliability. These include the extended drought in the southwestern United States and legal/regulatory decisions affecting vital contracts and water deliveries. In addition, climate change could impact both supplies and demands in the Coachella Valley. Since the DWA shares its groundwater and imported water sources with the CVWD, the supply issues described for that agency, also generally apply for the DWA. These similarities also apply for emerging issues, such as subsidence and invasive species. See CVWD discussion (above).

DWA's annual projected municipal water use is projected to increase from approximately 46,000 AF at present, to roughly 65,000 AF in 2035. Outdoor water use accounts for an estimated 60-80% of the residential and commercial water use within the DWA's Service Area. From 1999 to 2008, DWA reports it added new connections at a rate of about 0.4% per year and peaked at a rate of 3.10% per year around 2008. Average water consumption per active service connection in 2008 was approximately 1,600 gallons per day (0.0048 AF per day).

In summary, DWA finds in its 2010 UWMP that demand will exceed supply during normal, single-dry and multiple-dry years due to the reduction in SWP deliveries as described in DWR's Reliability Report, unless DWA continues to extract groundwater in storage. However, without consistently importing water to offset overdraft in the Whitewater River Subbasin, significant reduction of groundwater in storage will occur. DWA needs to receive greater than 60% of its SWP Table A allocations in order to ensure that demand does not exceed supply in the Upper Whitewater River Subbasin over the next 25 years.

Table 4.19-AZ: DWA Water Supply and Demand Summary

DATA SUMMARY						Desert Water Agency
DATA[1]	2010	2015	2020	2025	2030	2035
Population	60,600	64,700	70,100	74,900	80,600	86,500
EXISTING SUPPLIES[2]						
Water Budget – Average Year (in AF)						
Import	27,500	27,400	27,400	27,300	27,200	27,100
Groundwater	23,100	24,200	25,600	27,000	28,400	32,000
Recycle/Other[3]	10,400	12,000	12,000	14,300	14,300	14,300
Supply Total	***61,000***	***63,600***	***65,000***	***68,600***	***69,900***	***73,400***
Demand Total	50,500	55,100	59,100	65,400	69,400	73,400
Net Supply	10,500	8,500	5,900	3,200	500	0
Water Budget – Single Dry Year (in AF)						
Import	1,500	1,700	1,900	2,100	2,300	2,500
Groundwater	38,600	41,400	45,200	49,000	52,800	56,600
Recycle/Other[3]	10,400	12,000	12,000	14,300	14,300	14,300
Supply Total	***50,500***	***55,100***	***59,100***	***65,400***	***69,400***	***73,400***
Demand Total	50,500	~~55,100~~	~~59,100~~	~~65,400~~	~~69,400~~	~~73,400~~
Net Supply	0	0	0	0	0	0
Water Budget – Multiple Dry Years (in AF)						
Import	27,500	7,400	7,400	7,600	7,600	7,600
Groundwater	23,100	35,700	39,700	43,500	47,500	50,400
Recycle/Other[3]	10,400	12,000	12,000	14,300	14,300	14,300
Supply Total	***61,000***	***55,100***	***59,100***	***65,400***	***69,400***	***72,300***
Demand Total	50,500	~~55,100~~	~~59,100~~	~~65,400~~	~~69,400~~	~~73,400~~
Net Supply	10,500	0	0	0	0	-1,100
Base Adequacy	***yes***	***yes***	***yes***	***yes***	***yes***	***no***

Footnotes:
1. All data from UWMP, unless noted otherwise. All data rounded to nearest hundred
2. Water years used (for average, dry and multi-year dry benchmarks): 2004-2009, 1977 and 1990-1992.

Source: Desert Water Agency. Urban Water Management Plan, 2010.

c. DWA Subagency: Mission Springs Water District

Formerly known as the Desert Hot Springs County Water District, the Mission Springs Water District (MSWD) was established in 1953 in the northwestern portion of the Upper Coachella Valley. MSWD provides retail domestic potable water service, as well as wastewater services that include sanitary sewer collection and treatment. MSWD also performs groundwater management. LAFCO notes that MSWD is included in Desert Water Agency's taxing jurisdiction boundary to qualify for SWP entitlements and also receives SWP water from DWA (indirectly via groundwater recharge). Information used in this subsection is from MSWD's 2010 UWMP, unless noted otherwise.

As shown in Figure 4.19.27, MSWD's service area consists of 135 square miles, including the City of Desert Hot Springs, portions of the City of Palm Springs, plus ten smaller adjacent unincorporated communities in eastern Riverside County. MSWD currently provides water service to approximately 36,000 people and sanitary sewer service to approximately 8,000. MSWD water supply and distribution system includes three separate and distinct water supply and distribution systems with the largest of the three systems serving the community of Desert Hot Springs and surrounding communities of West Garnet, as well as North Palm Springs. The two smaller systems, Palm Springs Crest and West Palm Springs Village, are located west of Desert Hot Springs, north of I-10 and abutting the Morongo Indian Reservation.

MSWD's drinking water comes entirely from local groundwater via 14 active production wells, plus additional production from CVWD wells in the Mission Creek Subbasin. CVWD is also contracted with MSWD as an emergency source of water. A third source of water is obtained through an agreement between DWA and MWD which exchange water from the SWP for Colorado River water. DWA then uses this water to recharge the Coachella Basin, the groundwater source used by MSWD and CVWD. Continued recharge will largely be dependent on the future availability of water from the CRA and MWD's exchange agreement with DWA.

MSWD, DWA and CVWD now jointly manage the Mission Creek Subbasin under the terms of the 2004 Mission Creek Settlement Agreement and are collaborating on a water management plan for the subbasin. This agreement and the 2003 Mission Creek Groundwater Replenishment Agreement between CVWD and DWA specify that available SWP water will be allocated between the Mission Creek and Whitewater River subbasins in proportion to the amount of water produced or diverted from each subbasin during the preceding year. In 2009, production from the Mission Creek Subbasin was about 7% of the combined production from these two subbasins.

MSWD also currently operates two wastewater treatment plants: The Horton Treatment Plant and the Desert Crest Treatment Plant have capacities of 2.3 mgd (2,800 AFY) and 0.18 mgd (202 AFY), respectively. The effluent from these plants undergoes a secondary treatment process and is then used for irrigation, wash down at treatment plants or put in percolation ponds near the Mission Creek Fault. MSWD has plans to develop a recycled water system to reclaim and reuse almost all of the wastewater generated within the district for use in landscape and golf course irrigation.

With the development of a recycled water system within the next decade, recycled water could supply a number of landscape and irrigation users that are currently dependent on potable water, thus reducing the demand on groundwater pumping. MSWD currently percolates treated effluent into the groundwater basin. Though this does not reduce the demand for pumped groundwater, it does provide recharge that benefits basin as a whole and lessens the impact of pumping.

With these treatment plants and groundwater recharge programs in place, in 2035, for both dry and multiple dry years, MSWD estimates that it will have a total supply of 44,500 AF and total demand of 22,600 AF, resulting in a surplus of 21,900 AF. The numbers are even better for normal years. Therefore, MSWD has calculated based on

the above that it will be able to meet all of its demands even under the highest future growth estimates and for the driest potential type of hydrology.

MSWD's only direct source of urban potable water is local groundwater. With regional management of the groundwater basin, overdraft of the basin is expected to be managed satisfactorily and water supply reliability is expected to be good. There are reliability concerns, however, with supplies of SWP water used for groundwater replenishment. Projects are under development by regional agencies to ensure the reliability of these supplies.

3. Palo Verde Irrigation District

PVID was organized in 1923 by state legislation, consolidating three water agencies with the main purpose of protecting and conserving water of the Colorado River and the rights to its waters. The irrigation district diverts its water from the Colorado River on the basis of rights dating back to 1877. PVID only supplies irrigation water. It does not provide potable water and does not serve municipal or retail customers. The principal city in the area is Blythe, which with its urban fringe has a population of about 21,800, although more than 8,000 of these are inmates in two State of California prisons. Blythe serves a population of about 30,000 people, some of whom live in Arizona.

a. Notes on PVID

The PVID is located on the west side of the Colorado River in the vicinity of Blythe, California and occupies about 190 square miles of territory in Riverside and Imperial Counties. The District encompasses approximately 131,300 acres, including roughly 27,000 acres on the Palo Verde Mesa, which rises 80 to 130 feet above the valley to the west. Colorado River water supplied through PVID canals is lifted onto the mesa by private pumps to irrigate PVID acreage. The remainder is irrigated from private deep wells.

As shown in Figures 4.19.2 and 4.19.26, the Colorado River forms the eastern and southern boundaries of Palo Verde Valley. The valley is relatively level, approximately 9 miles wide and 30 miles long, and ranging in elevation from 290 feet at the northern end to 220 feet at the southern end. The soils are alluvial from historic Colorado River floods and range in texture from fine grain clays to silty loams to light sandy soils, with the predominant soil being a sandy loam. The entire valley is underlain with permeable sand at shallow depths. The adjacent Palo Verde Mesa, formed by flooding of the Colorado River, is divided into the upper and lower terrace. Farming outside the valley is largely limited to the lower terrace, which is a mile wide and roughly 60 feet higher in elevation than the valley. Soils on the mesa are excessively drained to well-drained fine sand, gravelly sand and loam, older alluvial deposits derived from the adjacent mountains.

In 2003, a total of roughly 93,400 acres were cultivated within the PVID service area. On this acreage, the year-round growing season and multi-cropping practices resulted in a net crop yield of nearly 106,600 acres. The predominant crop on the mesa is citrus, while valley crops are principally alfalfa, sudan grass, cotton, wheat, melons and miscellaneous vegetables. In recent years, the annual value of crops produced within the District has ranged from $60 million to $158 million, excluding livestock.

PVID administers water delivery and the agricultural runoff drain system that services the Palo Verde Valley and Mesa (see Figure 4.19.28 (PVID Service Boundaries)). PVID diverts water from the Colorado River at the Palo Verde Diversion dam for irrigation. It also manages 142 miles of open drains that discharge agricultural runoff into the Palo Verde Outfall Drain. The drain discharges into an old channel of the Colorado River at the Cibola National Wildlife Refuge (in La Paz, Arizona) before joining the present Colorado River channel. The Palo Verde Lagoon and Outfall Drain are listed on the 2010 Clean Water Act Section 303(d) list due to excessive levels of

pathogens and DDT (dichlorodiphenyl trichloroethane). See Section 4.19.2.C ("Water Quality Within the Hydrological Regions") for additional information.

The Palo Verde Diversion Dam was constructed to ensure adequate diversion of irrigation water to farmlands within PVID's service area by maintaining a constant water surface elevation at the canal intake during periods of normal river flow. The diversion facilities were designed to discharge 1,800 cfs into the Palo Verde desilting basin when the river is at the established forebay elevation (283 feet). The dam, spillway and canal headworks were built by the U.S. Bureau of Reclamation. The canals serving the irrigation district were constructed by private interests. The region's groundwater is hydraulically connected to the Colorado River. The groundwater in the valley lies at an average depth of approximately 10 feet, as shown by over 200 observation wells throughout the region. In 1957, the average depth to groundwater was approximately 5.5 feet.

To deliver irrigation water, PVID operates 56 miles of lined canals. To improve distribution, many farm ditches have been concrete-lined in recent years. There are now approximately 315 miles of concrete-lined farm ditches in the valley, about 72% of all private ditches. To drain water back into the Colorado River, PVID operates a drainage system of approximately 140 miles of open drainage channels and 250 siphons (submerged culverts) to carry groundwater drainage and canal operational spill water away from farmland and back to the river. The canal system's main and lateral line capacities range from 2,100 cfs at the upper (northern) end of the district, down to 25 cfs at the various small laterals throughout the valley. In total, the canal system encompasses more than 2,550 structures necessary to operate the system, including canal headings, checks, siphons, deliveries, bridges, flumes, pump plants, moss racks, etc.

b. PVID Water Supply

An abundant supply of water for irrigation has been available for the Palo Verde Valley since the construction of Hoover Dam and the subsequent control of the Colorado River. Due to irrigation practices, the original saline condition of the valley soils, the flat slope of the valley and other related factors, diversion per acre is high. However, considerable water, both operational spill and drainage flow, is returned to the river at the lower end of the valley. Between 1993 and 2002, the average diversion per cropped-acre was approximately 10.28 AF, with an average return flow of 5.21 AF, resulting in an overall net water use of 5.08 AF per net cropped-acre. Operation of a fallowing program in the second half of 2003 resulted in the fallowing of 17,100 acres, with the water saved going to the CVWD.

Irrigation water is delivered to the Palo Verde Valley user for a flat charge of $52.00 per acre per year. This charge, plus the average irrigation district assessment, results in a current total annual water cost of about $61.00 per acre. PVID receives no funding from state or federal governments. PVID operates a land fallowing program in coordination with MWD that pays farmers to fallow their land in lieu of planting a crop that would otherwise lose water to evapotranspiration processes. The 35-year program began in 2004 and is designed to annually set aside a portion of their land, rotate their crops and transfer saved water to urban Southern California. The program complements existing and proposed water transfers with neighboring IID and is the largest and longest water transfer of its kind in California history, providing up to 3.63 million-AF of water over the term of the program. PVID also participated in a short-term emergency fallowing program during 2009-2010 that increase incentives for fallowing land due to severe water shortages in Southern California.

4. City of Blythe

Located on the western bank of the Colorado River, the City of Blythe is the easternmost municipality in Riverside County. It occupies nearly 27 square miles (13,500 acres). Though Blythe is an incorporated munici-

pality, outside Riverside County's jurisdiction and the scope of this EIR, it is included here as a source of information for water resources potentially affected by future development in the surrounding unincorporated Riverside County areas proposed under GPA No. 960 (changes in the area around Blythe Airport, in particular). As such, the information here comes from the City of Blythe's 2005 Urban Water Management Plan ('UWMP,' for this subsection), the most recent document available for the area.

The City of Blythe is geographically isolated, has no water system connections to other areas and has no opportunity for water transfers, wheeling or other exchanges. The local groundwater basin (continuously recharged by the Colorado River) and the Colorado River itself are the only source of water to the area; there are no water imports or supplemental water service (UWMP, page 18). According to Table 4 of its UWMP, Blythe pumped roughly 5,000 AF in 2005 and projects demands of 11,500 AFY for 2010 through 2020, with demand reaching 13,000 AF by 2025.

Blythe's UWMP (page 2) forecasts "reliable water supplies and demands for the city to 2040" as the city uses a groundwater basin with "an (essentially) infinite perennial yield" (UWMP, page 4). For this reason, the city's UWMP concludes that its groundwater supply will "greatly exceed City demand at any point in the future" (UWMP, page 7), even with a projected growth rate of between 3.2% (actual) and 4.1% (projected) per year.

The city's water meets all primary drinking water quality standards, but exceeds several secondary standards (UWMP, page 6). Specifically, the groundwater tends to be high in manganese. Iron levels, color and turbidity are also sometimes exceeded. The municipal system includes secondary treatment for iron and manganese to improve water quality for these constituents. Where private wells are used to supply water, i.e., outside the city, these levels may continue to be exceeded.

For wastewater, all flows from the city (excluding stormwater runoff) are collected and treated at Blythe's wastewater treatment plant (WWTP). The WWTP treats an average of 1.2 mgd (maximum 2.4 mgd) to a secondary level with denitrification. The treatment plant was designed to "expand incrementally" as needed to allow for capacity increases as inflow increases. At build out (projected at 2040), the plant has a planned maximum daily volume of 9 mgd (UWMP, page 25). The WWTP discharges treated wastewater to percolation ponds, where it returns to the groundwater on the downslope groundwater gradient, southeast of the city. All of the city's potable water supply is pumped from the upslope groundwater gradient, northwest of the city.

H. Water Providers in the San Gorgonio Pass and Central Mountains of Riverside County

As noted previously, a variety of water providers serve the San Gorgonio Pass region, as well as the central San Jacinto Mountains area of Riverside County. Of these providers, two are State Water Contractors: the San Gorgonio Pass Water Agency (SGPWA) and the San Bernardino Valley Municipal Water District (SBVMWD), each of which imports SWP water and provides only wholesale water; neither serves any retail customers.

As shown in Figure 4.19.29 (SGPWA Service Boundaries) and Figure 4.19.30 (Groundwater Basins in the SGP Region), SGPWA serves the following retailers: Beaumont-Cherry Valley Water District, Yucaipa Water District and Cabazon County Water District, as well as the City of Banning (which, in turn, serves High Valleys Water District). All of these retail water districts, except High Valleys, also use local groundwater. SBVMWD serves the Yucaipa Valley Water District (YVWD) in the pass, as well as West Valley Water District and City of Riverside in western Riverside County.

Though located primarily in San Bernardino County, both SBVMWD and YVWD also serve portions of unincorporated Riverside County near the border and access groundwater from a basin shared by the area's local Riverside County providers. These water providers are discussed under western Riverside County, above. As with the providers in western Riverside County, in the previous section, the eastern Riverside County providers are detailed here, with expanded details provided for CVWD, in particular, as the region's major wholesaler.

1. San Gorgonio Pass Water Agency

As described in its 2010 Urban Water Management Plan ('UWMP' for this subsection), the San Gorgonio Pass Water Agency (SGPWA) was established in 1961 by act of state legislature. Its boundaries encompass portions of both Riverside and San Bernardino Counties, including the cities of Calimesa, Beaumont and Banning, as well as other unincorporated areas such as Cherry Valley, Cabazon, Poppet Flat and Banning Bench. See Figure 4.19.29.

The SGPWA is one of 29 State Water Contractors responsible for the importation of water from Northern California through the SWP into the contractor's service area. As a State Water Contractor, SGPWA purchases water from the State of California and sells it to the local retail water agencies within its service area. The agency does not provide any direct retail water services to customers.

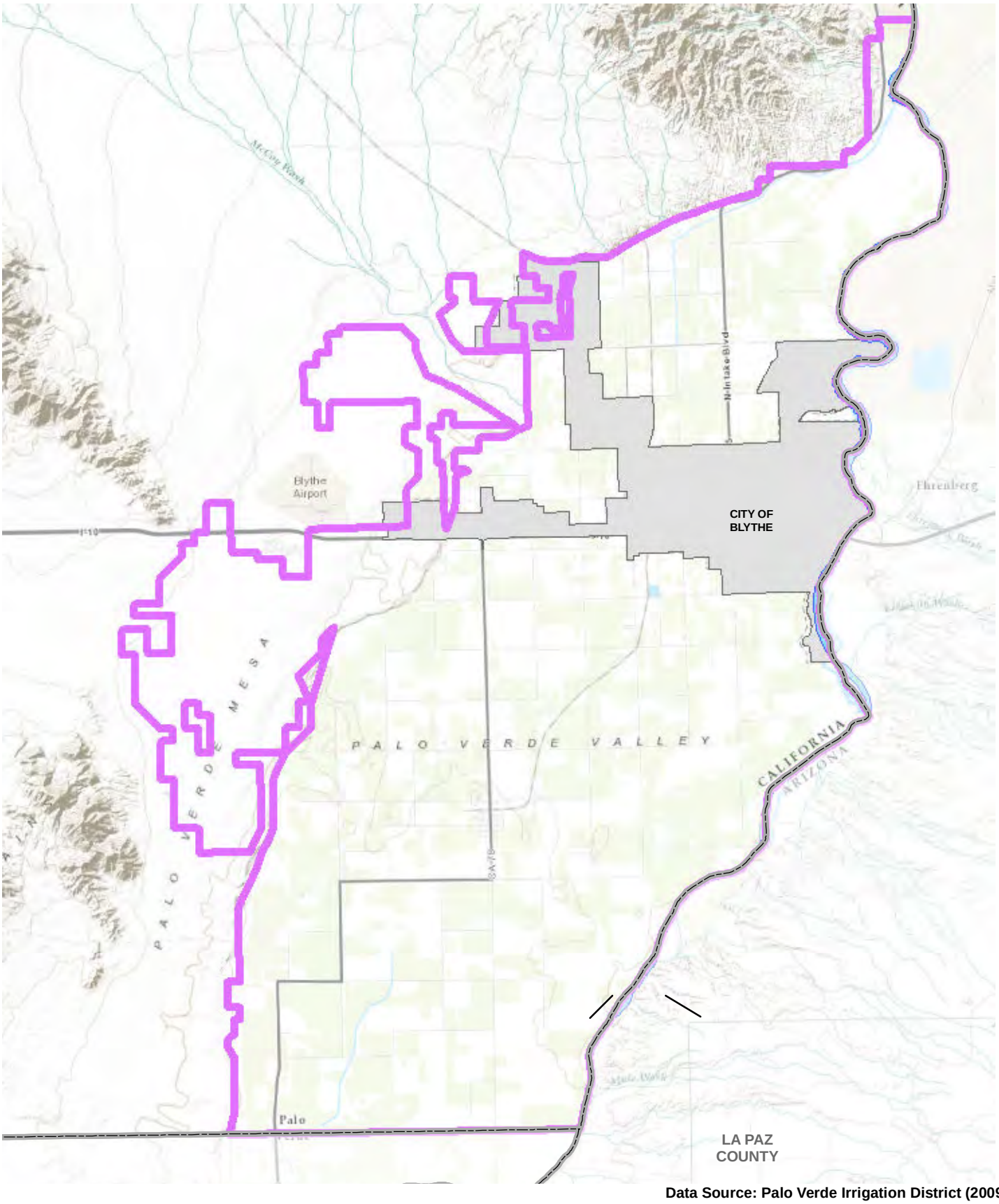
SGPWA's service area roughly includes: the Yucaipa Valley Water District (17,400 acres), South Mesa Water Company (1,000 acres), Beaumont-Cherry Valley Water District (19,700 acres), City of Banning Water Department (19,600 acres), Cabazon Water District (8,000 acres), Banning Heights Mutual Water Company (900 acres), High Valley Water District (5,300 acres), Morongo tribal lands (34,600 acres) and other unincorporated portions of Riverside County (34,000 acres) and San Bernardino County (1,900 acres). In total, the service area covers 225 square miles, roughly 142,400 acres. See Figures 4.19.1 and 4.19.29. From 2010 to 2035, SGPWA's population is expected to grow from 91,800 to 212,400 residents; an addition of 120,600 people. This is an average annual increase of 3.4%.

a. Notes on SGPWA

SGPWA is only an importer of SWP water; it sells water to local agencies to supplement their supplies and reduce groundwater overdraft. Water supplies available in the SGPWA service area include groundwater, surface runoff and stormwater, recycled water and imported water. Each of these categories of water has unique characteristics that affect long-term yield, seasonality, sensitivity to climatic variation and reliability.

Local sources of water supply in the San Gorgonio Pass area, including groundwater, surface runoff and recycled water have been sufficient to sustain 100% of current water demands. As of 2010, SGPWA had total local supplies of over 33,200 AFY. However, as of 2035, with implementation of planned water recycling, runoff capture and other programs, SGPWA estimates that it will have local supplies of 43,900 AFY. Currently, local supplies are sufficient to meet 90% of water demand, largely due to the declared temporary surplus in the Beaumont groundwater basin. However, by 2013 imported water will become more and more necessary, and will be needed to meet over 30% of annual water demands.

Groundwater sources of supply are numerous and diverse throughout the SGPWA service area, and groundwater pumping occurs in the Beaumont, Banning, Yucaipa and Cabazon groundwater basins. Pumping in Banning and Edgar canyons is also a major source of groundwater. Less the water from Cabazon basin, which is used by water purveyors that do not purchase water from SGPWA, the total groundwater safe yield available from these basins in the SGPWA Service Area totals 17,650 AFY.



Data Source: Palo Verde Irrigation District (2009)

December 16, 2013

Palo Verde Irrigation District Service Area

Figure 4.19.28

PALO VERDE IRRIGATION DISTRICT SERVICE AREA

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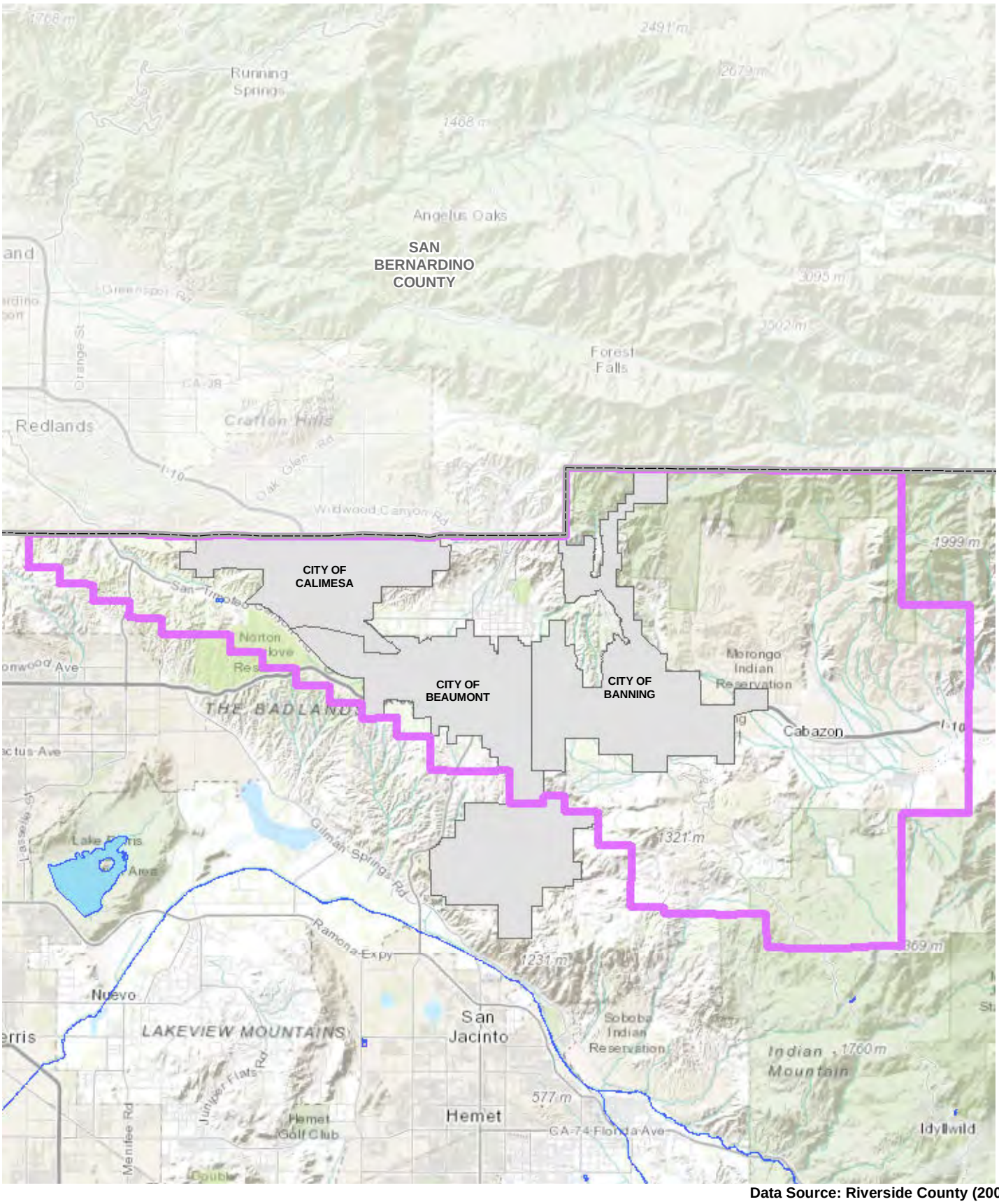

Data Source: Riverside County (2009)

December 16, 2013

San Gorgonio Pass Water Agency Service Area

Figure 4.19.29

SAN GORGONIO PASS WATER AGENCY SERVICE AREA

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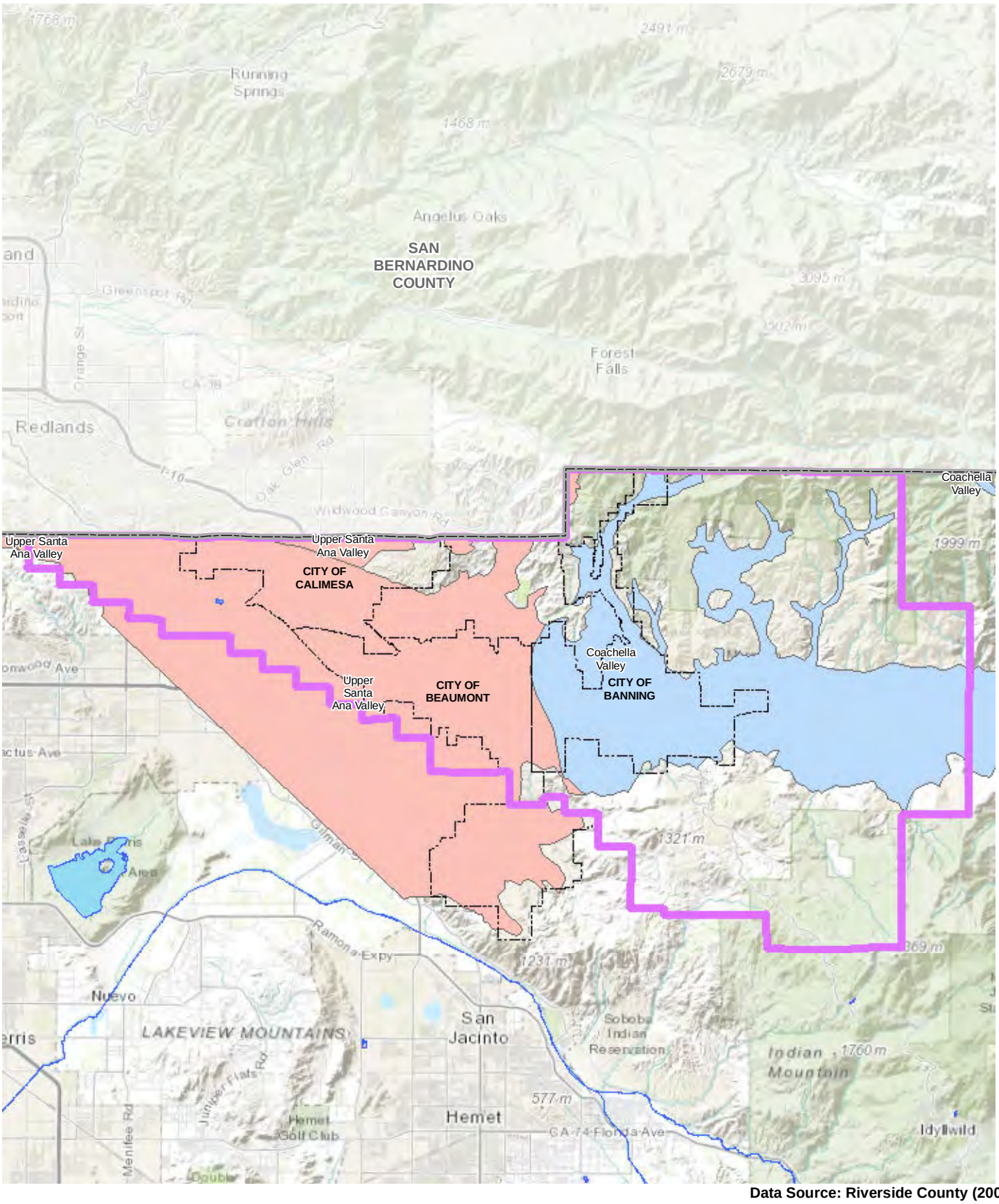

Data Source: Riverside County (2009)

December 16, 2013

San Gorgonio Pass Water Agency Service Area

Figure 4.19.30

GROUNDWATER BASINS IN THE SAN GORGONIO PASS

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Surface runoff flowing out of canyons in the San Bernardino Mountains within the San Gorgonio Pass area is discharged either westward to San Timoteo Creek or eastward to the Whitewater River. Historical diversions of the Whitewater River to recharge the Banning Canyon groundwater basin within the alluvial bottom of the San Gorgonio River were a component of Banning's water supply. These diversions are no longer performed and the City of Banning has no plans to capture additional surface runoff for groundwater recharge. In the San Timoteo watershed, YVWD captures a long-term average of 1,000 AFY from canyon runoff in Oak Glen and Wildwood Canyons. In recent years, this source of runoff has declined. YVWD is planning to continue capturing runoff for groundwater recharge in the Yucaipa groundwater basin, but is not expecting any additional yield.

Future sources of surface runoff include Edgar Canyon and Noble Creek, which are sources of water that BCVWD is planning to use to provide additional recharge of the Beaumont groundwater basin, in excess of current recharge in channel bottoms. BCVWD has projected long-term annual average runoff in Little San Gorgonio and Noble creeks of 2,000 AFY and 1,000 AFY, respectively. Surface runoff sources from small mountain canyons are highly variable, but BCVWD also plans to capture surface runoff from the San Timoteo gauge at the BCVWD Recharge and Recycle Facility, which can store up to 130 AF and could potentially recharge 9,500 AF.

The use of recycled water to offset potable water demands and for groundwater replenishment is a major component in the supply plans for most of the retail member agencies in the SGPWA service area. BCVWD has installed a large conveyance system for recycled water to be used for landscape irrigation throughout the City of Beaumont. This system is intended to convey 100% of recycled water from the City of Beaumont to specific landscape irrigation customers. Recycled water would be provided to users at approximately 4,500 AFY by 2015, increasing to approximately 9,000 AFY by 2035. At these planned rates of recycled water use, the percentage of total water demand served with recycled sources will be 25% by 2015 and 32% by 2035. This level of recycled water use is comparable to some of the most aggressive water recyclers in Southern California. BCVWD also plans to recharge the Beaumont groundwater basin with recycled water from City of Beaumont and potentially YVWD.

Water recycling is also an important component of the long-term water supply for YVWD. The Henry N. Wochholz Regional Water Recycling Facility produces approximately 3 mgd of advanced tertiary treatment of wastewater from YVWD sewer system, currently discharged to San Timoteo Creek. The treatment capacity of this facility would allow for up to 6.7 mgd, but may be re-rated to 8 mgd. YVWD plans to implement aggressive recycled water use for new development in the City of Calimesa, requiring dual plumbing for front yard irrigation on single-family residential properties.

Similarly, the use of recycled water is a major part of Banning's long-term water supply planning. Banning has plans to upgrade its wastewater treatment plant to meet Title 22 requirements. The first phase of the planned recycled water system will provide water for irrigation at the Sun Lakes Country Club and Golf Course. Also, Banning plans to use recycled water to recharge the West Banning Storage Unit. Part of this project includes the addition of new wells in the vicinity of the proposed recharge location to recover the recycled water. SGPWA operates the Little San Gorgonio Creek Recharge Facility on Orchard Street in Cherry Valley. The facility includes six ponds in which SWP water sent to percolate into the Beaumont groundwater basin for recharge.

By 2035, SGPWA will need more than 25,000 AFY in imported water to meet needs, including mitigating overdraft in the Beaumont Basin. SGPWA is one of 29 water agencies contracted to pay a portion of the SWP debt service. SGPWA's Table A water allocation of the SWP is 17,300 AFY, but Table A is a tool used by DWR to allocate fixed and variable SWP costs and yearly water entitlements to the contractors, it does not reflect actual deliveries a contractor should expect to receive.

While SGPWA has been a SWP contractor since 1962, the ability to use water imported from Northern California is only a recent development. The first phase of the SWP East Branch Extension pipeline was completed in 2003 to convey water to San Bernardino Valley Water District (SBVMWD) and SGPWA. Since 2003, SGPWA has purchased a portion of its Table A allocation to sell to retailers within its service area, including BCVWD and the City of Banning. In addition, SGPWA has reserved a portion of Table A purchases for mitigating overdraft in the Beaumont groundwater basin. Based on DWR's modeling, SGPWA has calculated that for 80% of the years it will have at least 8,000 AFY of SWP water available.

SGPWA also participates in and has studied the feasibility of additional water transfers and exchanges to augment its water supplies. It is a signatory to the Yuba Dry-Year Water Transfer Program from which it receives between 300 and 600 AFY. SGPWA has also participated in water transfers with SBVMWD and the Crestline-Lake Arrowhead Water Agency.

b. SGPWA Water Demands

BCVWD, YVWD, SMWC, CWD and the City of Banning are the five retail water agencies responsible for serving most water demands in the San Gorgonio Pass region and potential imported water demand on SGPWA. Current demands for non-potable water are minimal, but expected to increase to up to nearly 8,900 AFY for BCVWD; 2,800 AFY for Banning; 2,200 AFY for YVWD and over 200 AFY for SMWC; for a total non-potable demand of 14,100 AFY. Each retail water agency has plans for delivering recycled water to serve these non-potable demands.

Between its local supplies, conservation savings and imported water, SGPWA calculates that, for the year 2035 under normal, dry or multiple dry year conditions, it will have 77,800 AFY of total demand and 77,800 AFY in total supply, and therefore in that year and in intervening years, it has sufficient existing or planned supplies to enable it to meet projected demands.

The Morongo Tribe does not currently need imported water and SGPWA does not anticipate that the tribe will need such water in the future. However, if the Morongo Tribe later determines that it will need imported water supplies from SGPWA, the additional demand will be reflected in updates to the SGPWA UWMP. Future water demands included here are derived entirely from data provided by each retail water agency in recent coordination activities, most recent available UWMPs or from information provided to the San Timoteo Watershed Management Authority.

Table 4.19-BA: SGPWA Average Year Water Supply and Demand Estimates

Demand and Supply (AFY)	2010	2015	2020	2025	2030	2035
Total Potable Demands	29,700	31,700	38,800	48,800	58,800	63,700
Total Non-Potable Demands	100	7,600	9,000	10,900	12,900	14,100
Consumptive Demand Subtotal	***29,800***	***39,300***	***47,900***	***59,700***	***71,700***	***77,800***
Minus Other Sources of Supply						
Conservation BMP Reductions	- 0	- 900	- 3,000	- 4,100	- 5,200	- 5,900
Local Supplies from Retail Agencies	-33,220	- 30,400	- 35,500	- 39,100	- 42,700	- 43,900
Total Demand on SGPWA*	**0**	**7,900**	**9,300**	**16,400**	**23,700**	**28,000**

* Totals may not sum exactly due to rounding values to nearest hundred.
Source: SGPWA 2010 UWMP, Table 2-3, pages 2-4.

c. SGPWA Water Availability

Based on the implementation of the identified DMMs, the development of recycled and other water resources projects and the other future actions identified above, in conjunction with existing water supplies, projected

available water supplies would be sufficient to meet projected water demands in normal, single dry and multiple dry years in the year 2035 and the interim.

Table 4.19-BB: SGPWA Water Supply and Demand Summary

Type of Demand or Supply (AFY)	2010	2015	2020	2025	2030	2035
Average Hydrologic Year						
Total Local Potable Water [1]	35,300	24,400	28,300	30,300	31,000	31,200
Total Local Non-Potable Water [1]	100	6,800	8,700	10,400	13,200	14,200
Conservation Savings	--	900	3,000	4,100	5,200	5,900
Table A (SWP) Supply	8,700	10,400	10,400	10,400	10,400	10,400
Supplemental – Permanent [2]	--	--	--	4,500	11,800	16,000
Total Supply [5,6]	***44,000***	***42,600***	***50,500***	***59,700***	***71,700***	***77,800***
Total Demand [6]	29,800	39,300	47,900	59,700	71,700	77,800
Average Year – Net Total [6]	14,300	3,300	2,700	0	0	0
Single Dry Hydrologic Year						
Total Local Potable Water [1]	35,300	22,400	25,300	27,300	28,000	28,200
Total Local Non-Potable Water [1]	100	6,800	8,700	10,400	13,200	14,200
Conservation Savings	--	900	3,000	1,400	5,200	5,900
Table A (SWP) Supply	1,700	1,700	1,700	1,700	1,700	1,700
Supplemental – Permanent [2]	--	--	--	4,500	11,800	16,000
Supplemental – Short-term [3]	--	7,500	9,100	11,800	11,800	11,800
Total Supply [4]	***37,000***	***39,300***	***47,900***	***59,700***	***71,700***	***77,800***
Total Demand	29,800	39,300	47,900	59,700	71,700	77,800
Single Dry Year – Net Total	7,300	0	0	0	0	0
Multiple Dry Hydrologic Years						
Total Local Potable Water [1]	35,300	23,000	26,200	28,100	28,800	29,000
Total Local Non-Potable Water [1]	100	6,800	8,700	10,400	13,200	14,200
Conservation Savings	--	900	3,000	4,100	5,200	5,900
Table A (SWP) Supply	6,000	6,000	6,000	6,000	6,000	6,000
Supplemental – Permanent [2]	--	--	--	4,500	11,800	16,000
Supplemental – Short-term [3]	--	2,600	4,000	6,600	6,600	6,600
Total Supply [4]	***41,400***	***39,300***	***47,900***	***59,700***	***71,700***	***77,800***
Total Demand	29,800	39,300	47,900	59,700	71,700	77,800
Multiple Dry Years – Net Total	11,600	0	0	0	0	0

Footnotes:
1. Totals may not sum exactly due to rounding values to nearest hundred.
2. Water totals from retail agencies within SGPWA (BCVWD, Banning, YVWD, CWD and SMWC).
3. Supplemental water to demonstrate sufficient water to meet long-term average annual new development demand.
4. Imported water transfers/exchange or Beaumont Basin storage accounts to be used as needs when permanent supply is not sufficient (e.g., dry years).
5. Total supply includes demand reductions from water conservation BMPs.

Source: SGPWA, 2010 UWMP, Table 2-3, pages 2-4, 2010.

d. SGPWA Subagencies

Beaumont-Cherry Valley Water District: The Beaumont-Cherry Valley Water District (BCVWD) has evolved from a small privately-owned company that was started to support development in the water districts service area to a system that serves over 35,000 people. The district's current service area covers approximately ten square miles, virtually all of which is in Riverside County and includes the City of Beaumont and the community of Cherry Valley. The water district relies on wells, captured surface runoff, groundwater recharge and reservoir storage to ensure adequate water supply for its residential, commercial and industrial customers.

The service area ranges in elevation from 2,600 feet above sea level in Cherry Valley to over 4,000 feet in the upper reaches of BCVWD's sphere of influence. According to the district's 2005 UWMP, the service area currently provides water to approximately 9,700 service connections. From 2003 to 2005, the district averaged

1600 connections per year – this rate is expected to increase over time. The district is projecting that, by 2015, they will provide water to approximately 32,035 connections within their sphere of interest and approximately 36,070 customers by 2030.

Yucaipa Valley Water District: This water district receives water from both the SGPWA and SBVMWD. As such, YVMWD is addressed under the SBVMWD in the section on western Riverside County water districts. The YVWD, along with BCVWD, the City of Beaumont and the South Mesa Water Company, are members of the San Timoteo Watershed Management Authority (STWA) which engages in watershed planning activities in order to ensure new water sources for the region are developed and used responsibly. STWA does not, however, encompass the entire Pass area. It also disagrees with several of SGPWA's reports and findings relating to various water estimates for the region. For more background on the disputes between the SGPWA and STWA, see the Riverside LAFCO Water and Wastewater Municipal Service Review for the Pass/Mountain Areas (Dudek and Associates, 2005).

2. Water Districts in the San Jacinto Mountains

The San Jacinto Mountains are the largest mountain range in Riverside County and generally separate the western third of Riverside County from the eastern desertous two-thirds that lie between the mountains and the Colorado River on the Arizona border. The region's mountains include parts of the San Bernardino National Forest and Riverside County's highest peak, 10,800-foot Mount San Jacinto, lies six miles north of Idyllwild. The lowest portion of the study area, near Saunder's Meadow, lies as 5,300 feet. While predominantly home to resort communities, the mountains also feature an increasing number of year-round residents, particularly clustered around Idyllwild.

As shown in Figure 4.19.31 (Mountain Water Districts Service Boundaries), the region's domestic (drinking) water service is provided by either the three independent water districts or through private wells (outside the districts' service areas). The three districts, Idyllwild Water District, Pine Cove [County] Water District and Fern Valley Water District have banded together to form the San Jacinto Mountains Area Water Study Agency (SJMA-WSA). This agency has arranged for water studies and serves to coordinate efforts amongst the three water districts in serving the population of the San Jacinto Mountains. (For the purposes of this subsection, the service areas' of the three districts are collectively referred to as the 'San Jacinto Mountain area' or 'mountains' herein.) As none of the three area water districts are required to prepare an urban water management plan, unless noted otherwise, the information provided in this subsection is from the Water Resources Management Plan (WRMP) prepared by Albert A. Webb Associates for the SJMA-WSA, dated May 11, 2005.

a. Background on Mountain Water Districts

Pine Cove Water District: The Pine Cove Water District (PCWD) was established in 1956 as a county water district under the provisions of CWC Section 30000. All water delivered to PCWD customers is produced from its 20 groundwater wells and three jointly-owned (with IWD) wells in Dutch Flats. Unlike the other two districts, PCWD does not currently have any rights to surface water in the area. All of its water supplies come from groundwater sources.

As part of PCWD's corrosion control plan, groundwater from its wells is pumped through the district's aeration facility to remove approximately 80% of the carbon dioxide from the production water and raise the pH level from 6.2 to 7.4 (i.e., lower the acidity of the water).

Idyllwild Water District: The Idyllwild Water District (IWD) was established as a county water district in 1955. IWD relies on a groundwater system as its primary water source. All water produced by IWD is pumped from 23 groundwater wells located throughout the area. IWD also owns a surface water reservoir known as Foster Lake, located on the Lilly Creek watershed. Under state license, IWD is permitted to store 40 AF of water from Lilly Creek each year. The license does not prohibit IWD from storing additional water in Foster Lake, therefore IWD also diverts surface water from Strawberry Creek under a pre-1914 appropriative right. The water stored in Foster Lake is used to recharge the groundwater used by IWD through infiltration. Once the lake is fully filled, the excess water flows downstream via Strawberry Creek. According to the WRMP (page 8), during a normal year IWD diverts an average of 119 AFY from Strawberry Creek. During the drought years of 1999 - 2002, the district diverted an average of 47 AFY (though only 0.34 AF in 2002).

IWD also owns and operates the only public wastewater collection system in the mountain communities. This system serves the central part of the IWD service area, roughly 600 connections (including 2% of FVWD's users), encompassing Idyllwild's commercial district, restaurants, motels and Idyllwild School (WRWP, page 2). All others use individual septic systems. The collected wastewater is treated at IWD's 0.25-mgd (million gallons per day) extended aeration treatment facility. Treated effluent is then conveyed by gravity to a system of percolation ponds and hillside irrigation for disposal. The average flow through IWD's treatment plant is approximately 100,000 gallons per day (gpd) and the average annual total treated is roughly 116 AFY (WRWP, page 9).

Fern Valley Water District: The Fern Valley Water District (FVWD) was established as a county water district in 1958. FVWD derives nearly 82% (135 AFY) of its total water production (165 AFY) from surface water supplied by Strawberry and Tahquitz creeks. During a normal water-year, surface diversions averaged 48 AFY and 74 AFY from Strawberry Creek and Tahquitz Creek, respectively. However, FVWD diverts less than its full licensed amount due to limitations on its current infrastructure for intake and storage. During the last extended drought, between 1999 and 2003, FVWD only diverted an average of 16 AFY and 73 AFY, respectively, from the two creeks.

FVWD's supply system consists of a surface water filtration plant and 14 active wells. When surface water is available, the district operates the filtration plant to treat water diverted from the aforementioned creeks. Once filtered, the water is provided to FVWD customers by gravity feed. The filtered surface water is augmented by water produced from wells on an as-needed basis (e.g., during dry month periods of peak demand). Per the WRMP (page 8), FVWD is also not diverting their entire licensed water allotment. This is reportedly because flow at the diversion structure "often falls below" the source's intake point and the district only has a storage capacity of 22.25 AF.

b. Mountain Area Water Supply and Demand

Because of their location on "the Hill," none of the three water districts are members of the SWP or otherwise affiliated with a State Water Contractor nor do they receive any SWP water or other imported water. PCWD's water supply comes solely from local groundwater sources. The other two districts utilize a combination of groundwater and surface water supplies from local streams and springs (though only FVWD diverts directly from surface waters). As such, these water supplies are dependent on the amount of precipitation (rain and snow) that falls locally in the watershed. Groundwater recharge in the area occurs through infiltration and percolation of precipitation, surface runoff in stream channels and percolation of delivered water (returning to the groundwater's fractured rock aquifers after use in irrigation, septic systems, etc.).

As the amount of precipitation occurring in any given year can vary unpredictably, available water supplies are characterized in two ways: normal precipitation periods and critical dry periods. For the region, 'normal

precipitation' is defined as a minimum of 28 inches per year, while a 'critical dry period' (CDP) is defined as having 16 inches or less precipitation per year. The drought between 1999 and 2003 was a CDP.

During an NPP, the San Jacinto Mountains area gets about 2,200 AFY of recharge and a similar amount (2,200 AFY) of total outflows, including approximately 1,700 AFY of subsurface outflow. Average groundwater pumping quantities for the three water districts plus groundwater extracted by private wells during an NPP is approximately 560 AFY. Estimates indicate that groundwater storage is approximately 66,300 AF within the study area during NPPs. See Table 4.19-BC (San Jacinto Mountain Area Water Production and Usage). According to the WRMP (page 7), the results of water budget calculations indicate that during normal precipitation periods (NPPs), based on limited groundwater level data, the groundwater is assumed to be in equilibrium and no change in storage occurs.

Water production values from the WRMP for each of the three districts are provided in Table 4.19-BC, below. The 2005 WRMP concludes: "Based on recorded water production and projected…estimates, NPP supply with current/near future water supply facilities is adequate to meet projected residential and commercial NPP water demands, including unaccounted water and other usage through 2020."

During critical dry periods (CDPs), approximately 1,400 AFY of recharge is calculated to occur. Of this, nearly 570 AFY is extracted from the basin as groundwater. Though basin-wide static water level data was not available for the last CDP (1999 to 2002), the WRMP estimates the mountains have approximately 64,000 AFY of groundwater storage during a CDP. However, it also notes that, "Further studies would need to be performed to determine the amount of water economically recoverable during a drought event." (WRMP, page 7.)

Water supply was also evaluated in the WRMP on both an annual and peak month basis to determine if each district has adequate supply and/or storage capacity to meet peak day demands during the peak summer months of a CDP. During CDPs, the WRMP finds (on page 11) that the three water districts will "likely have enough existing/near future CDP water supply to meet projected annual CDP water demands, including unaccounted water and other water usage by the year 2020," but that currently they cannot meet peak-day demands during CDPs. The study notes that "in order to meet the projected annual [CDP] demands, the districts must achieve annual water demand reductions equal to or greater than those achieved in 2002 through their Water Shortage Emergency Plan or other water conservation measures," that is, a "4% reduction."

Table 4.19-BC: San Jacinto Mountain Area Water Production and Usage

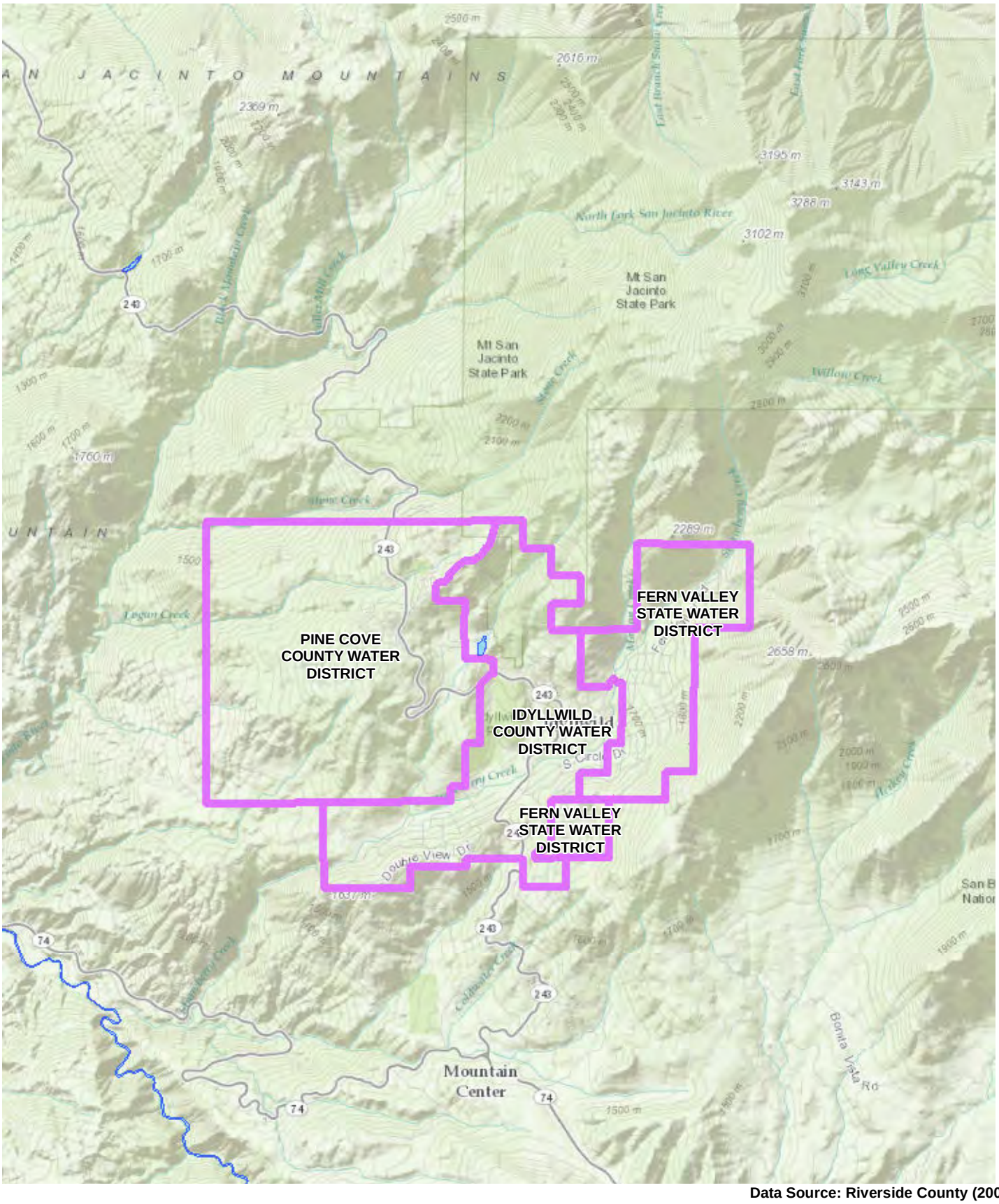
Water District	Average[1] Water Production (AFY)			Average Water Usage (AFY)				Projected Average Water Demand (2020) (AF)
	Groundwater	Surface Water	Total	Resi. & Commerc.	Other Usages[2]	Storage & Unacct.[3]	Total	
PCWD	121.7	NA	**122**	109.3	NA	12.4	**121.7**	**144.1**
IWD	309	137.2 [4]	**308.7**	273.6	9.7	7.3	**290.6**	**294.9**
FVWD	55.7	113.5	**169.2**	134.6	NA	34.6	**169.2**	**204.1**

Key: AFY = acre-feet per year NA = not applicable

Footnotes:

1. Based on roughly 10-year average (1993-2003).
2. Sewer plant, office, fire and water-line flushing uses.
3. Storage, system losses and other unaccounted for water.
4. Net stream diversion. (Note: All water distributed by IWD is pumped from its groundwater wells. However, the district has the right to divert surface waters and to store up to 40 AFY in Foster Lake, IWD's reservoir.)

Source: San Jacinto Mountain Area Water Study Agency, Water Resources Management Plan, 2005, Tables 1.2-1.4, pp 5-8.



Data Source: Riverside County (2009)

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Mountain Water Districts, as indicated

Figure 4.19.31

SERVICE AREA BOUNDARIES OF MOUNTAIN WATER DISTRICTS

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In general, water quality within the San Jacinto Mountains tends to be very good, according to the WRMP. The water tends to be very 'soft' due to its sodium and calcium bicarbonate levels. Exceptions, however, occur for Saunders Meadow and Dutch Flats, where IWD records indicate elevated nitrate and iron/manganese levels, respectively. Outside of these areas, occasional 'spikes,' short-term increases, in iron or manganese concentrations were also noted, but are not considered relevant to the supply's overall water quality.

Table 4.19-BD: San Jacinto Mountain Area Water Demand Summary

Water District	Projected Annual Water Demand* (AF)				Projected Demand 2020
	2005	2010	2015	2020	
FVWD	135.6	158.2	173.0	188.3	204.1.1
IWD	253.6	279.9	284.4	289.7	294.9
PCWD	111.1	133.0	136.7	140.4	144.1

*Does not include storage and unaccounted water.
Source: San Jacinto Mountain Area Water Study Agency, Water Resources Management Plan, 2005, Table 4.2, page 49.

c. Mountain Water Supply Reliability

In the WRMP, projected water demand requirements for each district for 2020 were calculated using recorded unit water demand values, rather than the typical gallons per day. This is necessary because the resort nature of the region means usage rates change seasonally. Seasonal occupancy tends to be highest during the summer months (June through September), with July and August seeing peak water demand. Accordingly, water demand increases over the next decade are expected to be due mainly to conversion of part-time occupancy to full-time residences, growth in tourism activity and a small population increase. Recorded water use data indicates that approximately 60% (330 AF) of the total water used by customers of the three water districts is used outside the home. This is despite the fact that many residents of the mountain communities do not irrigate their properties, depending on the type of landscaping present, and even that irrigation typically is only used between May and September of each year.

Table 4.19-BE: San Jacinto Mountain Area Peak Water Supply and Demand

Water District	CDP Average-Day Supply [1]		Total Supply	CDP [2] Peak-Day Demand	Projected CDP Peak-Day Water Demand			Esti. Supple. Flow [3]	Avail. Stored Supply [4] (days)
	GW	SW		Esti. 2002	2010	2015	2020	2020	2020
PCWD	123	NA	**123**	162	191	196	228	105	16
IWD	235	NA	**235**	314	348	356	362	127	14
FVWD	150	0	**150**	148	199	216	235	85	35

Key: GW = groundwater SW = surface water NA = not applicable
Footnotes:
1. Average-day supply during peak month, in gallons per minute (gpm).
2. CDP = critical dry period (precipitation of 16 inches per year or less).
3. Estimated supplemental flow required from storage or additional supply, in gpm.
4. Days of available water supply from domestic storage.
Source: San Jacinto Mountain Area Water Study Agency, Water Resources Management Plan, 2005, Table E-1, page 11.

As shown in Table 4.19-BE, above, with current water supply facilities, all three districts could experience a water supply shortfall in trying to meet existing and projected peak-day water demand during a critical dry period. The amounts listed under "Estimated Supplemental Flow" in the table would offset the shortfall, but with the potential to drawdown existing groundwater levels, for which the total aquifer capacity is not fully known. To lessen the potential severity of such a shortfall, all three districts have various demand management measures and water conservation programs that could be implemented as part of each district's water shortage emergency plans. The districts also have ongoing conservation programs, incentives (rebates, for example) and educational materials to foster conservation even during non-drought years.

According to the WRMP, groundwater data indicate that the region is not in an overdraft condition during NPPs. For CDPs, there is not sufficient data to determine if the local groundwater becomes overdrafted. However, the WRMP states (on page 13) that it appears that, "Short-term overdraft during critical dry periods would be compensated for during normal precipitation periods. Thus, it is assumed that the [San Jacinto Mountains] study area can sustain the water demands of district and private pumping." That is, any shortages would generally be due to insufficient supply infrastructure (pumping and/or storage), rather than water deficits, *per se*.

For this reason, the WRMP indicates that supplemental water supply (to solve the shortage potential indicated in Table 4.19-BE) could be obtained in the form of groundwater produced by new (additional) wells. The WRMP estimates that in order to meet 2020 demand, the three districts would need to construct additional groundwater wells and would need more than 1.5 million additional gallons of storage capacity to provide an additional seven days of water supply for projected CDP peak-day demand.

In all, the WRMP concludes that water supplies are sufficient to meet normal year demands, including peaks, but that infrastructure improvements (particularly additional wells and storage capacity) are needed to fully ensure adequate peak demand supplies during critical dry periods (i.e., droughts). It also concludes that it appears the area's recharge rates are probably sufficient to adequately replace any short-term groundwater drawdown that would occur during droughts due to increased (but temporary) reliance on groundwater to meet supply shortfalls. As such, sufficient water supplies would be adequate to meet all demand conditions through at least 2020 (and likely further, due to currently slow growth conditions). However, throughout the report, it is stressed that there is a lack of conclusive water basin data necessary to fully verify these assumptions.

I. Areas Not Served By Existing Water Purveyors

A number of water districts within Riverside County serve their customers using only groundwater and/or surface water. These include all of the water districts in the centrally located mountains San Jacinto Mountains in Riverside County: the Pine Cove, Idyllwild and Fern Valley water districts, for which their elevation makes importing water economically impractical at present. At the far eastern edge of Riverside County, the City of Blythe solely uses groundwater and the Palo Verde Irrigation District provides non-potable agricultural water, both derived from the Colorado River. These districts are both fairly isolated geographically and served by the major water source that is the Colorado River. Lastly, several districts in western Riverside County, the Jurupa and Rubidoux Community Service Districts (CSDs), in particular, also rely only on groundwater. The rest of Riverside County's water districts serve their customers with imported water (SWP and/or Colorado River), often-times supplemented with local groundwater. This is particularly true of districts in which the local groundwater basins are in overdraft condition or have water quality issues. These districts are all discussed above.

Beyond the territories served by formal water agencies, where no piped water supplies are available, individual properties or developers must provide their own water. In most cases, this would be from existing groundwater basins, unless unavailable or infeasible (e.g., due to topography, geology, etc.). The proposed project, GPA No. 960, includes a number of land use changes in areas outside of established water districts or other water purveyors (mutual water companies and other private providers). These are discussed here.

1. Service Needs

As outlined in the preceding sections, most of Riverside County's developed regions are served by water agencies providing wholesale and/or retail water supplies to municipal (residential, commercial, etc.) users, industrial/institutional users, agricultural users and others. Such customers receive their water supplies through piped connections to the provider's infrastructure. Even within these water districts, however, some water users

may obtain their water from local sources via private wells or other private ventures. Typically such private wells either predate formation of the area's agency or lie in regions not yet served by agency supply lines. The water agency discussions presented previously, however, take into account the effect of such private wells, as well as any other appropriative water rights, on their district's supplies and future reliability. See discussions above for specific districts.

In regions of Riverside County not served by a public water provider, water supplies are obtained either from private, onsite (self-serving) wells or from connection to a small-scale water provider, either a public or private entity, that obtains and distributes water supplies to its local customers. As an example, a local water company might be formed to provide water to a golf course and surrounding vacation homes or to serve a rural mobile home park where no public water provider is available. Water supplied by such providers typically comes from groundwater basins, usually underlying the area served. Water may also be supplied from surface water by right. However, due to the semi-arid Southern California climate and hydrology, reliance on such sources are not very common. Lastly, a water company may also obtain (import, essentially) water from a public water provider, for example, if the company lies within the agency's service area.

2. Additional Water Demand

Thus, in areas outside of established public water providers, any new development would rely on private (typically onsite) well water. This would be the case for any future development accommodated by GPA No. 960's proposed General Plan changes. Thus for the portions of GPA No. 960 with known spatial components that are located *outside* of a water district or provider, the underlying groundwater basin would be the typical source for water. See Table 4.19-BF (Groundwater Basins Underlying Non-Served Areas, below, for a summary of this data. (See Section 4.19.7.B for a discussion on the methodology used.) The groundwater information presented here addresses the groundwater basins, as defined by the California DWR, expected to serve as the water sources used for such private wells. See Section 4.19.4.B for descriptions of each of these groundwater basins.

In Table 4.19-BF, it should be noted that it includes the areas of proposed changes around the Blythe Municipal Airport in unincorporated Riverside County. This is necessary because these areas have no municipal water supplier; the Palo Verde Irrigation District only provides non-potable agricultural water. When no retail water supplier is available, development must 'self-serve,' meaning pump water directly onsite or arrange for water from a nearby private source. For estimated effects of development on groundwater in the area, see the discussion under "City of Blythe" earlier in this section.

Table 4.19-BF: Groundwater Basins Underlying Non-Served Areas

Groundwater Basin (Areas Not Served By Water Agency[1])	Basin: See WD[2]	Conserved (acres)[3]	Neutral (acres)[3]	Potent. Affect (acres)[3]	Total Area (acres)[3]
South Coast Hydrological Region					
8-2.01 Chino	JCSD	0	0	261.4	**261.4**
8-2.03 Riverside-Arlington	RCSD	0.3	0	530.3	**530.6**
8-2.08 San Timoteo	SBVMWD	2,558.1	0	445.3	**3,003.4**
8-2 Upper Santa Ana Valley GWB Subtotal	---	***2,558.4***	***0***	***1,236.9***	***3,795.3***
8-4 Elsinore GWB	EVMWD	3.0	0	509.2	***512.1***
8-5 San Jacinto GWB	EMWD	71.6	6,796.2	480.7	**7,348.5**
9-5 Temecula Valley GWB	RCWD	1,255.2	4,349.1	585.7	**6,190.0**
9-6 Coahuila Valley	NONE[5]	0	11,377.8	7.8	**11,385.6**
All Other Basins Subtotal	---	***1,329.8***	***22,523.0***	***1,583.3***	***25,436.1***
South Coast Region Total	---	**3,888.2**	**22,523.0**	**2,820.3**	**29,231.5**

Colorado River Hydrological Region					
7-21.01 Indio	CVWD	----	0	1,752.2	**1,752.2**
7-21.02 Mission Creek	CVWD	----	0	42.6	**42.6**
7-21.03 Desert Hot Springs	CVWD	----	98.4	259.6	**358.0**
7-21.04 San Gorgonio Pass	MSWD	----	0	138.5	**138.5**
7-21 Coachella Valley Subtotal	**---**	***NA[4]***	***98.4***	***2,192.9***	***2,291.3***
7-6 Pinto Valley	NONE[5]	----	0	4.7	**4.7**
7-26 Terwilliger Valley	NONE[5]	----	6,138.5	0	**6,138.5**
7-31 Orocopia Valley	(CVWD)	----	666.4	737.8	**1,404.2**
7-32 Chocolate Valley	(CVWD)	----	0	436.2	**436.2**
7-39 Palo Verde Mesa	Blythe	----	0	1,135.8	**1,135.8**
All Other Basins Subtotal	**---**	***NA[4]***	***6,804.9***	***2,314.5***	***9,119.4***
Colorado River Region Total	**---**	**NA[4]**	**6,903.3**	**4,507.3**	**11,410.7**
Grand Total	**---**	**3,888.2**	**29,426.4**	**7,327.6**	**40,642.2**

Footnotes:
1. Only areas not served by existing water districts/agencies included here because areas served by a water agency receive water based on a mix of imports and groundwater not quantifiable by acreage. See applicable water agency descriptions for details on specific water sources for agencies.
2. See listed water agency for basin information; parentheses indicate nearest water agency for non-shared basins.
3. All data rounded to nearest tenth-acre; due to rounding, totals may not sum precisely.
4. Not applicable: the RCA-acquired lands included in GPA No. 960 are only located within western Riverside County.
5. No water agencies also use or are located near this basin.

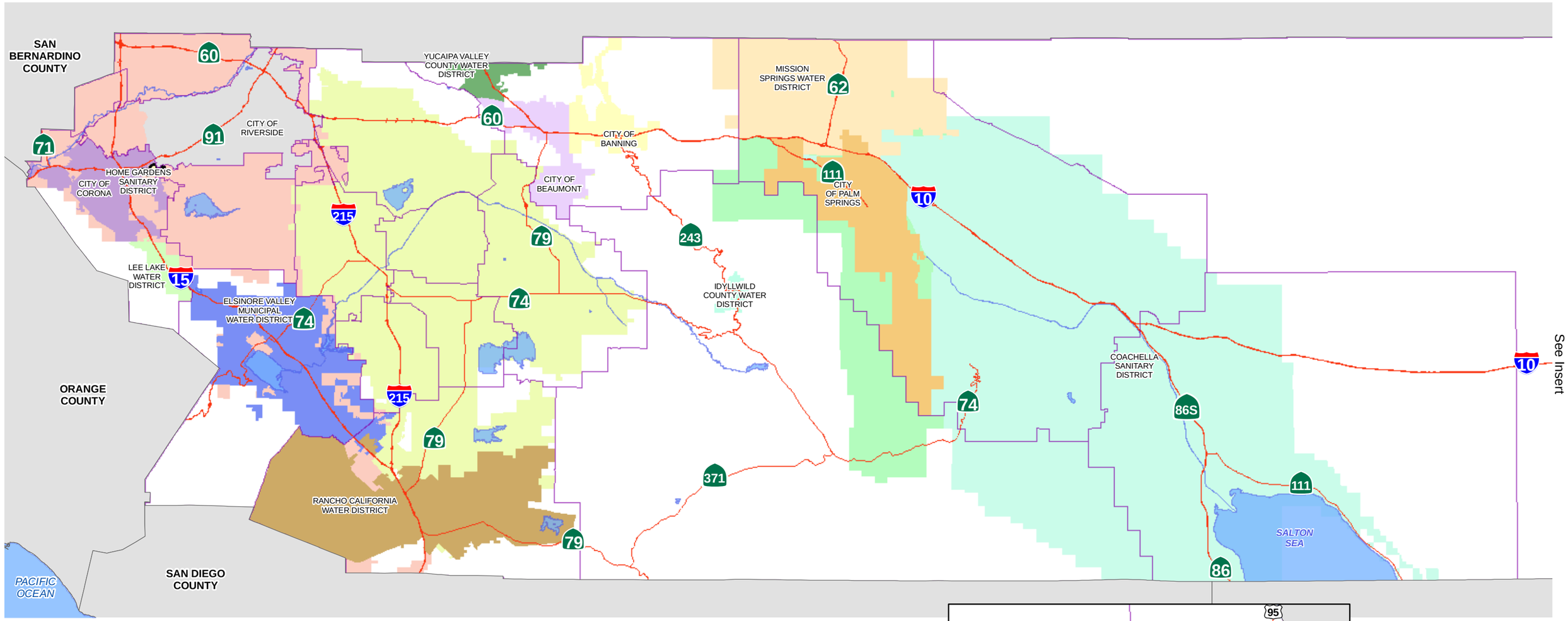
Source: DWR, Bulletin 118 Update, 2005. Project data per application; Riverside County GIS data and analysis, 2011.

J. Local Sewer and Wastewater Treatment Providers

Sewage is generated anywhere humans live, work or visit. To protect human health, as well as the environment (particularly water quality), sewage must always be collected and treated in some fashion. Most simplistically, sewage may be captured in holding tanks which are later collected and transported for disposal into a municipal (sanitary) sewer system. Examples include port-a-potties, RVs, boats and catering trucks.

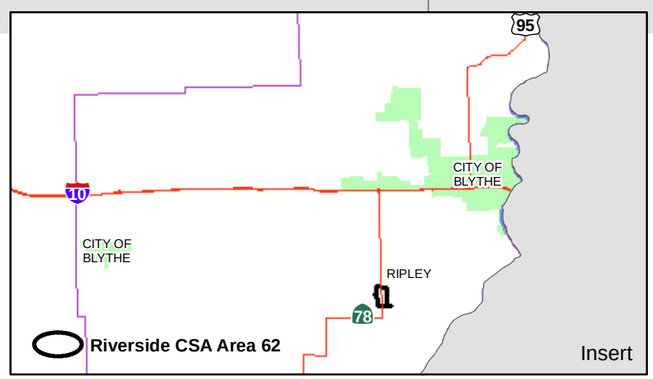
All habitable structures in Riverside County are required to provide some form of sanitary facilities (e.g., toilet and washroom) with an appropriate means to safely collect and dispose of the sewage that result. For fixed locations, such as homes, businesses, schools, offices, etc., in most urban and suburban areas sanitary sewer connections convey wastewater to wastewater treatment facilities that are typically operated by public entities (cities, water districts, sewer districts, community service districts, etc.) or, occasionally, as smaller-scale neighborhood or community facilities. Because of its close connection to water supply, many water districts also handle sewer (wastewater) services, its collection and/or treatment, as well. The water that results from wastewater treatment can be reclaimed, recycled or reused, depending on the type of treatment it receives and the water needs of the region, otherwise it is discharged into live streams where it is then used downstream for beneficial uses and eventually flows to the ocean.

A variety of information regarding wastewater is also included under the various local agency descriptions presented in Sections 4.19.4.E through 4.19.4.I. Table 4.19-BG (Sewer and Wastewater Treatment Providers in Riverside County) lists the agencies that provide sanitary sewer collection and/or wastewater treatment. Figure 4.19.32 (Wastewater and Sewer Providers in Riverside County) shows sewer-providing districts. Table 4.19-BH (Wastewater Treatment Facilities in Riverside County) lists the wastewater treatment facilities in Riverside County (regardless of jurisdiction). It should be noted that some agencies only provide sanitary sewer services for portions of their service areas, that is, their sewer service areas may be different than their water service areas. In locations without sanitary sewer connections, septic systems (OWTS, see below) or storage and offsite transport must be used instead. And, in some cases, locations that were on septic systems prior to sanitary sewers being made available may not yet have connected to the sanitary system.



- City of Banning
- City of Beaumont
- City of Blythe
- City of Corona
- City of Palm Springs
- City of Riverside
- Coachella Sanitary District
- Elsinore Valley Municipal Water District
- Home Gardens Sanitary District
- Idyllwild County Water District
- Lee Lake Water District
- Mission Springs Water District
- Rancho California Water District
- Yucaipa Valley County Water District
- Coachella Valley Water District
- Desert Water Agency
- Eastern Municipal Water District
- Western Municipal Water District
- Highways
- Area Plan Boundary

Agency boundaries shown are not necessarily equivalent to areas provided with sewer collection/treatment services.



Data Source: Riverside County (2012)

Figure 4.19.32

December 16, 2013

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RIVERSIDE COUNTY PLANNING DEPARTMENT

SEWER AND WASTEWATER TREATMENT PROVIDERS IN RIVERSIDE COUNTY

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Generally synonymous with sewage, 'wastewater' includes sewage and all other waste substances associated with human habitation, or of human or animal origin, as well as any from producing, manufacturing or processing operations. This is in contrast to stormwater and urban runoff (discussed under Section 4.19.2.D) which consists of water from precipitation events (rain, snowfall, snowmelt, etc.), irrigation and the like, which can generally be discharged into surface waters with little or no intensive treatment if not polluted. For municipal wastewater treatment facilities, wastewater is treated in up to three levels (processed sequentially) as follows:

Primary: Sewage solids are removed, generally through sedimentation, with no biological oxidation. Primary effluent has only limited reuse allowed for surface irrigation of orchards and some crops.

Secondary: Treatment adds further removal of organic materials through biological processes. Reuse is allowed, including for groundwater recharge and a broader array of irrigation applications. This level is the one typically achieved for most wastewater effluent.

Tertiary: This level adds chemical flocculation (removal of minute solids), sedimentation and filtration. Varying degrees of disinfection are applied through various means. Tertiary-treated water reuse is permitted for some uses involving potential body-contact, including irrigation of golf courses and parks, as well as in recreational lakes.

Onsite Waste Treatment Systems (OWTS): The third type of sewage facility is septic systems (or, more properly, onsite waste treatment systems, OWTS) which are typically built in the ground and serve individual sites or sometimes neighborhoods or small communities. These types of systems serve to split the wastewater into two portions. Solids generally settle out (i.e., into septic tanks) and must eventually be pumped out and disposed of into a sanitary treatment system (WWTF or otherwise). The liquid, on the other hand, is generally allowed to percolate into the surrounding area through leach fields and similar methods. (It is for this reason that septic systems are not permitted in all areas; the soils upon which it is constructed must be capable of percolating water. Solid bedrock, for example, does not.)

The purpose of a septic system is to effectively accept and treat liquid wastes from a residence, commercial or industrial facility, and to prevent biological and nutrient contaminants from polluting water supplies and waterbodies. Most of this treatment happens in the soil below the absorption field. The physical and chemical properties of the soils combine with microscopic organisms to decompose or prevent movement of contaminants.

In soil not saturated with water, biological contaminants (bacteria and viruses) are usually absorbed and rendered inactive within a few feet of the absorption field. Some nutrients, on the other hand, can travel much greater distances, depending on the type of soil, the amount of concentration of waste and the age of the system. Loam and clay soils, for example, have a greater long-term ability to absorb nutrients and prevent them from moving through the soil than do sand and muck soils. In their journey, nutrients or biological contaminants that encounter soil saturated with water can move much greater distances, in some instances, as much as several hundred feet.

If not located, constructed and operated properly, septic tanks can contaminate drinking water sources with pathogens or nutrients. A single failing septic tank system can pose an infection risk and even an immediate health threat if the infectious agent is not controlled by water treatment. The risk from nutrients is related less to individual septic tank systems than to the cumulative effects of many systems. The nutrient load from one septic tank system is unlikely to be significant. On average, a human excretes 4 to 5 kilograms of nitrogen wastes per year, about half of which will be released into the soil. However, adding new systems in an area that already has

high nutrient levels may trigger problems. Nutrients can build up in the soil and groundwater over time to reach unhealthy levels or encourage the growth of algae, making water treatment more expensive.

Table 4.19-BG: Sewer and Wastewater Treatment Providers in Riverside County

Operator	Only Partial Service	Collection	Wastewater Treatment	# (and Type) of WWTFs[1]
Coachella Valley WD		X	X	6 (all sec, 2 tert)
Desert Water Agency		X	X	1 (tert.)[2]
Eastern Muni. WD		X	X	4 (all tert)
Elsinore Valley Muni. WD	X	X	X	2 (tert), + EMWD[5]
Idyllwild WD	X	X	X	1 sec
Lee Lake WD		X	X	3 (1 tert, 2 NS)
Mission Springs WD		X	X	2 (both sec)
Rancho California WD		X	X	1 (tert), + EMWD[5]
Western Muni. WD		X	X	2 (tert, sec)[3]
Yucaipa Valley WD		X	X	1 (adv tert)
Riverside CSA Area 62 (Ripley WWTF)	X	X	X	1 (sec)
Coachella Sanitary District (City of Coachella)		X	X	1 (sec)
Valley Sanitary District		X	X	1 (sec)
Western Riv. Co. Regional Wastewater Authority[4]			X	1 (tert)[4]
City of Banning		X	X	1 (sec)
City of Beaumont		X	X	1 (tert)
City of Blythe		X	X	1 (NS)
City of Corona		X	X	1 (tert)
City of Palm Springs		X	X	1 (sec) [2]
City of Riverside		X	X	2 (1 sec, 1 tert)
Beaumont-Cherry Valley WD	X	X		*Beaumont (WWTP)*
Home Gardens Sanitary District		X		*WMWD (WRCWTP)*
Jurupa CSD		X		*WMWD (WRCWTP)*
Lake Hemet Municipal WD		X		*EMWD (SJV)*
Rubidoux CSD		X		*WMWD (WRCWTP)*[5]
West Valley WD		X		*City of Rialto*

Key: WD = Water District CSD = Community Services District CSA = County Service Area ns = not specified

Footnotes:

1. Wastewater Treatment Facility types: sec = secondary, tert = tertiary, adv = advanced. For agencies not providing their own treatment, the agency treating the wastewater (and the facility, if known) is in italics.
2. Per a 1988 agreement, Palm Springs provides primary and secondary treatment; DWA provides tertiary.
3. In addition to WMWD's two wastewater treatment facilities (tert. and sec.), wastewater treatment services are also provided by the City of Riverside, EMWD and RCWD for certain portions of WMWD's service area.
4. A joint powers agency responsible for collecting, treating and reclaiming member agencies' wastewater. Members are City of Norco, Home Gardens Sanitary District, Jurupa CSD, WMWD and Santa Ana Water Project Authority. The WRCRWA plant is located within the JCSD service area and is operated by WMWD.
5. Facility within this agency's service area, but operated by the agency indicated.

Source: US EPA, Clean Watersheds Needs Survey, Riverside County, 2008. UWMPs and other documents, as listed throughout Section 4.19.4, as well as Table 4.19-A.

Table 4.19-BH: Wastewater Treatment Facilities in Riverside County

Facility Name	Operator	Total Flow (in MGD)[1]			Watershed Location	Flow Types[3]	Treat. Type[4]
		Existing	Present[2]	Projected[2]			
Palm Springs WWRF	Palm Springs	8.29	10.9	16.5	Salton Sea	M	SEC
Plm. Des. Country Club WWTF	CVWD	0.31	0.5	0.5	Salton Sea	M	SEC
Palm Desert WWRF	CVWD	5.38	10	10	Salton Sea	M	SEC
North Shore WWRF	CVWD	0.03	0.18	0.18	Salton Sea	M	SEC
Blythe Regional WWTF	City of Blythe	1.5	2.4	2.4	Imp'rl Resrv	M	SEC
Salton City WWTF	CVWD	0.08	0.1	0.1	Salton Sea	M	SEC
Alan Horton WWTF	MSWD	1.2	2.5	2.5	Salton Sea	M	SEC
Coachella WWTP	Coachella SD [City]	2.1	2.4	6	Salton Sea	M	SEC
Valley SD WWTF	Valley SD	4.36	7.5	7.5	Salton Sea	M, I	SEC

Facility Name	Operator	Total Flow (in MGD)[1]			Watershed Location	Flow Types[3]	Treat. Type[4]
		Existing	Present[2]	Projected[2]			
Banning WWTF	City of Banning	2.15	3.6	5.1	Salton Sea	M, I	SEC ADV
Ripley WWTF	Riverside CSA 62	0.07	0.08	0.08	Santa Ana	M	SEC
Desert Crest WWTF	CVWD	0.18	0.186	0.186	Salton Sea	M	SEC
Blythe Airport	City of Blythe	0.003	0.003	0.003	Imp'rl Resrv	M	SEC
Riverside Regional WQCP	City of Riverside	33.5	40	49.4	Santa Ana	M	ADV
San Jacinto Regional WRF	EMWD	8.72	11.11	18.19	San Jacinto	M, I, GW	SEC ADV
Moreno Vlly Regional WRF	EMWD	10.21	12.01	12.01	San Jacinto	M, GW	ADV
Sun City WWTF (Abandoned)	EMWD	1.7	1	0	San Jacinto	M, I	SEC
Rancho Calif. WWTF	EMWD	3.51	2	2	San Jacinto	M, I	SEC
Perris Valley Regional WRF	EMWD	11.25	11.11	30.31	San Jacinto	M, I, GW	ADV
Beaumont WWTF	City of Beaumont	1.1	1.4	1.4	Salton Sea	M	SEC
March ARB WWTF	WMWD	1.0	3.0	5.0	San Jacinto	M, I, GW	SEC ADV
Indian Hills WWTF (Abandoned)	JCSD	0.21	0.8	0	Santa Ana	M	ADV
Western Riv. Co. Reg. WWTP	WMWD	3.0	8.0	8.0	Santa Ana	M	ADV
Corona WWTF #1	City of Corona	9.007	14.5	14.5	Santa Ana	M, I	ADV
Corona WWTF #2	City of Corona	3.005	3.0	3.0	Santa Ana	M, I	ADV
Corona WWTP #3	City of Corona	0.9	1.0	3.0	Santa Ana	NS	SEC
Idyllwild Sewer Treat. Plant	SJMA- WSA[5]	0.09	0.2	0.61	Santa Ana	M	SEC
Railroad Canyon WWTP	EVMWD	1.15	1.2	1.9	San Jacinto	M	SEC
Alberhill WWTP	EVMWD	0	0	3	Santa Ana	M	SEC
Lake Elsinore Reg. WWTP	EVMWD	6.9	8.0	20.0	San Jacinto	M	ADV
Temecula Valley Reg. WRF	EMWD	11.52	12.13	22.23	Santa Marg.	M, I, GW	ADV
Lee Lake WD WWTP	LLWD	0.31	0.9	1.35	Santa Ana	M	ADV

Key: WW = Wastewater
WRF = Water Reclamation Facility
WQCP = Water Quality Control Plan
CSD = Community Service District
TF = Treatment Facility
TP = Treatment Plant
RF = Reclamation Facility
MWD = Municipal Water Dist.
WD = Water District
SD = Sanitary District
CWD = County Water Dist.
CSA = Community Svc.s Dist.

Footnotes:
1. MGD = Million gallons per day.
2. Present (current) and projected (future) design capacities.
3. Flow types: M = Municipal; I = Industrial; GW = Infiltration from groundwater; NS = Not Specified.
4. Effluent treatment types: ADV = Advanced Treatment; PRIM = primary; SEC= Secondary; TERT = Tertiary. Parentheses indicate treatment type after proposed upgrade.
5. San Jacinto Mountains Area Water Study Authority, a joint-powers agency consisting of Idyllwild, Fern Valley and Pine Cove Water Districts. Operated by Idyllwild Water District.

Source: US EPA, Clean Watersheds Needs Survey, Riverside County, 2008.

4.19.5 Policies and Regulations Addressing Water Resources

Water resources in California are regulated at both the state and federal level. In addition, and as identified throughout this analysis, local laws and regulations in the form of ordinances, resolutions, policies, procedures and other forms of governance also can and do apply to water resources. Key water laws and regulations are discussed below. This information is intended as a brief overview of current regulations for water and wastewater systems, and is intended to provide basic information for those who may be unfamiliar with the complex and detailed regulatory requirements.

Numerous federal, state and local laws and agencies regulate water and wastewater. Some of these state and regional plans and policies also build upon the federal legislation. In other instances, federal acts have established broad goals, which are to be achieved through implementation at the state or local level. Finally, there are some regulations that are unique to California. Oft-times there is considerable, and confusing, overlap among the agencies, regulations and associated acronyms. The following discussion identifies a few of the major federal, state and local regulatory bodies and requirements for water programs.

A. Federal Laws and Regulations

1. Federal Water Pollution Control Act of 1972 (aka the Clean Water Act)

The federal Water Pollution Control Act is more commonly known as the 'Clean Water Act' (CWA). With its amendments, the CWA is the principal law governing the nation's streams, lakes and estuaries. It contains regulatory provisions that impose progressively more stringent requirements on industries and cities to reduce pollution and meet the goal of zero discharge of pollutants. The CWA established as national goals the elimination of pollutant discharges to the navigable waters and the assurance that all navigable waters would be fishable and swimmable. The U.S. Environmental Protection Agency (EPA), which is charged with chief CWA implementation, also established the regulatory standards listed below. Other applicable sections of the CWA are also listed below.

- No one has the right to pollute the navigable waters of the United States. Dischargers are required to obtain permits.
- Permits shall set limits on the concentration of the pollutants being discharged. A violation of the limits carries a penalty of fines or imprisonment.
- The best technology available shall be used to control the discharge of pollutants.

a. CWA Section 303(d) – Impaired Waters List and Total Maximum Daily Loads

This section of the CWA requires each U.S. state to identify waters that do not meet water quality standards after application of technologically based controls. These applicable water quality standards include designated beneficial uses and adopted water quality objectives. Waterways are identified as designated 'water quality-limited segments' and are prioritized for purposes of developing total maximum daily loads (TMDLs) and establishing load and waste load allocations. The TMDL is the sum of waste load allocations for point sources of pollution and load allocations for non-point sources of pollution, plus natural background sources. Essentially the TMDL is the amount of a pollutant that can be discharged into a water body and still maintain water quality standards. The resultant '303(d) list' includes the size of the waterbody, the sampled pollutants affecting designated beneficial

uses, the source of the pollutant and the water body's priority status with regard to developing TMDLs, which serve as limits on discharged pollutants in order to overcome the water quality impairment. Water quality impairment issues affecting Riverside County water bodies are discussed in Section 4.19.2.C.

b. CWA Section 303(c)(2)(B) – National Toxics Rule

In November 1991, the U.S. EPA proposed chemical specific, numeric criteria for priority toxic pollutants, including dioxin and pentachlorophenol, necessary to bring all states into compliance with the requirements of Section 303(c)(2)(B) of the Clean Water Act. The requirement, known as the National Toxics Rule (NTR), established ambient human health criteria for 57 priority toxics, ambient aquatic life criteria for 23 priority pollutants and a compliance schedule.

Implementation of the NTR lagged for several years due to court challenges on the human health criteria for dioxin and pentachlorophenol but is now in effect. In 2000, the California SWRCB adopted a policy for implementation of the NTR that established implementation procedures for three categories of priority pollutant criteria or water quality objectives. These are: (1) criteria promulgated by EPA in the NTR that apply in California; (2) criteria proposed by the EPA in the California Toxics Rule; and, (3) water quality objectives contained in RWQCB water quality control plans (basin plans).

c. CWA Section 319 – Non-Point Source Management Program

Section 319 regulates non-point source pollutants, which enter water from diffuse sources. Non-point source pollutants are often chemicals from lawns, automobile residues or urban runoff that enter the wastewater stream and water supply in large quantities and sudden surges, largely due to storms. Although California adopted a Non-point Source Management Plan (NPSMP) in 1988, cities and counties have only recently begun adopting local implementing rules and regulations. Because of its widespread nature, control of this type of pollution has proven to be difficult and is expected to require costly upgrades to existing facilities and permits, particularly for wastewater facilities with high rates of infiltration.

d. CWA Section 401 – State Water Quality Certification Program

Prior to the issuance of federal CWA permits, the SWRCB, through its nine regional boards, certifies the quality of surface waters pursuant to Section 401 of the CWA. Section 401 requires that activities and facilities that would discharge pollutants into waters of the U.S. must obtain a state water quality certification permit proving that the activity complies with all applicable water quality standards, limitations and restrictions.

e. CWA Section 402 – National Pollutant Discharge Elimination System

In 1972, the CWA was amended to prohibit the discharge of pollutants to waters of the U.S. unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit program focuses on point source discharges from municipal wastewater plants, but also applies to industrial discharges, construction site dewatering discharges and stormwater discharges to surface waters. Municipalities, publicly owned treatment works and most industries in the U.S. are now required to obtain an NPDES permit for discharges, including stormwater runoff. NPDES permits regulate discharge of "pollutants from point sources to waters of the United States" to ensure that the discharges do not adversely affect surface water quality or beneficial uses. In addition to CWA Section 402, NPDES permits are authorized by CWC Section 13370 and Chapters 3 and 4 of CCR Title 23. The responsibility for issuing NPDES permits in California has been

delegated to the nine Regional Water Quality Control Boards, subject to review and approval by the Regional Administrator (US EPA Region IX, San Francisco).

f. CWA Section 404 – Permits for Dredged or Fill Materials

CWA Section 404 permits are issued by the U.S. Army Corps of Engineers (ACOE) for the placement of dredged or fill materials (essentially, soil) into waters of the U.S., including wetlands. 'Waters of the U.S.' are navigable waters, tributaries thereto and adjacent wetlands, and other waters where their degradation or destruction could affect interstate of foreign commerce. The CWA Section 404 permitting process is designed to ensure that the chemical, physical and biological functions of the waters are protected. It includes mandatory measures to avoid, minimize and mitigate impacts. Further, by Executive Order, these permits are to ensure "no net loss" of wetlands within the U.S.

2. Safe Drinking Water Act

Drinking water quality is regulated under the authority of the federal Safe Drinking Water Act of 1974 (SDWA) (42 USC Section 300(f) *et seq.*) and associated regulations implementing that statute. The federal act authorizes the U.S. EPA to establish minimum standards to protect tap water from potentially harmful contaminants and requires all owners or operators of public water systems to comply with these primary (health-related) standards. The 1996 amendments to SDWA require that the EPA consider a detailed risk and cost assessment, and best available peer-reviewed science, when developing these standards.

The federal law establishes National Primary Drinking Water Regulations (NPDWRs or primary standards), which are legally enforceable standards that apply to public water systems. Primary standards protect public health by limiting the levels of contaminants in drinking water. National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water.

In 1996, the SDWA was amended to require states to identify potential contamination threats and determine the security of drinking water sources. The amendment also required that qualified professionals operate water systems, although California had already established a certification program. Other requirements include the following:

Consumer Confidence Reports: Since 1999, public water systems must provide their customers with an annual water quality report providing data about the quality of the local drinking water, compliance with EPA's safety standards, sources of any contaminants, and potential health risks. The annual reports are included with water bills for systems with more than 10,000 customers; for smaller systems the information can be posted at a central location or published in local newspapers.

Water Conservation Plans: In 1998, the EPA issued guidelines for water conservation plans for public water systems. Now states may require a water system to submit a water conservation plan consistent with the EPA guidelines as a condition of receiving a loan.

Proposed Arsenic Standard: The EPA established the maximum allowable limit for arsenic in drinking water from 50 parts per billion (ppb) down to 5 ppb. Arsenic can produce a variety of health-related problems, including cancer, cardiovascular disease, neurological damage, and diabetes. Many water supplies in California are

significantly higher than the 5 ppb level and would not meet the proposed standard without additional (and possibly very costly) treatment.

3. Bio-Terrorism Preparedness and Response Act

This act addresses the security of water and wastewater systems. It requires every community water system that serves a population of greater than 3,300 persons to conduct a vulnerability assessment, certify and submit a copy of the assessment to EPA, prepare or revise an emergency response plan that incorporates the results of the vulnerability assessment and certify to EPA, within six months of completing the vulnerability assessment, that the system has completed or updated their emergency response plan. Basic elements of a vulnerability assessment include: a characterization of the water system (i.e., mission and objectives); identification of avoidable adverse consequences; determination of critical assets that might be subject to terrorism; assessment of the probability of acts of terrorism occurring; evaluation of existing countermeasures; and development of a plan for reducing risks.

B. State Laws and Regulations

The California Water Code (CWC) is the principal set of regulations governing water supply and use in the state. The Code controls water rights, the construction and management of dams and reservoirs, flood control, conservation, development and utilization of state water resources, water quality protection and management, plus management of water-oriented agencies. The water quality provisions set forth in the CWC have been written to supplement provisions of the California Health and Safety Code, Public Resources Code, Fish and Game Code, Food and Agriculture Code, Government Code, Harbors and Navigation Code, CEQA and California Endangered Species Act. Other laws within the CWC or other state statute include the following:

1. California Porter-Cologne Water Quality Control Act of 1970

Division 7 (Sections 13000-14958) of the CWC is the Porter-Cologne Water Quality Control Act of 1970. This act regulates water pollution within California by protecting water quality and beneficial uses of all state waters. The Porter-Cologne Act is administered regionally by the State Water Resources Control Board and Regional Water Quality Control Boards (RWQCB). While administration occurs at a regional level, regulations are promulgated on a statewide level to provide consistency. Aspects of the Porter-Cologne Act are similar to federal water quality regulations and programs.

The SWRCB and regional offices have broad powers and implement the CWA through the adoption of plans and policies, the regulation of discharges, the regulation of waste disposal sites and the cleanup of hazardous materials and other pollutants. It also requires reporting of unintended discharges of any hazardous substance, sewage, or oil/petroleum product. The RWQCBs regulate discharges of water to land through the issuance of waste discharge requirements and discharges to surface waters through the NPDES permit program. The RWQCBs also prepares, implements and periodically updates their basin plans. Generally, basin plans designate beneficial uses of surface water and groundwater that should be protected, establish water quality objectives to protect beneficial uses and define an implementation program to meet water quality objectives. The RWQCBs also update the 303(d) list of impaired water bodies.

Among other things, the State Board oversees construction runoff control for projects disturbing 1 acre or more (or less than 1 acre, if part of a larger common plan of development or sale) and requires coverage under the General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 2009-0009-DWQ or an individual permit for the construction activity). Prior to commencing grading, the NPDES

construction stormwater permit also requires preparation (and implementation) of a Stormwater Pollution Prevention Plan (SWPPP) that identifies potential pollution sources, runoff controls or best management practices (BMPs) for construction and post-construction activities and monitoring.

2. California Safe Drinking Water Act

In addition to the federal Safe Drinking Water Act, drinking water quality is also regulated under the State Safe Drinking Water Act (California Health and Safety Code Section 116270 *et seq.*) and associated regulations. The California regulations follow the federal regulations in adopting either the National Primary Drinking Water Regulations (NPDWRs) or more stringent maximum contaminant levels (MCLs). An MCL is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are established for contaminants that affect health and are set as close as economically and technically feasible to applicable Public Health Goal (the drinking water contaminant level below which there is no known or expected risk to health, as set by the California Office of Environmental Health Hazard Assessment). (Alternatively, the 'maximum contaminant level goal,' MCLG, is used at the target for federal SDWA pollutants.) Secondary MCLs are set to protect the odor, taste and appearance of drinking water. Under the California SDWA, the California Department of Public Health is responsible for establishing MCLs.

3. CCR Title 22 - Recycled Water

Under CCR Title 22, the California Department of Health Services (DHS) and the local regional water quality control board regulate the use and quality of recycled water. The local RWQCB is the permitting authority and DHS regulates the health standards that apply to recycled water use in the state. Chapter 4 of CCR Title 22 establishes recycled water quality standards and treatment reliability criteria dependent upon the end use of recycled water to protect public health. Both secondary- and tertiary-treated wastewater can meet Title 22 standards, dependent upon the end use of the water. Utilization of recycled water for groundwater recharge is reviewed by DHS on a case-by-case basis.

4. California Urban Water Management Planning Act

Enacted in 1983, as amended, this law (CWC Sections 10610–10656) requires urban water suppliers to adopt water management plans every five years and submit those plans to DWR. Adoption of the most recent (2010) round of urban water management plans was required by July 1, 2011, with the plans were due to DWR by August 1, 2011. In their water management plans, urban water suppliers must assess whether their current and planned water supplies will be enough to meet the water demands expected during the next 20 years. The plans also consider various drought scenarios and the proper ways to respond in case of an unexpected water shortage. This law and its relationship to the Riverside County General Plan is discussed further in Section 4.19.4.D.

5. Water Conservation Act (SBX 7-7)

The Water Conservation Act of 2009 (Senate Bill X7-7, Steinberg), enacted in November 2009, includes distinct requirements related to both urban and agricultural water use. This law requires that the State of California reduce urban per-capita water use statewide by 10% by the end of 2015 and 20% by the end of 2020. DWR is required to report on progress toward meeting these urban per-capita water use goals. In addition, agricultural water suppliers must adopt agricultural water management plans by the end of 2012 and then update the plans by the end of 2015 and every five years thereafter. Through its Agricultural Water Management Planning and Implementation Program, the DWR helps water districts develop agricultural water management plans and

implement cost-effective, efficient water management practices. The urban side of this law and its relationship to Riverside County are discussed further in Section 4.19.3.G.

6. Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, which consists of three separate bills (AB 1739, SB 1168, and SB 1319), was signed into law on September 16, 2014. Groundwater is a critical element of California's water system, and accounts for 39% of the water used by cities and farms. Reliance is placed heavily on groundwater during drought and other dry conditions. Some of the state's groundwater basins are sustainability managed, but many face several challenges including overdraft, seawater intrusion, degraded water quality, land subsidence, and the decline in ecosystem services provided by the interaction of groundwater and surface water.

The three bills, AB 1739, SB 1168 and SB 1319, establish a definition of sustainable groundwater management, and require local agencies to adopt management plans for the most important groundwater basins. The central feature of these bills is the recognition that groundwater management in California is best accomplished locally. Local agencies now can assess the conditions of their local groundwater basins and take the necessary measures to prevent chronic, long term overdraft. This legislation will strengthen local management and monitoring, putting California communities on a path to become more resilient to water shortages.

The Act requires the Department of Water Resources to categorize each groundwater basin as high-, medium-, low- or very low priority by January 31, 2014. All groundwater basins designated as high- or medium-priority (in relation to the threat of overdraft) must be managed by a local groundwater sustainability agency. The agency is then responsible for implementing and managing a groundwater sustainability plan. By 2020, over drafted groundwater basins must have sustainability plans and by 2022, all other high- and medium- priority basins (not in overdraft) must also have sustainability plans. By 2040, all high- and medium- priority groundwater basins must achieve sustainability.

This legislation provides measurable objectives and milestones to reach sustainability, and a state role of limited intervention when local agencies are unable or unwilling to adopt sustainable management plans. This legislation requires that prior to general plan amendments, the local groundwater sustainability agency must review the proposed changes. The groundwater sustainability agency must then supply the planning agency with information regarding the anticipated effect of the proposed project on the groundwater sustainability plan. This act also authorizes groundwater sustainability agencies to require the registration of groundwater extraction devices and to require the installation of a measurement device in order for the management agency to regulate groundwater extraction.

~~6.~~ 7. Other California Water Supply Laws

With respect to the land use decision-making, the Urban Water Management Planning Act (CWC Section 10610 *et seq.*) and provisions of the general planning laws (CGC Section 65000 *et seq.*) relate to water supply issues. In addition to these, California law requires other types of water supply analyses to be performed in connection with certain specific types of projects. While such projects do not include general plan updates, the following is provided as background discussion regarding California's other water supply statutes.

Senate Bill 610: CWC Sections 10910–10915 (commonly referred to as Senate Bill [SB] 610 according to the enacting legislation) require the preparation of a water supply assessment (WSA) for certain projects, generally including those having a water demand equivalent to a project with 500 dwelling units or more. Under SB 610, at the time the lead agency determines a project is subject to CEQA, the agency must identify the public water system that will provide the water service and request the water provider to prepare a WSA for the project (see CWC Section 10910(b)). In preparing a WSA, if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate information from that plan into the WSA. Generally, a WSA must include an analysis of whether the total projected water supplies available to the water provider during normal, single-dry and multiple-

dry years over the next 20-year period are sufficient to meet the projected water demand associated with the project, in addition to existing and planned future uses. Additional analysis is required if the water supplies identified to serve the project include groundwater.

Upon the water provider's adoption of the WSA, the WSA must be forwarded to the lead agency and incorporated into the CEQA document being prepared for the project (CWC Section 10911). In this case, the proposed GPA No. 960 does not constitute a project for purposes of CWC Section 10912 and, therefore, the requirement to prepare a WSA does not apply and has not been triggered. Notwithstanding this requirement, projected water demands associated with GPA No. 960 are generally accounted for in the 2010 UWMP updates prepared by the regional wholesale and local retail urban water suppliers throughout Riverside County. See Section 4.19.4 and Appendix EIR-8 for applicable agency-level information.

Senate Bill 221: Similar to the requirements of SB 610, California Government Code Section 66473.7 (commonly referred to as SB 221 according to the enacting legislation) generally requires the legislative body of a city, county or local agency to include as a condition for any tentative tract map or development agreement that includes a subdivision (defined as a residential development containing 500 or more dwelling units) a requirement that a sufficient water supply is or will be available to serve the subdivision. The availability of a sufficient water supply must be based on written verification from the public water system that will provide water service to the proposed project. As with the standard provided by SB 610, a "sufficient water supply" under SB 221 is the total water supplies available to the water provider during normal, single-dry and multiple-dry years within a 20-year projection that will meet the projected demand of the proposed subdivision, in addition to existing and planned future uses, including agricultural and industrial. The water provider's verification must be based on substantial evidence, such as water supply contracts, capital outlay programs and regulatory permits and approvals regarding the water provider's right to and capability of delivering the necessary project supply. Because proposed GPA No. 960 does not include or involve development agreements or tentative tract maps, the written verification requirements of SB 221 do not apply and have not been triggered.

C. Riverside County Regulations

1. Riverside County Ordinances

These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 427 – Regulating the Land Application of Manure: Ordinance No. 427 generally regulates the transportation and application of manure in designated areas of Riverside County. No manure transporter shall deliver manure to a site for the purposes of disposal, land application or storage within the unincorporated areas regulated by either the Santa Ana River or San Diego Regional Water Quality Control Board unless the site's landowner has a current and valid exemption as issued by the Riverside County Agricultural Commissioner. It requires the land owner to demonstrate compliance with the "Standards for Manure Use at Approved Sites" and prohibits application of manure within 100 feet of any well, among other standards. Compliance with this ordinance protects water quality for runoff, surface water and groundwater.

Ordinance No. 457 - Building Codes and Fees: This ordinance specifies the various state and/or professional society building and construction standards by which all development approved within unincorporated Riverside County must comply. It includes specifications for use of the California Building Code, the Uniform Housing Code, the California Plumbing Code, the California Mechanical Code and the California Electrical Code, among others. Use of these codes ensures that any development or construction within Riverside County meets the necessary standards for suitability, durability, safety and so on. In terms of erosion, runoff, drainage, flood control and safety, the codes include requirements for the structural integrity of buildings and other facilities for withstanding precipitation, inundation and water flow. They also specify standards for grading, lot, roadway and drainage design to ensure that water flows (particularly runoff) are directed or channeled appropriately ways. The ordinance also imposes minimum standards for permanent erosion control and associated landscaping. It includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they continue to provide adequate stormwater flow / runoff protections, erosion protection and sediment controls, both during and after construction activities on a site. As a result, compliance with this ordinance, as required in standard Riverside County development conditions of approval, ensures adequate measures are in place to prevent adverse effects from construction and urban runoff, stormwater flows and water erosion on developed lands.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance was adopted pursuant to the requirements of the National Flood Insurance Program (Title 42, United States Code, Section 4001 *et. seq.,* as amended) to protect the public's health, safety and welfare from flooding hazards. It does so by regulating development within flood hazard areas and establishing a variety of land use and construction standards for such development. The ordinance includes construction standards that apply to all new structures and substantial improvements to existing structures within Riverside County's mapped Special Flood Hazard Areas and floodplains (see EIR Section 4.11). Among other requirements, these types of construction are required to: use materials resistant to flood damage; use construction methods and practices that minimize flood damage; and have electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities designed and located to prevent water from entering or affecting them during flooding.

Further, all subdivision proposals and other proposed new development, including manufactured home parks or subdivisions greater than 50 lots or 5 acres are required to design and construct all utilities and facilities, including sewer, gas, electrical, propane tanks and water systems so as to minimize or eliminate flood damage. It also requires provisions of adequate drainage and obtainment of all other required state and federal permits. All new and replacement water supply systems must be designed to minimize or eliminate infiltration of floodwaters into the systems. New and replacement sanitary sewage systems must also be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters and onsite waste disposal systems must be located to avoid impairment or causing contamination during flooding. These measures ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, this ordinance serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 461 - Road Improvement Standards: While not addressing water resources directly, this ordinance does set forth standards for roads, bridges and other transportation-related facilities, including those aspects of hydrology, flood control and associated drainage functions. Because of their linear and impervious nature, paved roadways typically act as conduits for water flow, particularly stormwater (urban) runoff from developed areas. In addition, they often may function informally as barriers (dams, dikes or levees) to water flow or cause water channelization when constructed on raised beds or with tall curbs or crowns. Also, roadways often cross rivers, streams, drainages, floodplains and similar features. All crossings must be sufficiently

engineered to withstand the potential impacts of flood flows. In total, this ordinance serves to mitigate potential flooding hazards to people, property and structures by ensuring that roads and associated improvements and features are designed, constructed and maintained in a manner appropriate to the water flow potential and flooding hazard. It also serves to place to prevent significant adverse impacts due to road construction, runoff and stormwater flows from roadways, as well as water erosion.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: Ordinance No. 592 sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. Among other things, it establishes construction requirements for sewers, laterals, house connections and other sewerage facilities and for abandoned sewers, septic tanks and seepage pits in accordance with the Uniform Plumbing Code. It prohibits the discharge of rainwater, stormwater, groundwater, street drainage, subsurface drainage or yard drainage into any sewerage facility which is directly or indirectly connected to the sewerage facilities of Riverside County. Rather, these discharges must be emptied into storm drainage systems, not sanitary sewer systems.

It further protects Riverside County sewer systems and wastewater treatment facilities by prohibiting discharges (either directly or indirectly) to the county sewerage system of any of the following wastes: Gasoline, benzene, naphtha, solvent, fuel oil, flammable or explosive substances, hazardous amounts of toxic or poisonous substances, obstructive solids or viscous substances (including "asphalt, dead animals, ashes, sand, mud, straw, industrial process shavings, metal, glass, rags, feathers, tar, plastics, wood, whole blood, paunch manure, bones, hair and flesh, entrails, paper dishes, paper cups, milk containers or similar paper products, either whole or ground"), excessive concentrations of non-biodegradable oil, petroleum oil or refined petroleum products, dispersed biodegradable oils and fats, such as lard, tallow or vegetable oil in excessive concentrations that would tend to cause adverse effects on the sewerage system, excessively high concentrations of chemicals, such as cyanide, sulfides, acids, bases, chlorides, precipitates, dyes, plastics, metals, heavy metals, radioactive materials, etc., as well as "any substances that would interfere detrimentally with wastewater treatment processes, cause a public nuisance or cause any hazardous condition to occur in the sewerage system."

In short, this ordinance prohibits any discharges to any public sewer (which directly or indirectly connects to Riverside County's sewerage system) any wastes that may have an adverse or harmful effect on sewers, maintenance personnel, wastewater treatment plant personnel or equipment, treatment plant effluent quality, public or private property or may otherwise endanger the public, the local environment or create a public nuisance. As a result, this ordinance serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 617– Hazardous Substances (Regulating Underground Storage Tanks): Ordinance No. 617 implements Chapter 6.7 of the California Health and Safety Code, Sections 25280, *et seq.*, which establishes and provides for a program for the prevention of contamination from improper storage of hazardous substances stored underground. It also ensures that newly installed underground tank systems meet appropriate construction standards and that existing underground tanks systems are properly maintained, monitored and inspected to protect health, property and the public. It also establishes and a Local Oversight Program for the unauthorized releases of petroleum and petroleum-related materials from leaking underground tank systems which require remedial action and requires remediation of unauthorized releases from underground tank systems to prevent long-term threats to the public health, water quality and the environment.

Ordinance No. 629 – Prohibiting Bathing, Swimming, Boating or Entering Irrigation Canals, Ditches or Drains in Unincorporated Areas of Palo Verde Valley: Ordinance No. 629 protects water quality by making it unlawful for any person to "bathe, swim, boat, water-ski or otherwise enter into" the water in any irrigation canal,

lateral, ditch or drain in the unincorporated area of the Palo Verde Valley, coterminous with the Palo Verde Irrigation District.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: Ordinance No. 650 protects water quality, storm drains and surface waters by prohibiting the discharge or deposition of any sewage, sewage effluent or non-hazardous waste, treated or untreated, into any streams or bodies of water above or below the ground, within Riverside County. It also makes it "unlawful for any person to install or alter plumbing facilities or drainage systems for the discharge or deposit of any sewage, sewage effluent or nonhazardous waste from any dwelling, house or building" without a permit from the County of Riverside. It requires that sewage effluent must be disposed according to the minimum standards of the most recent edition of the Uniform Plumbing Code and the sewage disposal requirements of the Riverside County Department of Environmental Health. Most importantly, it specifies that if sanitary drainage system (i.e., sewer) is not available, an 'Onsite Wastewater Treatment System' (OWTS) (an individual or community onsite wastewater treatment, pretreatment and dispersal system including, a conventional or alternative subsurface discharge) must be provided. The type of sewage facilities installed shall be determined on the basis of location, soil porosity, site slope and ground water level, and shall be designed to receive all sanitary sewage from the property.

It also includes a variety of standards related to OWTS, including: prohibition on surface drainage entering any part of the OWTS; requirements for setbacks between subsurface sewage disposal components (including septic tanks, distribution and leaching systems) and any water well; requirements that the OWTS function in a sanitary manner and not result in contamination, pollution or creation of a nuisance or endanger the safety of any domestic water supply or public health. OWTS are also subject to detailed plan review and approval, as well as pre-site and construction inspections by the County of Riverside. Thus, this ordinance serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 659 – Development Mitigation Fee for Residential Development (DIF Program): This ordinance sets a range of development impact fees to be used "in order to effectively implement the Riverside County General Plan, manage new residential, commercial and industrial development and reduce impacts caused by such development." It is intended to mitigate growth impacts (particularly those arising from population growth) on public facilities within Riverside County to ensure residents are not placed into conditions perilous to their health, safety, comfort or welfare.

The ordinance establishes the process for (and nexus to) the construction or acquisition of various types of public facilities, as well as the preservation of open space, wildlife and their associated habitats. The DIF program ensures that "all new development bear its fair share cost of providing the facilities, open space and habitat reasonably needed to serve that development." Hence the program applies to all new residential, commercial and industrial development, as well as to surface mining. Fees are assessed on the basis of regional location within Riverside County, land use type (per dwelling unit for residential units and per acre for all other uses) and the applicable categories of facilities to be provided. For transportation and flood control, fees are based on forecast development needs for the subsequent 20 years.

In regards to flood control facilities, the DIF program ensures fees are collected and expended to provide necessary facilities commensurate with the ongoing levels of development in specific areas not already subject to, or in addition to, Area Drainage Plan fees as under Ordinance No. 458. This ordinance provides mitigation for development impacts on flood control facilities and future needs for flood control by ensuring that funds are collected and utilized to provide needed facilities as development progresses within Riverside County. The provision of these facilities ensures new development does not expose people, property or structures to undue risks from drainage or stormwater flows.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: Ordinance No. 682 establishes minimum standards for construction, reconstruction, abandonment and destruction of wells in order to protect underground water resources and provide safe water within Riverside County. This ordinance is enforced by the Riverside County Department of Environmental Health. It requires county permits for construction, reconstruction or decommissioning (destruction) of various types of water wells. It also sets standards for these activities pursuant to those "recommended in the Bulletins of the California Department of Water Resources." It contains prohibitions on placing wells where sources of pollution or contamination could contaminate or pollute the well water. It also requires wells be located "an adequate distance from all potential sources of contamination and pollution," including minimums of 50 feet from sewers, 100 feet from watertight septic tanks, sub-surface sewage leach line or leach fields and animal or fowl enclosures, 150 feet from cesspools or seepage pits, and 200 feet from any surface sewage disposal system discharging 2,000 gallons per day or more. Minimum distances from other sources of pollution or contamination shall be as determined by the Department upon investigation and analysis of the probable risks involved. It also sets a variety of water quality standards for water supply wells pursuant to the standards for constituents required in the California Code of Regulations, Title 22, "Domestic Water Quality and Monitoring." All individual domestic water wells must also be tested for and meet the nitrate, fluoride and TDS (or total filterable residue) standards in Title 22. Through these means, this ordinance serves to protect water supplies, as well as water quality, for groundwater.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance protects the health, safety and general welfare of Riverside County residents by imposing restrictions to reduce pollutants in stormwater discharges to the maximum extent practicable, regulating illicit connections and discharges to the storm drain system and regulating non-stormwater discharges to the storm drain system. The intent of this ordinance is to protect and enhance the water quality of Riverside County watercourses, water bodies, groundwater and wetlands in a manner pursuant to and consistent with applicable requirements contained in the federal CWA and the CWC, as well as other applicable state and federal regulations.

Among other things, the ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a National Pollutant Discharge Elimination System (NPDES) permit or as otherwise authorized by the Santa Ana River, San Diego or Colorado River Basin Regional Water Quality Control Board or the State Water Resources Control Board in compliance with the Clean Water Act. This ordinance also establishes a variety of standards and BMPs associated with controlling stormwater runoff, including requirements to:

- Increase permeable areas (by leaving highly porous soil and low-lying areas undisturbed; by incorporating landscaping and open space into the project design; by using porous materials for or near driveways and walkways; and, by incorporating detention ponds and infiltration pits into the project design).

- Direct runoff to permeable areas (by orienting it away from impermeable areas and towards swales, berms, green strip filters, gravel beds or French drains; by installing rain-gutters oriented towards permeable areas; by modifying the grade of the property to divert flow to permeable areas and minimize the amount of stormwater runoff leaving the property; and, by designing curbs, berms or other structures so they do not isolate permeable or landscaped areas).

- Maximize stormwater storage for reuse (by using retention structures, subsurface areas, cisterns or other structures to store stormwater runoff for reuse or slow release).

Although focusing on the pollution-control aspects of the NPDES program, in conjunction with Ordinance No.'s 457 and 460, this ordinance establishes a range of standards and permit requirements that collectively serve to ensure that flooding, stormwater flows and runoff are managed appropriately to protect water quality and water

infrastructure and prevent risks to people, property, structures and facilities within Riverside County. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, this ordinance mitigates potential hazards that could arise from stormwater flows and runoff, including flooding and erosion, and its effects on water quality and water infrastructure.

Ordinance No. 830 – Regulating the Land Application of Class A Sewage Sludge for Agricultural Activities: Ordinance No. 830 regulates the application of bulk Class A sewage sludge in commercial farming uses to ensure it does not adversely affect public health, ground and surface water or soils. Through these regulations, this ordinance serves to protect water supplies and water quality for both surface water and groundwater.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: Ordinance No. 843 regulates the discharge of wastes into the sewage collection systems of the Highgrove community as these effluents are channeled to the City of Riverside's Regional Water Quality Control Plant (RWQCP) and ultimately discharged into permeable soil and/or surface waters of the Santa Ana River. The purpose of this regulation is to: establish sewage effluent discharge limitations and requirements that comply with federal general pretreatment regulations (as stated in Section 403.2 of Title 40 of the Code of Federal Regulations); ensure water reaching the RWQCP does not interfere with the operation of the plant; prevent the introduction of pollutants into the RWQCP from the Highgrove community; improve opportunities to recycle and reclaim municipal and industrial wastewater and biosolids from the Highgrove community; and enable the City of Riverside to comply with its NPDES Permit conditions, biosolids use and disposal requirements and any other federal or state laws to which the RWQCP is subjected. This ordinance also addresses the issuance of Industrial User permits; monitoring, compliance and enforcement activities; administrative review procedures; industrial waste plan check review services; and, user reporting requirements. Thus, this ordinance serves to protect water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: Ordinance No. 856 was enacted to protect the water quality of groundwater in the Quail Valley region of Riverside County. It prohibits new septic systems and expansions or modifications of existing septic systems within the region because of the unacceptable number of septic system failures leading to surface discharges of untreated sewage and its mixing with other run-off water, directly affecting the area's residents and polluting runoff water during rain events. Further, stormwater runoff from this area drains almost directly into Canyon Lake, which is listed by the USEPA as an impaired water body due to excessive concentrations of bacteria, nitrogen and phosphorus, all of which are present in septic wastes.

This prohibition was also necessary pursuant to the Uniform Plumbing Code, referenced as Riverside County's standard for plumbing design and installation by Riverside County Ordinance No. 457, and which states in Appendix K, Section (g) "When there is insufficient lot area or improper soil conditions for adequate sewage disposal for the building or land use proposed, no building permit shall be issued and no private sewage disposal shall be permitted." The prohibitions and restrictions of this ordinance serve to protect water supplies, water and wastewater facilities, and water quality for both surface water and groundwater in the Quail Valley region, as well as Canyon Lake and the water users relying on it as a water supply source.

Ordinance No. 859 - Water-Efficient Landscape Requirements: Adopted in 2006, this ordinance outlines water-efficient landscape standards for development within Riverside County in order to implement requirements of the California Water Conservation in Landscaping Act of 2006 and the California Code of Regulations Title 23, Division 2, Chapter 2.7. It includes a number of measures designed to conserve water, including: provisions for water management practices and water waste prevention; establishment of a structure for planning, designing,

installing, maintaining and managing water-efficient landscapes in new and rehabilitated projects; reducing water demands from landscapes without adversely affecting landscape quality or quantity; requirements for landscapes not exceeding a maximum water demand of 70% of its reference evapotranspiration (ETo) or any lower percentage required by state legislation; elimination of water waste from overspray and/or runoff; and, education of the public regarding the benefits of landscape water conservation. It includes a number of standards, including planting plan requirements, irrigation design plan requirements, soil management plan requirements, grading design plan requirements and landscape irrigation and maintenance measures. By conserving water, this ordinance protects existing water supplies (surface and groundwater). And by limiting water applications, it also helps minimize water runoff and water erosion in landscaped areas.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: Ordinance No. 871 was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems. Thus, this ordinance prohibits new septic systems and expansions or modifications of existing septic systems within the region because of septic system failures likely contributing to excessive nitrate levels in the region's groundwater. Only septic system designs that can effectively reduce (i.e., 50% or more) effluent nitrate levels and not lead to further degradation of the groundwater shall be approved by the County of Riverside. Through these limitations, this ordinance protects water supplies and groundwater quality.

2. Riverside County Flood Control and Water Conservation District (FCWCD)

The FCWCD was created in 1945 by act of state legislature in order to protect the people, property and watersheds of Riverside County from damage or destruction from flood and stormwater, and to conserve, reclaim and save such waters for beneficial use. The District encompasses 2,700 miles of western Riverside County and extends easterly into the Coachella Valley to include the cities of Palm Springs, Cathedral City and Desert Hot Springs. (East of this, flood control functions are performed by the Coachella Valley Water District.) The FCWCD is governed by a board, comprised of Riverside County's Board of Supervisors. The District also manages Riverside County's Master Drainage Plans and Area Drainage Plans. See Section 4.19.2.E.5 for more information on these.

Functionally, the District provides a number of services, including: identification of flood hazards and problems; regulation of floodplains, *regulation of* drainage and development; ~~planning for~~ county watercourse~~s~~ and drainage *planning*; education for flood prevention and safety; construction of flood control structures and facilities; flood warning and early detection; and, maintenance and operation of county flood control structures. The District also provides certain non-tax supported functions, such as floodplain management, development review, NPDES compliance, etc., for ~~the~~ *portions of the* ~~entire~~ county. And unlike County of Riverside departments, the FCWCD has the authority to expend tax dollars within city boundaries as well as within unincorporated areas.

3. Flood Control Authority for Eastern County - Coachella Valley Water District

For a variety of reasons, within the Coachella Valley, county flood control oversight responsibilities rests with the Coachella Valley Water District (CVWD) rather than the FCWCD. (Though FCWCD remains responsible for the rest of Riverside County.) The CVWD oversees flood protection for nearly 600 square miles. This includes 16 stormwater protection channels within a system that encompasses roughly 135 miles of channels built along the natural alignments of dry creeks that naturally flow from the surrounding mountains, down onto the Coachella Valley and, ultimately, into the Whitewater River.

In addition, a number of dikes and levees have also been designed and built to collect rapidly flowing flood water, mostly in the 'cove communities.' This is an important element for regional flood control, even though the area is desert with an average of only 3 inches or rainfall a year. Since this moisture can occur all at once as heavy rains falling in the valley, or even more perilously in the extremely tall San Jacinto Mountains to the west, severe floods – particularly flash floods – are a hazard to the region.

On its website, the CVWD describes the "backbone of the stormwater protection system" as 50-mile storm channel that runs from the Whitewater area north of Palm Springs to the Salton Sea. The western half of the channel runs along the natural alignment of the Whitewater River that cuts diagonally across the valley to Point Happy in La Quinta (near Highway 111 and Washington Street). Because the riverbed flattens out naturally in the eastern valley, downstream from Point Happy a man-made storm channel funnels flood waters to the Salton Sea. The entire length of this flood protection facility is known as the Whitewater River/Coachella Valley Stormwater Channel. The channel was built to withstand a 'standard project flood' (which is greater than a 100-year flood) or approximately a flow of 80,000 cubic feet per second.

Stormwater protection is funded primarily from local property taxes. Unfortunately, this limits expansion of the stormwater system. The CVWD reports that the Thousand Palms area and rural areas in the eastern Coachella Valley from Oasis to Salton City do not currently have flood protection, although the District is working with federal agencies to expand flood protection to these areas.

D. Existing General Plan Policies

These regulations are already in effect in Riverside County and are not part of the proposed project, GPA No. 960. Rather, these policies are those considered to play a role in ensuring any potential water-related environmental effects are avoided, reduced or minimized through their application on a case-by-cases basis when a given development proposal warrants their use.

1. Open Space (OS) Element

Policy OS 1.1: Balance consideration of water supply requirements among urban, agricultural and environmental needs so that sufficient supply is available to meet each of these different demands.

Policy OS 1.2: Develop a repository for the collection of county water resource information.

Policy OS 1.3: Provide active leadership in the regional coordination of water resource management and sustainability efforts affecting Riverside County and continue to monitor and participate in, as appropriate, regional activities addressing water resources, groundwater and water quality, such as groundwater management plans, to prevent overdraft caused by population growth.

Policy OS *2.2* **(Previously 2.1):** Encourage the installation and use of water-conserving systems such as dry wells and graywater systems, where feasible, in new developments. The installation of cisterns or infiltrators shall be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms.

Policy OS 2.5: Encourage continued agricultural water conservation measures and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields and appropriate scheduling of water deliveries.

Policy OS 3.1: Encourage innovative and creative techniques for wastewater treatment, including the use of local water treatment plants.

Policy OS 3.2: Encourage ~~innovative~~ *wastewater treatment* ~~techniques~~ *innovations, sanitary sewer systems, and groundwater management strategies that protect groundwater quality in rural areas.*

Policy OS 3.3: Minimize pollutant discharge into storm drainage systems, natural drainages and aquifers.

Policy OS 4.1: Support efforts to create additional water storage where needed, in cooperation with federal, state and local water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate, as needed.

Policy OS 4.2: Participate in the development, implementation and maintenance of a program to institute recharge aquifers underlying the county. The program shall make use of flood and other waters to offset existing and future groundwater pumping, except where:

a. The quality of groundwater resources would be reduced;

b. The available groundwater aquifers are full; or

c. Rising water tables threaten the stability of existing structures.

Policy OS 4.3: Ensure that adequate aquifer water recharge areas are preserved and protected.

Policy OS 4.4: Incorporate natural drainage systems into developments where appropriate and feasible.

Policy OS *4.8* **(Previously 4.6):** Use natural approaches to managing streams to the maximum extent possible, where groundwater recharge is likely to occur.

Policy OS 5.1: Substantially alter floodways or implement other channelization only as a 'last resort,' and limit the alteration to:

a. That necessary for the protection of public health and safety only after all other options are exhausted;

b. Essential public service projects where no feasible construction method or alternative project location exists; or

c. Projects where the primary function is improvement of fish and wildlife habitat.

Policy OS 6.1: During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

Policy OS 6.3: Consider wetlands for use a natural water treatment areas that will result in improvement of water quality.

2. Land Use (LU) Element

Policy LU 5.2: Monitor the capacities of infrastructure and services in coordination with service providers, utilities and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service.

Policy LU 5.3: Review all projects for consistency with individual urban water management plans.

Policy LU *9.2* **(Previously 8.2):** Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan, and federal and state regulations such as CEQA, NEPA, the Clean Air Act and the Clean Water Act.

Policy LU *21.2* **(Previously 17.2):** Require that adequate and available water resources exist to meet the demands of the proposed land use [within the Rural Foundation].

Policy LU *28.3* **(Previously 22.3):** Require that adequate and available circulation facilities, water resources and sewer facilities exist to meet the demands of the proposed residential land use.

Policy LU *29.7* **(Previously 23.7):** Require that adequate and available circulation facilities, water resources, and sewer facilities exist to meet the demands of the proposed [commercial] land use.

Policy LU *30.7* **(Previously 24.7):** Require that adequate and available circulation facilities, water resources and sewer facilities exist to meet the demands of the proposed [industrial] land use.

Policy LU *31.4* **(Previously 25.4):** Require that adequate and available circulation facilities, water resources and sewer facilities exist to meet the demands of the proposed [public facility] land use.

Policy LU *32.6* **(Previously 26.6):** Require that adequate and available circulation facilities, water resources and sewer facilities exist to meet the demands of the proposed [community center] land use.

Policy LU *34.3* **(Previously 28.4):** Require that adequate and available *transportation* ~~circulation~~ facilities, water resources, sewer facilities and/or septic capacity exist to meet the demands of the proposed [Rural Village Overlay] land use.

E. Proposed New or Revised County General Plan Policies

Except to the extent they have been amended as part of GPA No. 960, the General Plan policies described above continue to apply. The following are proposed new or revised General Plan polices address impacts related to water resources.

1. Open Space (OS) Element

NEW **Policy OS 1.4:** *Promote the use of recycled water in landscape irrigation.*

NEW **Policy OS 2.1:** *Implement a water-efficient landscape ordinance and corresponding policies that promote the use of water-efficient plants and irrigation technologies, minimizes the use of turf, and reduces water waste without sacrificing landscape quality.*

Policy OS 2.3: ~~Encourage native, drought-resistant landscape planting.~~ *Seek opportunities to coordinate water-efficiency policies and programs with water service providers.*

Policy OS 2.4: Support and engage in educational outreach programs with other agencies, *the public, homebuilders, landscape installers and nurseries that* promote water conservation and wide-spread use of water-*efficient* ~~saving~~ technologies.

NEW **Policy OS 3.4:** *Review proposed projects to ensure compliance with the National Pollutant Discharge Elimination System (NPDES) Permits and require them to prepare the necessary Stormwater Pollution Prevention Program (SWPPP).*

NEW **Policy OS 3.5:** *Integrate water runoff management within planned infrastructure and facilities such as parks, street medians and public landscaped areas, parking lots, streets, etc., where feasible.*

NEW **Policy OS 3.6:** *Design the necessary stormwater detention basins, recharge basins, water quality basins or similar water capture facilities to protect water-quality. Such facilities should capture and/or treat water before it enters a watercourse. In general, these facilities should not be placed in watercourses unless no other feasible options are available.*

NEW **Policy OS 3.7:** *Where feasible, decrease stormwater runoff by reducing pavement in development areas, reducing dry weather urban runoff and by incorporating 'Low Impact Development,' green infrastructure and other Best Management Practice design measures, such as permeable parking bays and lots, use of less pavement, biofiltration and use of multi-functional open drainage systems.*

NEW **Policy OS 4.5:** *Encourage streets in a vicinity of watercourses to include park strips or other open space areas that allow permeability.*

Policy OS *4.6* **(Previously 4.5):** Retain stormwater at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding. *Such retention may occur through 'Low Impact Development' or other Best Management Practice measures.*

NEW **Policy OS 4.7:** *Encourage stormwater management and urban runoff reduction as an enhanced aesthetic and experience design element. Many design practices exist to accomplish this depending on site conditions, planned use, cost-benefit and development interest.*

NEW **Policy OS 4.9:** *Discourage development within watercourses and areas within 100 feet of the outside boundary of the riparian vegetation, the top of the bank or the 100-year floodplain, whichever is greater.*

Policy OS 5.2: If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:

a. Stream scour;

b. Erosion protection and sedimentation;

c. Wildlife habitat and linkages;

d. *Cultural resources including human remains;*

~~d~~ *e.* Groundwater recharge capability;

~~e~~ *f.* Adjacent property; and

~~f~~ *g.* Design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete and landscaping with native plants to the maximum extent possible). A site-specific hydrology study may be required.

Policy OS 5.3: Based upon site-specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues:

a. Public safety;

b. Erosion;

c. Riparian or wetland buffer;

d. Wildlife movement corridor or linkage; *and/or*

e. Slopes.*;*

f. Type of watercourse; and

g. Cultural resources.

Policy OS 5.5: ~~New development shall~~ *P*reserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. ~~Incentives shall be utilized to the maximum extent possible.~~ *Prohibit fencing that constricts flow across watercourses and their banks.*

2. Land Use (LU) Element

Policy LU *7.2* **(Previously 6.2):** Notwithstanding the Public Facilities designation, public facilities shall also be allowed in any other land use designation except for the Open Space-Conservation and Open Space-Conservation Habitat land use designations. For purposes of this policy, a public facility shall include all facilities operated by the federal government, State of California, County of Riverside, any special district governed by *or operating within* the County of Riverside or any city, and all facilities operated by any combination of these agencies.

Policy LU *9.1* **(Previously 8.1):** Provide for permanent preservation of open space lands that contain important natural resources, *cultural resources,* hazards, water features, watercourses *including arroyos and canyons*, and scenic and recreational values.

Policy LU *9.4* **(Previously 8.4):** Allow development clustering and/or density transfers in order to preserve open space, natural resources, *cultural resources*, and/or biologically sensitive resources. *Wherever possible, development on parcels containing 100-year floodplains and blue line streams and other higher-order watercourses and areas of steep slopes adjacent to them shall be clustered so as to keep development out of the watercourse and adjacent steep slope areas, and to be compatible with other nearby land uses.*

NEW **Policy LU 18.1:** *Ensure compliance with the County's water-efficient landscape policies. Ensure that projects seeking discretionary permits and/or approvals develop and implement landscaping plans prepared in accordance with the Water-Efficient Landscape Ordinance (Ordinance No. 859), the County of Riverside Guide to California Friendly Landscaping and Riverside County's California Friendly Plant List. Ensure that irrigation plans for all new development incorporate weather-based controllers and utilize state-of-the-art water-efficient irrigation components.*

NEW **Policy LU 18.2:** *Minimize use of turf. Minimize the use of natural turf in landscape medians, front-yard typical designs, parkways, other common areas, etc., and use drought tolerant planting options, mulch or a combination thereof as a substitute. Limit the use of natural turf to those areas that serve a functional recreational element. Incorporate other aesthetic design elements such as boulders, stamped concrete, pavers, flagstone, decomposed granite or manufactured-rock products to enhance visual interest and impact.*

NEW **Policy LU 18.3:** *Design and field check irrigation plans to reduce runoff. Emphasize the use of subsurface irrigation techniques for landscape areas adjoining non-permeable hardscape. Utilize subsurface irrigation or other low-volume irrigation technology in association with long, narrow or irregularly shaped turf areas. Minimize use of irregularly shaped turf areas.*

NEW **Policy LU 18.4:** *Coordinate county water-efficiency efforts with those of local water agencies. Support local water agencies' water conservation efforts.*

NEW **Policy LU 18.5:** *Emphasize and expand the use of recycled water in conjunction with local water agencies. Recycled water determined to be available pursuant to Section 13550 of the California Water Code shall be used for appropriate non-potable uses whenever it: a) provides a beneficial use to the customer; b) is economically and technically feasible; c) is consistent with applicable regulatory requirements; and, d) is in the best interests of public health, safety and welfare. With the exception of non-common areas of single-family home residential developments, all other irrigation systems must be designed and installed to accommodate the current or future use of recycled water for irrigation. If no recycled water availability exists or is imminent in the vicinity of a project (as determined by prevailing water agency), all subsurface piping shall be installed as 'recycled water ready' to reduce future retrofit costs. Such irrigation plans shall be developed in accordance with standards and policies of the applicable recycled water purveyor. Recycled water systems shall be designed to meet regulatory requirements of the California Department of Public Health and the local recycled water purveyor.*

NEW **Policy LU 18.6:** *Encourage Public Participation in Water Conservation Efforts. More outreach is needed to change the public perception of water efficient landscaping and the design and care of such landscapes as they are a departure from that 'green' paradigm with which many county residents are familiar. To achieve this objective the County will:*

a. Develop tools designed to assist landowners with converting to attractive, drought tolerant landscapes.

b. Participate in outreach efforts designed to educate developers, landscape personnel, nurseries, retail establishments and the public on water-efficient landscaping and wise water-use programs.

c. Promote the use of drought tolerant plants and irrigation components.

NEW **Policy LU 22.2:** *Require that adequate and available circulation facilities, water resources, sewer facilities and/or septic capacity exist to meet the demands of the proposed land use.*

NEW **Policy LU 22.8:** *An amendment from the Rural Community Foundation Component that meets the following criteria may be considered as an entitlement/policy amendment and processed as defined in Section 2.4 of Ordinance No. 348:*

a. This amendment shall be located within a city's sphere of influence area.

b. This amendment shall be located within an existing community that is characterized by lots smaller than 20,000 square feet in net area.

c. There shall be a memorandum of understanding between the County and the city that ensures adequate infrastructure, including sewer services for the establishment of lots smaller than one acre.

d. This amendment shall be processed with a tract or parcel map and approved with a condition of approval that requires the extension of a sewer line.

3. Circulation (C) Element

NEW **Policy C 20.5:** *In order to protect the watershed, water supply, groundwater recharge and wildlife values of watercourses, the County will avoid siting utility infrastructure and associated grading, fire clearance and other disturbances within or adjacent to watercourses, if there are feasible alternatives available and discourage special districts and other governmental jurisdictions outside of the County's authority from doing so. Where such watershed utility siting locations cannot be avoided, the impacts on watercourses shall be minimized.*

4.19.6 Thresholds of Significance for Water Resources

The proposed project would result in a significant impact related to water resources if it would:

A. Result in water supplies insufficient or unavailable to serve the project from existing entitlements and resources, or result in the need for new or expanded entitlements.

B. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

C. Substantially degrade water quality.

D. Violate any water quality standards or waste discharge requirements.

E. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

F. Result in a determination by a wastewater treatment provider which serves or may serve the project that it would not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

G. Require or result in the construction of new water or wastewater facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

H. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

I. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

J. Require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

It should be noted that this water resources chapter collects all water-related issues into a single chapter. Specifically, the above threshold questions are arranged to group them by topic: water supply (questions A and B), water quality (C and D), infrastructure (E, F and G) and hydrology (H, I and J). In contrast, the CEQA Appendix G, "Environmental Checklist Form," included with the State CEQA Guidelines organizes the water

topics slightly differently. Questions A, E F, G and J are from checklist category XVII (Utilities and Service Systems); the remaining questions (B, C, D, H and I) are from category IX (Hydrology and Water Quality). The remaining Appendix G questions from category IX address flooding hazards and related safety risks. These are addressed in Section 4.11 (Flooding and Dam Inundation) of this EIR. The remaining category XVII questions, which address landfills and solid waste, are included in Section 4.17 (Public Facilities) of this EIR.

4.19.7 Effect of GPA No. 960 on the General Plan and on Water Resources

The proposed update to the General Plan pursuant to GPA No. 960 includes land use overlays, land use designation (LUD) changes and new or revised policies that would allow for the conversion of rural, semi-rural, agricultural and vacant lands into suburban or urban uses in concentrated areas throughout Riverside County. As with the current General Plan, future development consistent with GPA No. 960 has the potential to introduce people, property and structures into previously undeveloped areas. The resultant growth population (from new residential uses) and jobs and economic activity (from commercial, industrial and institutional uses) would result in a corresponding increase the amount of water used and wastewater generated by these various uses. This section examines the proposed changes in the General Plan and the effects on water and wastewater that would result from these changes.

A. Proposed Changes to the General Plan

As part of the update process, water resource data in the General Plan was updated and water-related policies reviewed and revised where necessary. The existing General Plan addresses water resources directly in the Multi-purpose Open Space and Conservation (OS-C) Element, as well as in various locations within the Land Use Element. In particular, the OS-C Element includes the following updates under GPA No. 960.

Protection of Arroyos: Text was added to the OS-C Element and elsewhere to increase awareness and protection of this unique water resource. Policies OS 5.3 and 5.5 were revised as a result.

Water Supply and Conveyance: The existing information in the OS-C Element was updated on this topic, including the addition of information on recent changes (lawsuits, species protections, etc.) affecting SWP water availability. A new policy, OS 1.4, was added.

Water Conservation: Existing information on this topic in the OS-C Element was updated and expanded, particularly relating to Riverside County's water-efficient landscaping ordinance and program (reflected in changes in the Land Use Element also). Policies OS 2.1 (now 2.2), 2.3 and 2.4 were revised and new policies were added to both the OS-C and Land Use Elements: OS 2.1, LU 18.1, 18.2, 18.3, 18.4, 18.5 and 18.6.

Water Quality: Existing information in the OS-C Element on this topic was updated and expanded, particularly with respect to non-point source pollution. New policies, OS 3.4, 3.5, 3.6 and 3.7, were added and one policy, OS 2.2, was deleted.

Groundwater Recharge: Additions were made to the OS-C Element to expand upon this topic, particularly as related to Best Management Practices (BMPs). New policies, OS 4.5, 4.7 and 4.9, were added, one policy, OS 4.7, was deleted and two policies were revised – OS 4.5 (now 4.6) and OS 4.6 (now 4.8).

Watercourse Overlays: Text and policies related to this overlay type were deleted; including Policy LU 28.1 and the 'Watercourse Overlay' description in the land use category tables throughout the General Plan and Area Plans.

Water Infrastructure: Additions were made to clarify and reinforce General Plan policies for ensuring adequate infrastructure, including water and sewer conveyances, are provided for new development as needed. New policies, LU 22.2, 22.8 and 20.5 were added and one policy, LU 6.2 (now 7.2), was revised.

In addition to these changes, a variety of LUD and policy area changes are proposed, as per the descriptions in Section 3.0 of this EIR and associated EIR Figure 3-1 (and corresponding maps within each Area Plan) that may indirectly affect water resources. Changes to specific lands would affect the specific hydrology on or underlying the site. Where such changes would lead to an increase or decrease in development potential (density or intensity), the demand for potable water associated with new residents, visitors and workers would also be altered correspondingly.

GPA No. 960 also includes new and revised policies which would be implemented at a future time in locations not foreseeable at present; for example, the new incidental rural Retail-Commercial policy, Indian fee land policies, as others as described in Section 3.0 of the EIR. Similarly, new maps for trails and county roads (GP Figures C-7 and C-1, plus corresponding maps within each Area Plan) indicate general road and trail alignments, but not specific locations since specific design and construction sites must be determined based on specific site topography, existing development and timing, as well as both existing and future levels of service to be met. Actual locations for these improvements will be determined based on site assessment of opportunities and constraints to determine environmentally preferred alignments to minimize adverse effects. Also, normally such improvements are generally not proposed until either specific new developments or overall growth within the area triggers their need. As such, the spatial effects of these future trails and roads on specific hydrology or watersheds are not presently foreseeable. Rather, they will require site-specific analyses and mitigation when proposed as part of future development to occur as the General Plan builds out. As such, future impacts and mitigation will be assessed programmatically pursuant to the performance standards outlined herein, as well as elsewhere throughout this EIR.

B. Analysis of GPA No. 960 Effects on Water Resources

1. Water Data and Calculations

Because water resources are such a highly regulated and contentious issue, myriad documents and data sources are available addressing every possible aspect of the resource. The topic of water resources covers a wide array of topics and information. For the purposes of this portion of the EIR, however, they can be summarized into four key groups of topics, as follows:

Hydrology: Watershed, groundwater basins and surface drainages. In regards to existing resources, existing hydrology is described in Section 4.19.2.B, existing groundwater basins are described in Section 4.19.4.B and existing water quality is described in Section 4.19.2.C, as well as elsewhere throughout the chapter. In terms of future resources, effects of long-range development and General Plan build out on hydrology cannot be reasonably foreseen with any specificity at this time. Accordingly, effects of future development accommodated by the project, GPA No. 960, would have to be addressed programmatically pursuant to the previous EIR certified for the 2003 General Plan (i.e., EIR No. 441) as well as this EIR. However, for project components with known spatial locations, potential effects on hydrology can be roughly estimated in terms of amounts of acreages affected within each hydrological region, watershed or groundwater basin. Towards that end, this data is presented in Table 4.19-BO (Summary of Project Spatial Effects on Hydrology, by Water District), below, at the

end of this subsection. In some cases, future development sites may be located within an existing Riverside County Master Drainage Plan (MDP). See Table 4.19-BP (Summary of Project Spatial Effects to Areas Outside Water Districts). In these locations, any stormwater drainage systems or other surface flow modifications required as part of the development would have to conform to the requirements of the applicable MDP.

Water Services: This category applies to the water districts, infrastructure and services provided. In regards to existing resources, water supply information on imported water is presented in Section 4.19.3.A, in particular, as well as in Section 4.19.3.B and, for future imported supplies, Section 4.19.3.C. Existing local supplies are discussed in Section 4.19.4.B for groundwater supplies and Section 4.19.4.C for other local supplies (surface, recycled, desalinated, etc.). The local supply sections also provide information on the local agencies' services, including potable, non-potable and agricultural water supplies, as well as wastewater (sewage) disposal and treatment. Regarding effects on water supplies and infrastructure, in addition to hydrology, Table 4.19-BO also shows the acreage of known spatial changes associated with the project broken down by existing water districts as well.

Water Demand: A variety of information is provided throughout this chapter regarding existing water demand. Projections for imported water demand are provided in Section 4.19.3.C and projections for local areas, by the water districts that serve them, are presented in Sections 4.19.4.E through 4.19.4.I. In addition, three tables of water calculations are presented below to address the theoretical water usage associated with the known spatial components of GPA No. 960. Only potable water (M&I) usage was calculated; no agricultural, recycled or non-potable water usages were calculated for several reasons. First, the disparity in water usage between irrigated croplands compared to dryland wheat crops (which, for example, are not irrigated) or unirrigated pastures, ranchlands, etc. The land use data available for these calculations does not provide sufficient resolution to distinguish these. Also, as noted under the water district summaries, some districts have recycled water available and some do not. Likewise, some provide non-potable water and some do not. Lastly, as with agriculture, similar data was also unavailable to differentiate between recreational uses featuring irrigated turf (e.g., developed parks, golf courses, etc.) and non-irrigated (museums and interpretive centers, bike and skate parks, lake front areas, etc.).

The existing theoretical water usage based on the identified existing use on the land is presented in Table 4.19-BI (Theoretical Water Supply for Existing and Build Out Conditions). Theoretical calculations were used because locating water usage records for each parcel within Riverside County potentially affected by GPA No. 960 was infeasible and such calculations allow for standardized assessment of existing and future demands. Projections were also made for the same locations as they would be if developed to build out pursuant to the LUDs, policy areas and other spatial changes to the General Plan foreseeable at this time. These data are presented in Table 4.19-BK (Theoretical Water Supply for Areas of New Development Potential). Lastly, Table 4.19-BM (Comparison of Existing General Plan and Proposed Updated General Plan Theoretical Water Demands at County Build Out) presents a summary of how water demand would change from existing (baseline) conditions to project build out conditions if GPA No. 960 were approved and implemented fully (i.e., 100% build out).

Wastewater / Sewer Services: Because of its close connection to water supply, many water districts also handle wastewater (sewer) services as well – its collection and/or treatment. Thus, a variety of information regarding wastewater is included under the various local agency descriptions presented in Sections 4.19.4.E through 4.19.4.I. Focused discussion of sewer services is presented under Section 4.19.4.J, including water district/agency projections related to existing sewer capacities and future demands. In addition, three table of calculations are presented below to address the theoretical generation of wastewater (i.e., sewage) associated with the known spatial components of GPA No. 960. Existing theoretical wastewater generation based on the identified existing use of land is presented in Table 4.19-BJ (Theoretical Wastewater Generated by Existing and Build Out Conditions). Theoretical calculations were used because locating sewer records for each parcel within Riverside County potentially affected by GPA No. 960 was infeasible and such calculations allow for standardized assessment of existing and future demands.

Wastewater generation projections were also made for the same locations as they would be if developed to build out pursuant to the LUDs, policy areas and other spatial changes to the General Plan foreseeable at this time. See Table 4.19-BN (Comparison of Existing General Plan and Proposed Updated General Plan Theoretical Wastewater Generations at County Build Out). The table also compares how wastewater generation would change from existing (baseline) conditions to project build out conditions if GPA No. 960 were approved and implemented fully (i.e., 100% build out).

It should be noted that these calculations assume wastewater is generated at all developed/ developable locations. That is, no reductions were assumed, even for areas in which no sanitary sewer connection was available; it was assumed for the purposes of these calculations that septic systems (OWTS) would be used for disposal. In reality, actual availability of OWTS is based on a number of factors, including geology, soils, water table levels, etc., and cannot be assumed to be available in all cases.

2. Methodology

To determine the scope of project effects, Riverside County GIS performed spatial analysis of the available water resource data by overlaying it with known project components to determine acreage within each. The results for each of these existing resources within Riverside County are summed up in the tables that follow. The theoretical water supply needs associated with the known spatial components of the project are presented in Tables 4.19-BG, 4.19-BI and 4.19-BK. Tables 4.19-BH, 4.19-BJ and 4.19-BL do the same for wastewater generation. For all of these tables, the spatial project components were sorted into three categories based on their potential to affect hydrology, water supply and generate wastewater, as follows:

'Conserved' Areas: These are areas are where project changes would result in the *removal* of a site's development potential – specifically, where the site's LUD would be changed to OS-CH for habitat conservation. In these areas, future water usage and wastewater generation is assumed to be zero since no development would generally be allowed at these locations. Similarly, no land disturbances or changes to hydrology are assumed.

'Neutral' Areas: These are parcels where project changes would result in either no net change or a *decrease* in development potential, but future development would still be permitted at some level (and assumed to occur at 100% build out for the purposes of this EIR analysis, to ensure a worst-case scenario is evaluated). As such, the associated water demand is expected to be the similar to or possibly less than that currently assumed for the given area, use and build out population in the applicable water district's urban water management plan (if applicable). Accordingly, the water use associated with these areas is assumed to be consistent with the water agency's 2010 UWMP (if any) since, by definition such plans must account for future growth and GPA No. 960 would not adversely alter (i.e., increase) such growth projections. Wastewater generation rates and disposal needs are likewise assumed to be similar or less than those previously proposed.

'Potentially Affected' Areas: These are areas where proposed project changes would result in *new* effects to hydrology, water supply and wastewater treatment because GPA No. 960 would be *increasing* the site's development potential or intensity. This includes changes that would allow future development in areas not subject to development under the existing General Plan, as well as in areas previously planned for *less* dense/intense development. The resultant growth in these areas represents new demands on water supplies and would increase demand for both water and sewer services. It would also result in topographic and other changes that would adversely affect hydrology.

Once these three categories were established per above and sorted by existing and proposed land uses, theoretical existing and future (build out) acreages, water demands and wastewater generation could be calculated, as could the extent of hydrological changes expected. Existing uses were based on visual inspection and assessment of

aerial data. Future uses were assigned per the mid-point methodology and factors outlined in General Plan Appendix E-1. See Section 4.1 of this EIR for additional methodology information.

Again, it is important to note that such calculations are specific to this EIR and are used specifically to permit comparison between 'baseline' and future water use and wastewater generation to demonstrate areas of potential impacts and the relative degree of such impacts. These data should *not* be construed as the actual water needs or sewer usage for a given location or its future development. Each water and sewer district uses its own methods, formulae and factors, which are neither available nor practicable for calculating for this programmatic EIR. Such specific information is typically provided by the associated district when an implementing development is proposed and addressed with project-specific CEQA analysis and impacts mitigation, if needed, at that time. In particular, see discussions under "SB 610" in Section 4.19.5 for more details on the site-specific water supply assessments to be provided by water districts as part of Riverside County's review and approval process for new development.

The results of the theoretical calculations are presented in the tables that follow. The significance of these effects and their impacts, as well as any mitigation applicable or needed, is discussed in the subsequent section. Relevant supporting documentation is provided in Appendix EIR-8.

3. Results

The following tables summarize projected existing and future water usage and wastewater generation rates based on baseline (existing) conditions and various build out projections. For the purposes of effects on water supply and wastewater treatment infrastructure, changes proposed by the project are relevant only if they would result in an ultimate increase in needed water production or wastewater treatment. Changes that do not adversely affect (increase or reallocate) populations or land uses within the unincorporated Riverside County area, are not discussed further here. For a summary of these areas and the rationale for their omission, see Section 4.17.1.

Water usage and wastewater generation rates estimate the amount of water needed and wastewater created by residences and businesses over a certain amount of time (day, year, etc.). For water use, all values are assumed to be for potable water, except for agriculture, parks and recreation. No SBX-7x7 required water conservation reductions were included in any of these calculations, even though in reality reductions of up to 20% by 2020 are to be pursued per this law (the Water Conservation Act of 2009). In regards to wastewater generation, it is assumed that all uses projected generate wastewater for sanitary sewer disposal in the typical ways. No diversion of graywater, process recycling, composting or other methods, in order to ensure a worst-case analysis. The water use and wastewater generation rates are intended to be used to estimate the impact of new developments on local water resources. In this way they are useful in providing a general level of information for planning purposes and estimating potential effects.

Table 4.19-BK provides a summary of the theoretical need for water supplies within Riverside County according to the theoretical estimate of need associated with existing land uses, as well as that for build out of the known spatial components or locations addressed by GPA No. 960 (i.e., site-specific LUD changes, policy area and study area changes, etc.). Likewise, Table 4.19-BL does the same for wastewater treatment facilities (as indicated by wastewater generation). Again, for the purposes of worst-case effects on facilities, the calculations assume 100% of the wastewater generated is collected by sanitary sewer systems and processed at wastewater treatment facilities. In reality, a certain amount of the wastewater generated would be disposed of via onsite waste treatment systems (particularly individual septic systems). This is discussed further below and, in particular, in Section 4.19.8 (Impacts and Mitigation).

It should also be noted that the following projections are based on the assumption that *all* of the changes proposed under GPA No. 960 actually result in future development and fully build out (as part of overall implementation of the Riverside County General Plan). That is, it is a theoretical, worst-case scenario that likely over-states the actual development potential in the real-world. The actual future development of the individual parcels and areas affected by GPA No. 960 proposals, as with build out of the rest of the General Plan, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities.

For land use policy changes without currently assigned locations (Indian fee lands, incidental rural commercial, etc.), specific effects on water supply and wastewater generation/treatment cannot be delineated at present since they are land use-dependent. For the sake of comparison, however, Tables 4.19-BK and 4.19-BL show the theoretical water supply and wastewater treatment needs at build out for both the current General Plan and the General Plan as it would be if amended pursuant to proposed GPA No. 960.

Accordingly, Tables 4.19-BG and 4.19-BH show the water supply and wastewater treatment needs estimated to be generated for the existing (baseline) level of development currently present within the portions of Riverside County directly affected by proposed land use-related changes and for the land use of those same parcels of land as they would develop pursuant to the proposed project; in essence, with and without the proposed project. Because much of the area addressed by GPA No. 960 includes regions for which future development potential is being eliminated (e.g., deletion of Rural Village Study Areas), the first scenario (i.e., Tables 4.19-BG and 4.19-BH) includes many areas where the build out scenario under the updated General Plan is the same as that which would occur under the existing (current General Plan's) mapped LUDs. As such, these areas do *not* represent new areas of growth attributable to the project, GPA No. 960, but rather simply reflect the anticipated build out of the Riverside County General Plan that would occur with or without the project.

Table 4.19-BI: Theoretical Water Supply for Existing and Build Out Conditions

Land Use[1]	Generation Factors	Theoretical Water Supply (AFY)		
		Existing Uses of Land[2]	General Plan Build Out With GPA No. 960[3]	Difference
Residential	1.01 AFY per dwelling unit	5,850 du	16,570 du	+ 10,720 du
		5,910 AFY	**16,740 AFY**	**+ 10,830 AFY**
Commercial[4]	3.50 AFY per acre	70 acres	450 acres	+ 370 acres
		260 AFY	**1,560 AFY**	**+ 1,300 AFY**
Industrial[5]	0.97 AFY per acre	230 acres	280 acres	+ 50 acres
		230 AFY	**280 AFY**	**+ 50 AFY**
Total Area	**111,440 acres**	***6,400 AFY***	***18,570 AFY***	***+ 12,180 AFY***

Footnotes:
1. All results rounded after analysis to the nearest 10.
2. Theoretical need attributed solely to the portion of Riverside County associated with the lands proposed for spatial changes as part of GPA No. 960. See Section 4.1 for more details on how projections were derived.
3. Theoretical need associated with build out of the General Plan (including as updated pursuant to GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and mineral resources.

Source: Riverside County Planning Dept., Project application data, 2010. Riverside County, EIR No. 441, 2003, for service standards.

Table 4.19-BJ: Theoretical Wastewater Generated by Existing and Build Out Conditions

Land Use[1]	Generation Factors[6]	Theoretical Wastewater Generation (gpd)		Difference
		Existing Uses of Land[2]	General Plan Build Out With GPA No. 960[3]	
Residential	230 gpd per dwelling unit	5,850 du	16,570 du	+ 10,720 du
		1,346,200 gpd	**3,811,300 gpd**	**+ 2,465,100 gpd**
Commercial[4]	1,200 gpd per acre	70 acres	450 acres	+ 370 acres
		87,600 gpd	**534,000 gpd**	**+ 446,400 gpd**
Industrial[5]	1,500 gpd per acre	230 acres	280 acres	+ 50 acres
		351,000 gpd	**426,000 gpd**	**+ 75,000 gpd**
Total Area	**111,440 acres**	***1,784,800 gpd***	***4,771,300 gpd***	***+ 2,986,500 gpd***

Key: gpd = gallons per day

Footnotes:

1. All results rounded after analysis to the nearest 10, except values in gallons (gpd) rounded to nearest 100.
2. Theoretical need attributed solely to the portion of Riverside County associated with the lands proposed for spatial changes as part of GPA No. 960. See Section 4.1 for more details on how projections were derived.
3. Theoretical need associated with build out of the General Plan (as updated by GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and mineral uses.
6. All factors from Vallecitos Water District Master Plan, except for residential, which is from EIR No. 441.

Source: Riverside County Planning Dept., Project application data, 2010. For generation factors: Riverside County, EIR No. 441, 2003, and Vallecitos Water District Master Plan, Table 6-1, November 2010.

Thus, in order to focus on the areas where the proposed project would actually result in *new* development potential (i.e., potential impacts), a second scenario was developed. As shown in Tables 4.19-BI and 4.19-BJ, this second scenario includes only those areas proposed for a change that would result in an increase in future development density or intensity. This also includes all parcels in which an LUD was changed (except those being assigned to OS-CH due to their acquisition for open space conservation pursuant to the WRC-MSHCP; these parcels would be removed from development potential).

Lastly, the set of third tables, Tables 4.19-BM and 4.19-BN, show a "plan-to-plan" comparison between the build out conditions of the General Plan as it currently exists and then as it would be if GPA No. 960 were approved and fully implemented for water and wastewater, respectively. These tables indicate the relative effects of the project on long-range planning, rather than environmental impacts *per se*, and are provided for informational purposes and to allow comparison between build out outcomes.

On a comparative plan-to-plan basis, as shown in Tables 4.19-BK and 4.19-BL, the proposed project would result in a net decrease of roughly 46,000 AFY of potable water demand at countywide build out of the General Plan as amended by GPA No. 960. It would also generate roughly 16 mgd less wastewater at build out. Accordingly, it can reasonably be projected that services related to the production and conveyance of potable water (i.e., pumping, purification, storage, etc.) would be similarly decreased in proportion to the overall growth accommodated by the changes of the proposed project. The same assumption would apply to services and infrastructure associated with wastewater, e.g., wastewater treatment plant capacity, sludge disposal, etc.

Table 4.19-BK: Theoretical Water Supply for Areas of New Development Potential

Land Use[1]	Generation Factors	Theoretical Water Supply (AFY)		Difference
		Existing Uses of Land[2]	General Plan Build Out With GPA No. 960[3]	
Residential	1.01 AFY per dwelling unit	2,060 du	6,350 du	+ 4,290 du
		2,080 AFY	**6,410 AFY**	**+ 4,330 AFY**
Commercial[4]	3.50 AFY per acre	30 acres	370 acres	+ 340 acres
		110 AFY	**1,300 AFY**	**+ 1,190 AFY**
Industrial[5]	0.97 AFY per acre	110 acres	250 acres	+ 130 acres
		110 AFY	**240 AFY**	**+ 130 AFY**
Total Area	**10,690 acres**	***2,300 AFY***	***7,950 AFY***	***+ 5,640 AFY***

Footnotes:
1. All results rounded after analysis to the nearest 10.
2. Theoretical estimates for the land uses associated with the 10,690-acre area of known spatial project changes that would increase development intensity or density, or change an LUD in the Community Development Foundation.
3. Theoretical need associated with build out of the General Plan (including GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and mineral resource uses.

Source: Riverside County Planning Dept., Project application data, 2010, and EIR No. 441, 2003, for service standards.

Table 4.19-BL: Theoretical Wastewater Generation by New Development Potential Areas

Land Use[1]	Generation Factors[6]	Theoretical Wastewater Generation (gpd)		Difference
		Existing Uses of Land[2]	General Plan Build Out With GPA No. 960[3]	
Residential	230 gpd per dwelling unit	2,060 du	6,350 du	+ 4,290 du
		474,300 gpd	**1,459,800 gpd**	**+ 985,600 gpd**
Commercial[4]	1,200 gpd per acre	30 acres	370 acres	+ 340 acres
		38,400 gpd	**445,200 gpd**	**+ 406,800 gpd**
Industrial[5]	1,500 gpd per acre	110 acres	250 acres	+ 130 acres
		168,000 gpd	**369,000 gpd**	**+ 201,000 gpd**
Total Area	**10,690 acres**	***680,700 gpd***	***2,274,000 gpd***	***+ 1,593,400 gpd***

Footnotes:
1. All results rounded after analysis to the nearest 10, except values in gallons (gpd) rounded to nearest 100.
2. Theoretical estimates for the land uses associated with the 10,690-acre area of known spatial project changes that would increase development intensity or density, or change an LUD in the Community Development Foundation.
3. Theoretical need associated with build out of the General Plan (including GPA No. 960) for the same spatial areas.
4. Includes the following land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
5. Includes the following land uses: light industrial, heavy industrial and mineral resource uses.
6. All factors from Vallecitos Water District Master Plan, except for residential, which is from EIR No. 441.

Source: Riverside County Planning Dept., Project application data, 2010. For generation factors: Riverside County, EIR No. 441, 2003, and Vallecitos Water District Master Plan, Table 6-1, November 2010.

In terms of actual land use and changes to baseline conditions, future development accommodated by the proposed General Plan changes would increase the amount of potable water demand by about 12,000 AFY and wastewater generation by approximately 3 mgd, as shown in Tables 4.19-BG and 4.19-BH, respectively. The additional demand for water and wastewater treatment would be generated a numerous individual locations throughout Riverside County, however, not localized to any single water or sewer service area or groundwater basin. It would also increase in small increments across a roughly 50-year build out period. As such, impacts to any single provider, treatment facility or groundwater basin would be slight and much of this growth is already planned for in the existing General Plan and was analyzed under EIR No. 441, which was certified for the 2003 RCIP General Plan.

Table 4.19-BM: Comparison of Existing General Plan and Proposed Updated General Plan Theoretical Water Demands at County Build Out

Land Use	Current General Plan		General Plan as Amended by GPA No. 960		Difference in Demand (AFY)
	Build Out Total[1]	Water Demand[2]	Build Out Total	Water Demand[2]	
Residential	534,100 du	**539,500 AFY**	498,000 du	**503,000 AFY**	***- 36,500 AFY***
Commercial[3]	14,000 acres	**48,800 AFY**	12,500 acres	**43,600 AFY**	***- 5,200 AFY***
Industrial[4]	30,800 acres	**29,900 AFY**	26,500 acres	**25,700 AFY**	***- 4,200 AFY***
TOTALS	**4,013,400 acres**	***618,200 AFY***	***4,011,600 acres***	***572,300 AFY***	***- 45,900 AFY***

Footnotes:
1. All results rounded to the nearest 100.
2. The theoretical total water demand estimated to be generated annually at build out.
3 Includes land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
4 Includes the following land uses: light industrial, heavy industrial and mineral resources-related uses.

Source: Riverside County Planning Dept., Project application data, 2010, and EIR No. 441, 2003, for service standards.

Table 4.19-BN: Comparison of Existing General Plan and Proposed Updated General Plan Theoretical Wastewater Generations at County Build Out

Land Use	Current General Plan		General Plan as Amended by GPA No. 960		Difference (gallons per day, gpd)
	Build Out Total[1]	Wastewater Generated[2,5]	Build Out Total	Wastewater Generated[2,5]	
Residential	534,100 du	**122,848,800 gpd**	498,000 du	**114,540,000 gpd**	***- 8,308,800 gpd***
Commercial[3]	14,000 acres	**16,742,400 gpd**	12,500 acres	**14,953,200 gpd**	***- 1,789,200 gpd***
Industrial[4]	30,800 acres	**46,234,500 gpd**	26,500 acres	**39,693,000 gpd**	***- 6,541,500 gpd***
TOTALS	**4,013,400 acres**	***185,825,600 gpd***	***4,011,600 acres***	***169,186,200 gpd***	***- 16,639,500 gpd***

Footnotes:
1. All results rounded to the nearest 100.
2. The theoretical total volume of wastewater estimated to be generated annually at build out.
3. Includes land uses: commercial-retail (40%), commercial-tourist, commercial-office and business park.
4. Includes the following land uses: light industrial, heavy industrial and mineral resources uses.
5. All factors from Vallecitos Water District Master Plan, except for residential, which is from EIR No. 441.

Source: Riverside County Planning Dept., Project application data, 2010. For generation factors: Riverside County, EIR No. 441, 2003, and Vallecitos Water District Master Plan, Table 6-1, November 2010.

As mentioned above, Tables 4.19-BI and 4.19-BJ isolate just the areas of growth associated with GPA No. 960 that would potentially be greater than that originally planned under the existing General Plan. This highlights the changes that differ from the background levels already planned for under the existing General Plan. Once these areas are removed, the resultant scenario indicates that the future new development potential arising from GPA No. 960 would result in the need for approximately 5,640 AFY of potable water and the generation of roughly 1.6 million gpd of solid wastewater per year (before any recycling or water conservation programs). Because effects on water and sewer districts, as well as individual plants and infrastructure, are dependent upon geography (location), the water and wastewater data were further broken down by Area Plan.

Potable Water: The analysis indicates that most of the additional potable water supply for the project's future development potential would be needed in western Riverside County, particularly within the Elsinore Area Plan (approximately 1,600 AFY), Lakeview/Nuevo Area Plan (900 AFY) and Mead Area Plan (600 AFY), as a result of the new Rural Village Land Use Overlays associated with Good Hope and Meadowbrook, plus the revisions to the Lake Elsinore Environs (Lakeland Village) Policy Area. Most of these areas fall within WMWD's wholesale service area; the Lakeland Village and Meadowbrook overlays fall within Elsinore Valley Municipal Water District (a member agency of WMWD). The Good Hope Rural Village Overlay (within the Mead Valley Area Plan) is located in EMWD's service area, as is the Northeast Business Park overlay (within the San Jacinto Valley Area Plan). The Aguanga and Anza Rural Village Overlay (RVO) Study Areas are both in areas of REMAP without an existing water purveyor; a prominent reason why the increased densities/intensities associated with RVOs are proposed for elimination under GPA No. 960.

Within eastern Riverside County, the Palo Verde Valley Area Plan (with approximately 1,000 AFY) is the largest source of new demand, followed by the Western Coachella Valley Area Plan (roughly 600 AFY). The increased density/intensity proposed surrounding the Blythe Municipal Airport, as a result of ALUP adjustments, would be met through private groundwater wells exclusively. There is no municipal water purveyor in the area, other than the City of Blythe which does not, however, serve the unincorporated airport region. The majority of future development potential proposed within the Coachella Valley (the Western and Eastern Coachella Valley Area Plans) are located within the existing CVWD service area. This includes the existing and proposed fish farm (AG) designations around the Salton Sea.

Three other Area Plans (San Jacinto Valley, Southwest and Temescal Canyon) would need lesser additional water supplies (160 AFY, 60 AFY and 70 AFY, respectively). The remaining Area Plans would need little to no additional potable water (less than 50 AFY for Harvest Valley/Winchester, Eastern Coachella Valley and

REMAP; 0-20 AFY for the rest). These areas typically have much less development potential proposed. As an example, SWAP includes 540 acres proposed as Open Space-Rural development, which specifies 20-acre minimum lot sizes for new residences.

Wastewater: This chapter's analyses indicate that most of the additional wastewater that would be generated by the project's future development potential also would be needed predominantly in western Riverside County, for the same reasons as additional potable water would be needed. In particular, the Elsinore Area Plan are would need additional treatment capacity (roughly 479,300 gpd). Sanitary sewer services for this area are provided by EVMWD and WMWD. Similarly, the Lakeview/Nuevo Area Plan, served by EMWD for wastewater treatment, would need additional treatment capacity of roughly 223,500 gpd at build out and Mead Valley Area Plan (served by EVMWD and WMWD) would need 171,900 gpd.

The San Jacinto Valley and Jurupa would each need roughly 36,000 gpd additional wastewater treatment capacity. The Temescal Canyon, Southwest and REMAP Area Plans would need lesser amounts of additional capacity (16,500 gpd, 14,300 gpd and 9,500 gpd, respectively). The TCAP and SWAP regions would be served primarily by EMWD. The REMAP wastewater would be generated in areas without municipal wastewater treatment facilities. These wastes would be discharged to groundwater via OWTS (assuming such disposal was found suitable based on geology, hydrology and other limiting factors). The remaining areas would generate minor amounts of wastewater.

Within eastern Riverside County, the Palo Verde Valley Area Plan (generating approximately 219,400 gpd) is the largest source of additional wastewater. This region is not served by an existing municipal sanitary sewer system; all discharge to groundwater via OWTS and eventually reenter the water table fed by the Colorado River (see discussion under "City of Blythe" earlier in this chapter). In the unincorporated region of Coachella Valley, wastewater generated by future project development would be treated by CVWD. WCVAP would see roughly 128,400 gpd of additional wastewater generated, but ECVAP would have a 24,200 gpd decrease in development potential-driven generation. Thus, the net effect would be an overall increase of roughly 104,000 gpd. The remaining areas of the desert would generate negligible amounts of wastewater.

Hydrology: Lastly, with hydrology, future development potential increases could result in effects to the acreages indicated in Tables 4.19-BO, 4.19-BP and 4.19-BQ. Where sites are located within areas covered by an existing County Master Drainage Plan or Area Drainage Plan, all stormwater and surface flow systems would be required to be constructed pursuant to the standards of that plan. The infrastructure provided is normally either constructed by the site's developer or an in-lieu fee is paid. The applicable Area Drainage Plans set the specific standards for fees and construction.

In general, in areas with existing storm drain systems, future development would be required to connect to such systems. Where none exist, future developments would be required to provide sufficient onsite and/or offsite drainage facilities to ensure that no net flow increases occur.

Table 4.19-BO: Summary of Project Spatial Effects on Hydrology, by Water District

Wholesaler / Agency (all in acres)	Conserved	Neutral	Potent. Affect	Total Area (acres)
South Coast Hydrological Region				
EMWD Retail	1,920	4,090	2,170	8,170
Lake Hemet MWD	0	2,710	4	2,710
Rancho California WD[1]	580	0	80	660
Eastern MWD Subtotal	***2,500***	***6,800***	***2,250***	***11,550*** *10%*
WMWD Retail	120	0	160	280
Elsinore WD	0	0	10	10
Elsinore Valley MWD	230	210	1,230	1,680

Wholesaler / Agency (all in acres)	Conserved	Neutral	Potent. Affect	Total Area (acres)
Lee Lake WD	0	0	90	90
Rancho California WD[1]	0	0	140	140
Western MWD Subtotal	***350***	***210***	***1,630***	***2,190*** 2%
San Gorgonio Pass Water Agency[2]	***830***	***0***	***0***	***830*** <1%
Jurupa CSD[3, 7]	0	80	280	360
Rubidoux CSD[3]	0	0	330	330
Pine Cove WD[3]	0	0	40	40
Private (GW) Supplies[4]	11,200	78,010	1,520	90,730
Non-Importers Subtotal	***11,200***	***78,100***	***2,170***	***91,220*** 82%
South Coast Region Total	**14,880** 13%	**85,100** 76%	**6,050** 6%	**106,030** 95%
Colorado River Hydrological Region				
CVWD Retail	NA[8]	100	2,370	2,470
Mecca Sanitary Dist. / CVWD Other[5]	NA[8]	0	260	260
Coachella Valley WD Subtotal	***NA[8]***	***100***	***2,630***	***2,730*** *2%*
DWA Retail	NA[8]	0	10	10
Mission Springs WD	NA[8]	0	140	140
Desert Water Agency Subtotal	***NA[8]***	***0***	***150***	***150*** *<1%*
PVID[6]	NA[8]	0	610	610
Private (GW) Supplies[4]	NA[8]	660	1,240	1,900
Non-Importers Subtotal	***NA[8]***	***660***	***1,850***	***2,510*** *2%*
Colorado River Region Total	**NA[8]** 0%	**760** <1%	**4,630** 4%	**5,390** 5%
Grand Total	**14,880** 13%	**85,860** 77%	**10,680** 10%	**111,440** 100%

Key: CSD = Community Services District WA = Water Agency GW = Groundwater
MWD = Municipal Water District WD = Water District NA = Not Applicable

Footnotes: All data rounded to nearest ten.

1. Served by more than one wholesale provider, as indicated.
2. Provides wholesale water only, no retail customers.
3. District does not import water. It uses local water sources (groundwater and/or surface water) only.
4. Located outside of existing water agency and would require private groundwater supplies. See Table 4.19-BP.
5. SWP water (used for GW recharge of basins accessed by retail agencies).
6. District supplies only non-potable agricultural water; any potable water used would come from groundwater.
7. Includes Santa Ana Water Company (6 acres).

Source: Riverside County Planning and GIS Depts., project application and data analysis, 2011.

Table 4.19-BP: Summary of Project Spatial Effects to Areas Outside Water Districts

Wholesaler / Agency (all in acres)	Conserved	Neutral	Potent. Affect	Total Area (acres)
South Coast Hydrological Region				
SJVAP	440	790	0	1,230
SWAP	0	0	540	540
Western Riverside County Subtotal	***440***	***790***	***540***	***1,770***
RCBAP	40	0	50	90
REMAP	10,720	77,220	930	88,870
Pass and Mountains Area Subtotal	***10,760***	***77,220***	***980***	***88,960***
South Coast Region Total	**11,200** 12%	**78,010** 84%	**1,520** 2%	**90,730** 98%
Colorado River Hydrological Region				
ECVAP	NA[8]	660	640	1,300
PVVAP	NA[8]	0	440	440
WCVAP	NA[8]	0	150	150
FAR EAST (NO AREA PLAN)	NA[8]	0	10	10
Eastern Riverside County Subtotal	***NA[8]***	***660***	***1,240***	***1,900***
Colorado River Region Total	**NA[8]** 0%	**660** <1%	**1,240** 4%	**1,900** 2%
Grand Total	**11,200** 12%	**78,670** 85%	**2,760** 3%	**92,630** 100%

Key: CSD = Community Services District WA = Water Agency GW = Groundwater
MWD = Municipal Water District WD = Water District NA = Not Applicable

Footnotes: All data rounded to nearest ten.

1. Served by more than one wholesale provider, as indicated.
2. Provides wholesale water only, no retail customers.

3. District does not import water. It uses only local water sources (groundwater and/or surface).
4. Located outside of existing water agency and would require private groundwater supplies. See Table 4.19-BF.
5. SWP water (used for GW recharge of basins accessed by retail agencies).
6. District supplies only non-potable agricultural water; potable water used would be from groundwater.
7. Includes Santa Ana Water Company (6 acres).

Source: Riverside County Planning and GIS Depts., project application and data analysis, 2011.

Table 4.19-BQ: Summary of Project Spatial Effects by County Master Drainage Plan

Master Drainage Plan (all in acres)		Conserved	Neutral	Potent. Affect	Total Area (acres)
South Coast Hydrological Region					
Zone 1	Box Springs	---	---	---	**0**
	Day Creek	---	---	---	**0**
	Glen Avon	---	---	---	**0**
	Jurupa / Pyrite	---	---	---	**0**
	Rubidoux	0	0	136	**136**
	Southwest Riverside	0	0	10	**10**
	University	< 1	0	0	**< 1**
Zone 2	Eastvale	0	0	41	**41**
	Mockingbird Canyon	0	0	5	**5**
	Norco	---	---	---	**0**
Zone 3	Sedco	---	---	---	**0**
	West Elsinore	0	0	83	**83**
Zone 4	Good Hope	21	0	199	**221**
	Green Acres	---	---	---	**0**
	Homeland	0	0	13	**13**
	Lakeview - Nuevo	136	0	10	**146**
	Little Lake	0	1,263	3	**1,267**
	Moreno	506	0	82	**588**
	Mead Valley	0	0	5	**5**
	Perris Valley	---	---	---	**0**
	Salt Creek	---	---	---	**0**
	West Hemet	---	---	---	**0**
	Winchester	---	---	---	**0**
Zone 5	Banning	---	---	---	**0**
	Beaumont	---	---	---	**0**
Zone 7	Anza / Wilson Creek	0	8,134	0	**8,130**
	Murrieta Creek	770	0	854	**1,624**
	Wildomar	---	---	---	**0**
	Within West MDPs - Subtotal	***1,434*** 1%	***9,398*** 8%	***1,450*** 1%	***12,282*** 10%
	Areas Not Within A Western MDP	13,446	75,702	4,600	**93,748**
	Outside of West MDPs - Subtotal	***13,446*** 12%	***75,702*** 68%	***4,600*** 4%	***93,748*** 84%
	South Coast Region Total	***14,880*** *13%*	***85,100*** *76%*	***6,050*** *5%*	***106,030*** *95%*
Colorado River Hydrological Region					
Zone 6	Cathedral City	NA	---	---	**0**
	Desert Hot Springs	NA	---	---	**0**
	East Wide Canyon, Long Cyn and Tribs.	NA	5	253	**258**
	Palm Springs	NA	---	---	**0**
	Within East MDPs - Subtotal	***NA***	***5*** <1%	***253*** <1%	***258*** <1%
	Areas Not Within An Eastern MDP	NA	755	4,377	**5,152**
	Outside of East MDPs - Subtotal	***NA*** 0%	***755*** <1%	***4,377*** 4%	***5,152*** *5%*
	Colorado River Region Total	***NA*** *0%*	***760*** *<1%*	***4,630*** *4%*	***5,410*** *5%*
	Grand Total	**14,880** 13%	**85,860** 77%	**10,680** 10%	**111,440** 100%

Footnotes: All data rounded to nearest whole acre. NA = Not Applicable

Source: Riverside County Planning and GIS Depts., project application and data analysis, 2011. MDP data from Riverside County Flood Control and Water Conservation District, 2012.

C. Legal Background on Water Supply Adequacy

As explained above in Section 4.19.2, the California courts have provided specific guidance with respect to the requirements of a water supply analysis that is undertaken for a long-range development project or other long-range land use planning decision such as a general plan update. Thus, it is in light of this specific guidance that the CEQA thresholds of significance for water supply issues must be evaluated for purposes of GPA No. 960. Indeed, the California Supreme Court has stated: "Requiring certainty when a long-term, large-scale development project is initially approved would likely be unworkable, as it would require water planning to far outpace land use planning. Examination of other state statutes specifically addressing the coordination of land use and water planning supports our conclusion [that] CEQA should not be understood to require assurances of certainty regarding long-term future water supplies at an early phase of planning…." (Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, 2007, 40 Cal.4th 412, 432.)

Further, the Supreme Court has also stated: "To interpret CEQA itself as requiring such firm assurances of future water supplies at relatively early stages of the land use planning and approval process would put CEQA in tension with these more specific water planning statutes.…[T]o satisfy CEQA, an EIR for a specific plan need not demonstrate certainty regarding the project's future water supplies." (*Id.* at 432, 437-438; see also Watsonville Pilots Association v. City of Watsonville (2010) 183 Cal.App. 4th 1059, 1090-1094.)

To the extent these standards were applied to a specific plan in the Vineyard case, they certainly apply to the general plan stage of land use decision-making as proposed by GPA No. 960. Of particular relevance to the long-term water supply planning horizon analyzed in this EIR for purposes of GPA No. 960, the Court of Appeal recently held: "Some level of uncertainty is a permanent, inherent feature of modern water management. It arises from a wide range of scientific and legal regulatory factors that cannot be avoided. Water management is subject to the vagaries of climate, competing demands from agricultural, industrial and residential uses, environmental constraints and overlapping regulatory regimes at both the federal and state levels." (Sonoma County Water Coalition v. Sonoma County Water Agency, 2010, 189 Cal.App.4th 33, 46).

All of these factors must be taken into consideration when examining the water analyses and conclusions presented in this EIR since this project and its EIR encompasses a wide variety of proposed changes affecting thousands of acres across numerous jurisdictional (and hydrological) boundaries. As such, specific water assessments were not performed at this programmatic level nor are specific water supplies identified at this time (beyond that generally addressed by the UWMPs cited herein).

In the more recent case of Watsonville Pilots Association v. City of Watsonville (2010, 183 Cal.App. 4th 1059), the EIR for the Watsonville Vista 2030 General Plan was challenged on various grounds, including water supply. Quoting from the Vineyard decision, the Court of Appeal in Watsonville Pilots upheld the water supply analysis on various grounds and determined that, "The burden of identifying likely water sources for a project varies with the state of project approval involved; the necessary degree of confidence involved for approval of a conceptual plan is much lower than for issuance of building permits." The EIR in that case acknowledged that water supply for the general plan area would be provided from an already overdrafted groundwater basin. The court found that the EIR contained considerable information and discussion of how the overdraft may be addressed in the future and stated: "It is not necessary for an EIR for a general plan to establish a likely source of water. Such a conceptual EIR need only adequately address the reasonably foreseeable impacts of supplying water to the project, note any uncertainties that preclude the identification of future water sources and discuss the reasonably foreseeable alternatives and environmental impacts of those alternatives."

4.19.8 Water Resources – Impacts and Mitigation

A. Would the project result in water supplies insufficient or unavailable to serve the project from existing entitlements and resources, or result in the need for new or expanded entitlements?

Impact 4.19.A – Result in Insufficient Water Supply: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in demand for water supplies where such are insufficient or unavailable to serve the project from existing entitlements and resources, thus necessitating new or expanded entitlements in order to adequately serve future development, or result in development in locations in which water supply adequacy cannot be ascertained. Due to the unavailability of potable water in some areas, as well as the variability and unpredictability of supply adequacy in light of future growth, as well as environmental and regulatory constraints, adequate water supplies for all forecast future development cannot be assured. As a result, within certain areas of Riverside County where sufficient water supply is not available or cannot be assured into the future, impacts would be significant and unavoidable.

1. Analysis of Impact 4.19.A

As shown in Table 4.19-BO, future development accommodated by GPA No. 960 has the potential to occur within and affect 111,400 acres of unincorporated Riverside County, including approximately 18,800 acres within existing water district service area boundaries (affecting 15 existing water districts) and 92,600 acres outside of water districts. Within the three categories of spatial project components, the 'Potentially Affected' area, which has the greatest potential to affect water supplies (because it generally represents foreseeable areas of increasing development potential), totals 7,900 acres and (per Table 4.19-BK) is associated with a *theoretical* water demand increase of approximately 5,600 AFY above baseline conditions at project build out.

As described in Section 4.19.4 (E-I), some of the affected water districts have forecast future water demands in excess of the supply available. Where demand for water exceeds supply, a significant impact would occur. Unavailability or unpredictability of imported water supplies, overdraft of groundwater basins, increasing demand due to growth in Riverside County, as well as environmental factors, such as climate change effects and drought, all play roles in limiting the availability of water within Riverside County. In some remote locations, particularly in the far eastern desert beyond the Coachella Valley and the region south of the San Jacinto Mountains between Anza and Coachella Valley, lack of groundwater and/or lack of delivery infrastructure also are limiting factors. For all of these reasons, the impact of water supply insufficiency is deemed significant and unavoidable at this time.

In total, future development accommodated by the project would increase demand for water services to a degree that exceeds the limits of existing and currently planned facilities to provide. Water agencies generally operate on a 'will serve' capacity – building facilities and hiring staff based on demand projections for their service areas. Most of the larger water agencies plan their facilities using a 5-year horizon, usually in the form of a five-year capital improvements program that is updated annually. Because of this, any project that uses a planning horizon of more than five years is likely to exceed the limits of facilities planned by local water agencies. Such is the case with the proposed project, the build out of which spans a nearly 50-year period.

Options available to address future water shortfalls include both infrastructure projects (such as storage facilities and water reclamation plants) and water management strategies (such as conservation practices) that affect how water is used. Also, water districts urban water management plans only project water supply and demand out 25 years (currently to 2035). Thus, any assumptions for future water supplies beyond 2035 are also speculative.

The existing General Plan, as well as GPA No. 960, includes policies that establish and reiterate appropriate water management strategies at the county level, including conservation, collection of information, decreasing demand, outreach and education programs, assurances of adequate groundwater recharge areas and water supply monitoring. See discussion in Sections 4.19.5.D and E. No adverse impacts are anticipated from such strategies, as they would reduce overall water demand and, in some instances, supply additional sources of water for irrigation and other non-potable uses. Infrastructure projects are likely to be proposed both by the County of Riverside and by water suppliers. The construction of additional water storage facilities, as well as water reclamation plants, would be subject to additional environmental analysis to determine the project's specific impacts. Conservation and recycled water sources would not further deplete groundwater supplies or increase reliance on imported water.

Securing additional imported water is another way to increase the water supply. Such water could come from existing imported sources (i.e., the Colorado River or other State Water Project sources), or could come from yet-to-be negotiated sources. The impacts of drawing water from sources outside the region would require further analysis if such proposals were undertaken. They could include impacts to biological resources (i.e., from decreased water flow in rivers), impacts to other jurisdictions that rely on that water source (e.g., as water supply or for groundwater recharge), growth-inducing impacts and other environmental and economic impacts.

Nevertheless, in the absence of a definitive identification of future water supply, potential impacts associated with water supply and demand must be considered significant and unavoidable.

2. Regulatory Compliance Affecting Impact 4.19.A

The adverse effects associated with potential demands on existing water resources, or need for new entitlements, would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to insufficient water supplies.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described further under Impact 4.19.C, this far-reaching collection of regulations address a variety of water resource issues. The regulations encompassed in the Clean Water Act provide strong water quality protection, including protecting watersheds from runoff and erosion pollution, polluting discharges and hydrological disruptions. These protections ensure that the water quality of is protected and that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

Federal Safe Drinking Water Act: Compliance with the EPA's minimum standards set under this act serves to protect tap water from potentially harmful contaminants and regulates pollutants that could affect groundwater basins, in particular 'sole source aquifers.' It also protects public health by limiting the levels of contaminants in drinking water. Thus, compliance with this act helps protect water quality and viability of existing and future drinking water supplies.

California Porter-Cologne Water Quality Control Act of 1970: As described more fully under Impact 4.19.C, compliance with the various regulations and programs of this act serves to protect surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbances and other activities

that would adversely affect surface or groundwater. Together these measures protect water quality and ensure that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

California Safe Drinking Water Act: As described further under Impact 4.19.C, this act protects water quality, particularly for groundwater drinking supplies. Thus compliance with this act helps ensure water supplies of suitable water quality are available when needed for public consumption.

CCR Title 22 - Recycled Water: Chapter 4 of CCR Title 22 establishes recycled water quality standards and treatment reliability criteria dependent upon the end use of recycled water to protect public health. Both secondary- and tertiary-treated wastewater can meet Title 22 standards, dependent upon the end use of the water. Utilization of recycled water for groundwater recharge is reviewed by DHS on a case-by-case basis. Processing of recycled water in compliance with these standards would ensure that additional water supply is made available and that the available water meets all applicable state and federal water quality standards. Increased water conservation and use of recycled water would also help reduce reliance on imported water supplies and lessen draw-down of groundwater, aiding water districts in ensuring adequate water supply availability.

Water Conservation Act (SBX 7-7): This law requires that the State of California reduce urban per-capita water use statewide by 10% by the end of 2015 and 20% by the end of 2020. In addition, agricultural water suppliers must adopt agricultural water management plans by the end of 2012 and then update their plans by the end of 2015 and every five years thereafter. Compliance with this act would help reduce the amount of water consumed by various users, including new urban development. The result would be to make additional water (potentially up to 20%) available for use. Increased water conservation would also help reduce reliance on imported water supplies and lessen draw-down of groundwater. This would also help increase the available water supply needed to serve Riverside County.

Senate Bill 610: As explained in Section 4.19.5, all future implementing projects of a certain size or character are required to prepare a water supply assessment (WSA). This generally includes those having a water demand equivalent to a project with 500 dwelling units or more, but also includes a variety of other specific projects as defined by the WSA statute (see CWC Section 10912(a)). Generally, a WSA must include an analysis of whether the total projected water supplies available to the water provider during normal, single-dry and multiple-dry years over the next 20-year period are sufficient to meet the projected water demand associated with the project, in addition to existing and planned future uses. Additional analysis is required if the water supplies identified to serve the project include groundwater. The WSA statute provides additional means for the County of Riverside and cities to evaluate water supply sufficiency for certain specific projects that may be proposed pursuant to GPA No. 960.

Senate Bill 221: Similar to the requirements of SB 610, CGC Sections 65867.5 and 66473.7, generally require the County of Riverside and cities to include as a condition of approval for any tentative tract map or development agreement that includes a subdivision (defined as a residential development containing 500 or more dwelling units) a requirement that a sufficient water supply is or will be available to serve the subdivision. The availability of a sufficient water supply must be based on written verification from the public water system that will provide the water service. As with the standard provided by SB 610, a "sufficient water supply" under SB 221 is the total water supplies available to the water provider during normal, single-dry and multiple-dry years within a 20-year projection that will meet the projected demand of the proposed subdivision, in addition to existing and planned future uses, including agricultural and industrial. The water provider's verification must be based on substantial evidence, such as water supply contracts, capital outlay programs and regulatory permits and approvals regarding the water provider's right to and capability of delivering the necessary project supply. Compliance with this law would help minimize impacts to water supplies by providing a basis upon which the County of Riverside and

cities could determine not to approve certain residential development projects if sufficient water supplies are not available to serve them.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts to water supplies. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: Among other things, this ordinance includes measures to ensure water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater. See Impact 4.19.D for more information.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 617– Hazardous Substances (Regulating Underground Storage Tanks): This ordinance prevents long-term threats to the public health, water quality and local water supplies (surface and groundwater) from underground tank systems.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance protects water quality, storm drains and surface waters by prohibiting the discharge or deposition of any sewage, sewage effluent or non-hazardous waste, treated or untreated, into any streams or bodies of water above or below the ground, within Riverside County. Thus, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: This ordinance establishes minimum standards for wells to protect underground water resources and provide safe water within Riverside County by requiring county permits for these activities. As a result, Ordinance No. 682 protects water supplies, as well as water quality, for groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance protects groundwater water quality in the Quail Valley region of Riverside County by prohibiting new septic systems and modifications to existing systems. This improves water supplies, water and wastewater facilities and water quality for both surface water and groundwater in the Quail Valley region, as well as Canyon Lake (impaired due to sewage runoff) and the water users relying on it as a supply source.

Ordinance No. 859 – Water-Efficient Landscape Requirements: By requiring a reduction in the amount of water used for landscape irrigation, Ordinance No. 859 protects existing water supplies (surface and groundwater). And by limiting water applications, it also helps minimize water runoff and water erosion in landscaped areas.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems. As a result, this ordinance serves to protect water supplies and groundwater quality in the region. It does so by prohibiting additional septic systems.

c. Compliance with Existing General Plan Policies

Implementation of the following water resource-related General Plan policies would help reduce the effects of future development on water supply, but would not fully reduce the significant impact associated with supply insufficiency or the need for new water entitlements. See Section 4.19.5.D for full text of each of these policies.

Policies OS 1.1 and 1.3: These policies address water supply issues at the county level and when considering projects for approval.

Policies OS 2.2 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and decreases draw-down of local groundwater basins.

Policies LU 5.3, 21.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources are adequate for the proposed level of development.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water resources and supplies. See Section 4.19.5.D for full text of each of these.

Policies OS 1.4, 2.3 and 2.4: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and decreases draw-down of local groundwater basins.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use means reducing the need for imported water supplies and decreasing draw-down of local groundwater basins.

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

These specific mitigation measures from EIR No. 441 address water supplies directly: existing Mitigation Measures 4.17.2A and 4.17.3A (described in nder Impact 4.19.B), would also aid in reducing impacts to water supplies.

Existing Mitigation Measure 4.17.1C: Development within unincorporated areas of the County [of Riverside] shall not use water of any source of quality suitable for potable domestic use for non-potable uses, including cemeteries, golf courses, parks, highway landscaped areas, industrial and irrigation uses, or other non-domestic use if suitable recycled water is available as provided in Sections 13550-13566 of the [California] Water Code and/or Sections 65591-65600 and 65601-65607 of the Public Resource Code. Prior to the issuance of any land use permit, the County [of Riverside] shall determine to what extent and in which manner the use of recycled water is required for individual water projects. Future development shall be designed, constructed and maintained in accordance with the recycled water measures mandated by the County [of Riverside].

Existing Mitigation Measure 4.17.1D: Riverside County shall enforce compliance with federal, state and local standards for water conservation within residential, commercial or industrial projects. Prior to approval of any development within the County [of Riverside], the applicant shall submit evidence to Riverside County that all applicable water conservation measures have been met.

Existing Mitigation Measure 4.17.1E: For any development within the [DWR-designated] Palo Verde Planning Area supplied with water from the Colorado River, the project applicant shall enter into a contract with the City of Needles [the LCWSP water contractor], pursuant to the Lower Colorado Water Supply Project program. Evidence of such a contractual agreement shall be submitted to the County [of Riverside] prior to the approval of any development entitlement for the project.

3. Finding on Significance for Impact 4.19.A

Implementation of the above regulations, General Plan policies and existing EIR No. 441 mitigation measures would reduce or minimize potential impacts to water supply associated with future development accommodated by GPA No. 960. However, they do not fully mitigate potential significant impacts that would arise from project-driven future increases in demand for and use of water. Nor do they provide the means to ensure water supplies are secured for the proposed areas. Thus, even with the above measures, impacts to water supply would remain significant and unavoidable.

B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Impact 4.19.B – Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would increase population within Riverside County, triggering increased water demands on areas relying on groundwater supplies. This is particularly likely in areas of Riverside County without municipal water service or other access to imported water supplies or where new development would rely solely on groundwater for supply. Increased and new uses may also conflict with groundwater management plans, monitoring programs or lead to groundwater extractions that individually or cumulatively exceed the groundwater basins' safe yields or cause a net deficit in the aquifer volume or reduction in the local water table level. In addition, there is the potential for future development accommodated by the project to occur in vacant areas that are currently available for groundwater recharge. Development of such areas would reduce the area available for aquifer recharge and could substantially interfere with the process of groundwater recharge. A number of regulatory policies and

programs address groundwater impacts. However, where groundwater recharge is insufficient, such increased demand on aquifers would result in significant and unavoidable impacts.

1. Analysis of Impact 4.19.B

Groundwater levels in many areas of Riverside County were once much higher than they are today. As groundwater has been and continues to be extracted at a faster rate than it is replenished, the problems associated with overdraft and the lowering of the groundwater table are likely to continue. In the search for new water supplies, groundwater of marginal quality, high in salts or organic compounds, may be extracted and treated to meet drinking water standards and distributed for domestic and municipal uses. This action risks the overuse and overdraft of groundwater in basins with little history of extensive extraction. Increasing demands and costs, as well as unpredictability in the availability of imported water would make it more attractive for water suppliers to exploit the local, and sometimes marginal quality, groundwater supplies.

Several areas of Riverside County have basins where water rights, including amounts of groundwater extraction, have been determined by adjudication. Adjudication ensures a level of consistency and certainty that can be used in long-term water supply planning for each agency and/or party named in the judgment. Without an area-wide groundwater management and monitoring program, there is little surety of long-term supply. When a single agency has the power and responsibility to manage the groundwater resources of an area, it can change its management strategy at any time. Because of this, there continues to be a risk of overdraft in the non-adjudicated groundwater basins in Riverside County as demand for water increases. In adjudicated basins, however, where extraction limits are met, additional water needs beyond those limits would have to be met by importing water from elsewhere, increasing conservation and also reclaiming or recycling water.

The combination of increased demand for water associated with the growth envisioned by the project, unpredictability and the cost of imported water supply, variability in long-term supply scenarios in non-adjudicated basins, exploitation of new groundwater sources and the continuing pattern of basin overdraft, would all result in or contribute incrementally to substantially decreasing groundwater supplies. In addition, an assessment of future water supply adequacy beyond the year 2035 (including groundwater) is speculative. Since at present roughly one-third of Riverside County's water demand is met by groundwater, this unpredictability and variability mean that significant impacts associated with project build out over the next 50-plus years cannot be ruled out.

The water that recharges aquifers (groundwater basins) comes from precipitation, excess irrigation, incidental percolation from reclaimed water ponds and recharge of off-season imported water in recharge ponds managed by water agencies. The majority of groundwater recharge comes from precipitation. Efficient recharge from precipitation depends on a variety of conditions including large areas of permeable surfaces free from oil and grease, and relatively slow flow of water across that surface so infiltration of water into groundwater basins can occur.

Increased development reduces the amount of permeable surfaces suitable for recharge, increases runoff and the subsequent flow of water in streams, and increases the amount of oil and grease and other non-point source pollutants that enter streambeds and other recharge areas. Groundwater resources in Riverside County are defined by their quality as well as quantity. Most groundwater basins within Riverside County store local and imported water to meet seasonal and drought-year demand. With a typical groundwater recharge program, groundwater is artificially replenished in wet years with surplus imported water. Water is withdrawn from groundwater reserves during periods of drought or during emergency situations. Groundwater recharge programs may utilize reclaimed water during recharge activities. Groundwater recharge programs enhance a region's ability to meet water demand during years of short supply and increase the reliability of local water supplies. Thus,

increased development of buildings, parking lots, roads, roofs and other impervious surfaces could also directly affect groundwater levels by decreasing water infiltration and groundwater recharge rates.

2. Regulatory Compliance Affecting Impact 4.19.B

The adverse effects associated with potential demands on groundwater and effects on groundwater recharge would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce groundwater impacts.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described under Impact 4.19.C below, the regulations encompassed in the Clean Water Act ensure that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

Federal Safe Drinking Water Act: Compliance with this act helps protect water quality and viability of existing and future drinking water supplies, including those from groundwater sources.

California Porter-Cologne Water Quality Control Act of 1970: As described under Impact 4.19.C, compliance with this act protects surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbance and other activities that would adversely affect surface or groundwater. These programs protect water quality and ensure that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

CCR Title 22 - Recycled Water: These recycled water standards would help ensure additional water supply availability. Increased water conservation and use of recycled water would help reduce reliance on imported water supplies and lessen draw-down of groundwater.

Water Conservation Act (SBX 7-7): Compliance with this act would help reduce the amount of water consumed by various users, including new urban development, and would thus make additional water (potentially up to 20%) available for use. Increased water conservation would also help reduce reliance on imported water supplies and lessen draw-down of groundwater.

Senate Bill 610: As explained in Section 4.19.5, all future implementing projects of a certain size or character are required to prepare a water supply assessment (WSA). The WSA statute provides an additional means for the County of Riverside and cities to evaluate water supply sufficiency for certain specific projects that may be proposed pursuant to GPA No. 960.

Senate Bill 221: As explained in Section 4.19.5, compliance with this law would minimize impacts to water supplies by providing a basis upon which the County of Riverside and cities could determine not to approve certain residential development projects if sufficient water supplies are not available to serve them.

b. Compliance with Existing Riverside County Regulations

Compliance with these regulations would prevent or reduce significant impacts to groundwater. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these

policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: This ordinance establishes minimum standards for construction, reconstruction, abandonment and destruction of wells in order to protect underground water resources and provide safe water within Riverside County by requiring county permits for these activities. It also sets standards for these activities pursuant to those "recommended in the Bulletins of the California Department of Water Resources" and contains prohibitions on placing wells where sources of pollution or contamination could contaminate or pollute the well water. The ordinance also sets a variety of water quality standards for water supply wells pursuant to the standards for constituents required in the California Code of Regulations, Title 22, "Domestic Water Quality and Monitoring," and requires testing of all individual domestic water wells to assess water quality compliance. Through these means, Ordinance No. 682 protects water supplies, as well as water quality, for groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance was enacted to protect the water quality of groundwater in the Quail Valley region of Riverside County by prohibiting both new septic systems and modifications to existing systems. The prohibitions and restrictions of Ordinance No. 856 serve to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater in the Quail Valley region, and Canyon Lake (a designated 'impaired waterbody' due to sewage runoff). It also protects the health of water users relying on it as a water supply source.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems by prohibiting new septic systems and expansions or modifications of existing septic systems within the region. It serves to protect water supplies and groundwater quality in the region. It does so by prohibiting additional septic systems.

c. Compliance with Existing General Plan Policies

Implementation of the following water resource-related General Plan policies would help reduce the effects of future development on groundwater, but would not fully reduce significant impacts associated with increasing use of groundwater. See Section 4.19.5.D for full text of each of these policies.

Policies OS 1.1 and 1.3: These policies address water supply issues at the county level and when considering projects for approval.

Policies OS 2.2 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and decreases draw-down of local groundwater basins.

Policies OS 4.1-4.3: These policies address programs to support aquifer recharge which is necessary to prevent excessive draw-down of groundwater basins.

Policies OS 4.4 and 4.8: These policies address protection of natural drainages which contribute to aquifer recharge and aid in protecting groundwater basins from draw-down.

Policies LU 5.3, 21.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources are adequate for the proposed level of development.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water resources. See Section 4.19.5.D for full text of each of these policies.

Policies OS 1.4, 2.3 and 2.4: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and decreases draw-down of local groundwater basins.

Policies OS 4.5 and 4.6: These policies address protection of natural drainages which contribute to aquifer recharge and aid in protecting groundwater basins from draw-down. In particular, policy OS 4.6 addresses the retention of stormwater runoff within a development site in order to both prevent erosion offsite and facilitate groundwater recharge onsite.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use means reducing the need for imported water supplies and decreasing draw-down of local groundwater basins.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately, surface and groundwater fed by stormwater runoff.

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the above, several specific mitigation measures from EIR No. 441 address groundwater supplies and recharge. Existing Mitigation Measures 4.17.1C, 4.17.1D and 4.17.1E, listed under Impact 4.19.A, would also aid in reducing impacts to groundwater supplies.

Existing Mitigation Measure 4.17.2A: In areas where it is not practical to conserve soils suitable for recharge (as determined by the Riverside County Flood Control and Water Conservation District), water harvesting and recharge facilities shall be built within the same groundwater basin in which the recharge area is lost. The construction of 'replacement' recharge areas shall equal the amount of recharge area lost and/or shall incorporate equipment or facilities capable of replacing (at an equal volume) the amount of groundwater recharge capacity lost as a result of development. The identification, designation, location or installation of 'replacement' groundwater recharge capacity shall be reviewed and approved by the Riverside County Flood Control and Water Conservation District prior to the issuance of grading permits.

Existing Mitigation Measure 4.17.3A: New development that includes more than one acre of impervious surface area (including roofs, parking areas, streets, sidewalk, etc.) shall incorporate features to facilitate the onsite

infiltration of precipitation and/or runoff into groundwater basins. Such features shall include (but not be limited to): natural drainage systems (where economically feasible), detention basins incorporated into project landscaping; and the installation of porous areas within parking areas. Where natural drainage systems are utilized for groundwater recharge, they shall be managed using natural approaches (as modified to safeguard public health and safety). Groundwater recharge features shall be included on development plans and shall be reviewed by the Riverside County Building and Safety Department and/or Riverside County Flood Control and Water Conservation District prior to the issuance of grading permits.

3. Finding on Significance for Impact 4.19.B

While the above regulations, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 would reduce or minimize potential impacts to groundwater usage and its recharge as a result of future development accommodated by GPA No. 960, they do not address specific groundwater basin usage or the site-specific groundwater recharge impacts that would result indirectly from implementation of the proposed project. In some cases, such onsite recharge mitigation may be infeasible for insufficient to offset the impact to groundwater. In addition, agency data demonstrating groundwater supply and demand into the future only extends to 2035, thus making supply assumptions for this project to full build out (approximately 2060) tenuous at best. Thus, even with the above measures, impacts to groundwater and groundwater recharge would remain significant and unavoidable.

C. Would the project substantially degrade water quality?

Impact 4.19.C – Substantially Degrade Water Quality: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in an increased reliance on lower-quality water sources either from the Colorado River or marginal groundwater sources and would contribute to increased levels of pollutants in local/regional groundwater reserves and local/regional surface waters. These conditions would contribute to the deterioration of the quality of drinking water in Riverside County. Compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, however, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.C:

Water quality problems in Riverside County have occurred due to inadequate subsurface sewage disposal and waste disposal management of the Santa Ana River watershed, agricultural operations (e.g., agricultural runoff), the buildup of sediment resulting from construction-related erosion, and urban stormwater runoff. The State of California's Regional Water Quality Control Boards (RWQCBs) provide water quality policy guidance for Riverside County (e.g., via NPDES general permits and MS4 permits). In particular, the NPDES permit process mandates the use of BMPs to minimize the adverse effects of pollution and to protect water quality.

Future development accommodated by the project would result in increased population in Riverside County. This increase in population would increase the amount of wastewater generated, decrease the quality of treated wastewater (where wastewater is not fully processed) and increase the need for effluent disposal. The effluent, when discharged into a stream, or other surface water body, has the potential to degrade the quality of the water in the receiving water body. Additionally, stormwater runoff from urban areas contains a variety of organic and inorganic substances that may reduce the quality of groundwater when introduced into their aquifers. Non-consumptive beneficial water uses, such as contact and non-contact recreation, warm and cold water habitat, and habitat for sensitive plant/animal species, may also be affected by degradation of water quality resulting from the future development.

Currently, Riverside County relies on imported water and local groundwater for its municipal water supplies. Desalted groundwater is also being pursued as a supply option in the western Riverside County. The amount of water required for agricultural uses could be reduced by improving the efficiency of irrigation procedures and/or by implementing various water conservation practices in agricultural operations. If the amount of water required for agricultural uses is reduced, it is anticipated that more water (e.g., from the Colorado River) would be available for urban use. However, Colorado River water is generally of lower quality than water supplies from Northern California. In addition, during periods when water supply availability has been reduced (e.g., during droughts), an increase in the withdrawal of water from wells previously shut down because of contamination may also occur. To maintain acceptable water quality, water from these sources must be blended with water from non-contaminated sources. While water supplies resulting from this 'blending' process must continue to meet all water quality standards, it would generally be of lower overall quality than water supplied solely from non-contaminated sources. The increased usage of water from the Colorado River and blended water would result in general deterioration of water quality in Riverside County.

2. Regulatory Compliance Affecting Impact 4.19.C

The adverse water quality effects associated with future development accommodated by the project would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following regulations would help reduce impacts due to water quality.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): This far-reaching collection of laws address a variety of water resource issues. It contains regulatory provisions that impose progressively more stringent requirements on industries and cities to reduce pollution and meet the goal of zero discharge of pollutants. In particular, compliance with the Clean Water Act's Section 303 standards and requirements, protects existing water quality and establishes programs to restore waterbodies with impaired water quality. Compliance with Section 401 requires activities and facilities that would discharge pollutants into waters of the U.S. to obtain a State of California water quality certification proving that the activity complies with all applicable water quality standards, limitations and restrictions. Lastly, compliance with Section 404 of the act is designed to ensure that the chemical, physical and biological functions of the waters are protected. It includes mandatory measures to avoid, minimize and mitigate impacts. Together, these regulations provide strong water quality protection, including protecting watersheds from runoff and erosion pollution, polluting discharges and hydrological disruptions. These protections ensure that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

Federal Safe Drinking Water Act: Compliance with the EPA's minimum standards set under this act serves to protect tap water from potentially harmful contaminants. This act regulates pollutants that could affect groundwater basins, in particular 'sole source aquifers.' All owners or operators of public water systems must comply with these primary standards, which protect public health by limiting the levels of contaminants acceptable in drinking water. Compliance with this act helps protect water quality and the viability of existing and future drinking water supplies.

California Porter-Cologne Water Quality Control Act of 1970: Administered by the State Water Resources Control Board and the Regional Water Quality Control Boards, this act regulates water pollution within California by protecting water quality and beneficial uses of all state waters. It implements the CWA at the state level

through the adoption of various plans and policies, the regulation of discharges and waste disposal sites, and the cleanup of hazardous materials and other pollutants. In particular, it is the basis for the State of California's enforcement and administration of the NPDES program at the local level. Compliance with the rules, regulations, policies and programs promulgated by the State of California pursuant to this act serves to protect surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbance and other activities that would adversely affect surface and groundwater. Together, these protections protect water quality and ensure that surface and groundwater sources remain safe and suitable for drinking, irrigation, groundwater recharge and other beneficial uses.

California Safe Drinking Water Act: In addition to the federal Safe Drinking Water Act, drinking water quality is also regulated under the State of California's Safe Drinking Water Act (California Health and Safety Code Section 116270, *et seq.*) and associated regulations. Compliance with the National Primary Drinking Water Regulations (NPDWRs) or the more stringent state-established maximum contaminant levels (MCLs) ensures that contaminants that affect health achieve (as close as economically and technically feasible) the applicable 'public health goal.' This is the drinking water contaminant level below which there is no known or expected risk to health, as set by the California Office of Environmental Health Hazard Assessment. Secondary MCLs are also set to protect the odor, taste and appearance of drinking water. By protecting water quality, compliance with this act would help ensure water supplies of suitable quality are available for public consumption.

CCR Title 22 - Recycled Water: Recycled water made available in compliance with these regulations would help reduce reliance on imported water supplies and lessen draw-down of groundwater.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts to water quality. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through inclusion in project conditions of approval.

Ordinance No. 427 – Regulating the Land Application of Manure: This ordinance generally regulates the transportation and application of manure in designated areas of Riverside County. Compliance with Ordinance No. 427 helps protect water quality for runoff, surface and groundwater.

Ordinance No. 457 - Building Codes and Fees: This ordinance establishes the building and construction standards that include those addressing erosion, runoff, drainage, flood control and water safety. In particular, it also includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they continue to provide adequate stormwater flow/runoff protections, erosion protection and sediment controls, both during and after construction activities on a site. These measures all help protect water quality.

Ordinance No. 458 – Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance enacts measures that ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 protects water supplies and water quality for both surface and groundwater.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. As a result, Ordinance No. 592 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 617– Hazardous Substances (Regulating Underground Storage Tanks): This ordinance provides for a program for the prevention of contamination from improper storage of hazardous substances stored underground. It also establishes and a Local Oversight Program for the unauthorized releases of petroleum and petroleum-related materials from leaking underground tank systems which require remedial action and requires remediation of unauthorized releases. Thus, Ordinance No. 617 serves to prevent long-term threats to the public health, water quality and local water supplies (surface and groundwater) from underground tank systems.

Ordinance No. 629 – Prohibiting Bathing, Swimming, Boating or Entering Irrigation Canals, Ditches or Drains in Unincorporated Areas of Palo Verde Valley: This ordinance protects water quality and water supplies in the Palo Verde Valley by making it unlawful for any person to "bathe, swim, boat, water-ski or otherwise enter into" the water in any irrigation canal, lateral, ditch or drain in the unincorporated area of the Palo Verde Valley, coterminous with the Palo Verde Irrigation District.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance prohibits the discharge of sewage and sewage effluent into any waterbody above or below ground within Riverside County. It also establishes a variety of regulations regarding sewer connections and OWTS. In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: This ordinance establishes minimum standards for construction, reconstruction, abandonment and destruction of wells in order to protect underground water resources and provide safe water within Riverside County by requiring county permits for these activities. As a result, Ordinance No. 682 protects water supplies, as well as water quality, for groundwater.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance protects the health, safety and general welfare of Riverside County residents by imposing restrictions to regulate discharges to stormdrain systems and reduce pollutants entering storm drains (and, ultimately, surface and groundwater within Riverside County). As a result, this ordinance protects and enhances the water quality of county watercourses, water bodies, groundwater and wetlands.

Ordinance No. 830 – Regulating the Land Application of Class A Sewage Sludge for Agricultural Activities: Ordinance No. 830 regulates the application of bulk Class A sewage sludge in commercial farming uses to ensure it does not adversely affect public health, ground and surface water or soils. Through these regulations, this ordinance serves to protect water supplies and water quality for both surface water and groundwater.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community and protects water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance protects groundwater quality in the Quail Valley region of Riverside County by prohibiting new septic systems and modifications to existing systems. These prohibitions and restrictions protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater in the region, as well as for Canyon Lake (a designated 'impaired waterbody' due to sewage runoff) and the water users relying on it as a water supply source.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems. Limitations enacted by this ordinance (i.e., septic prohibitions) protect water supplies and groundwater quality in the region. It does so by prohibiting additional septic systems.

c. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would help reduce significant water quality impacts. See Section 4.19.5.D for full text of each of these policies.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies OS 6.1 and 6.3: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water quality. See Section 4.19.5.D for full text of each of these policies.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

Policies LU 9.1, 9.2 and 9.4: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the below specific mitigation measures from EIR No. 441 that address water quality directly, existing Mitigation Measures 4.17.5A (from Impact 4.19.E), 4.17.5B (from Impact 4.19.D) and 4.17.5E (from Impact 4.19.I) would also aid in reducing impacts to water quality.

Existing Mitigation Measure 4.17.5C: Where development may contribute to a worsening of local or regional ground or surface water quality (as determined by the Riverside County Department of Environmental Health and/or RWQCB), a water quality analysis shall be prepared. The water quality analysis shall include (but shall not be limited to): an analysis of existing surface and subsurface water quality; an assessment of how the proposed development would affect existing water quality; an assessment of how the proposed development would affect beneficial uses of the water; and specific measures to limit or eliminate potential water quality impacts and/or

impacts to beneficial uses of ground/surface water. Where determined necessary by the County [of Riverside] or other responsible entity, the water quality analysis shall include, at an equal level of detail, potential impacts to tributary or downstream areas. The water quality analysis shall be submitted to the County [of Riverside] and the RWCQB for review and shall be approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

Existing Mitigation Measure 4.17.5D: The project applicant shall submit to the County [of Riverside] and the RWQCB, for review and approval, evidence that the specific measures to limit or eliminate potential water quality impacts resulting from the entire development process, will be implemented as set forth in the water quality analysis. Said evidence shall be submitted and approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

3. Finding on Significance for Impact 4.19.C

With the implementation of the above regulations, ordinances, existing and proposed General Plan policies and mitigation measures from EIR No. 441, GPA No. 960 would have a less than significant impact on water quality.

D. Would the project violate any water quality standards or waste discharge requirements?

Impact 4.19.D – Violate Water Quality Standards or Waste Discharge Requirements: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to result in alterations to existing hydrology, increases in impervious surfaces and increases in urban runoff. Such changes would increase the discharge of pollutants into receiving waters if not properly managed and controlled. Thus, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, are necessary to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.D

Future development accommodated by the project would result in alterations to existing hydrology and increases in surface water flows due to urban runoff. If not properly managed and controlled, urbanization may change stream hydrology and increase pollutant loading to receiving waters. As a watershed undergoes urbanization, pervious surface area decreases, runoff volume and velocity may increase, riparian habitat and wetlands are lost, the frequency and severity of flooding may increase, as would pollutant loading. Most of these impacts occur due to human (anthropogenic) activities that occur during and/or after urbanization. These pollutants and hydrologic changes may cause declines in aquatic resources, cause toxicity to aquatic organisms and affect human health and the environment. It is also possible that in semi-arid regions development may result in a net increase in absorption. Impaired waterbodies in Riverside County (see Table 4.19-C) could be affected by future project-related development upstream if pollutant discharges occur.

Section 4.19.7 outlines theoretical wastewater generation potential associated with project build out. See, in particular, Table 4.19-BL. Water quality problems in Riverside County have been related to inadequate subsurface sewage disposal, waste disposal management of the Santa Ana River watershed, agricultural operations (e.g., agricultural runoff), the buildup of sediment resulting from construction-related erosion and urban stormwater runoff. The RWQCBs provide state-level water quality policy for Riverside County. Also, the NPDES permit process mandates the use of BMPs to minimize the adverse effects of pollution and to protect water quality.

To protect (or restore) water quality, the RWQCBs enforce the CWA through the NPDES, as well as the State of California's Water Codes. Pursuant to these regulations, permits from the applicable RWQCB are required for a wide variety of activities with potential to discharge wastes into Waters of the State or U.S. These include construction and operational activities, particularly operation of MS4s (municipal separate storm sewer systems) and industries that produce wastewater. As described in Section 4.19.2.E, the County of Riverside operates its MS4s under permits from the three RWQCBs with jurisdictions in Riverside County.

All construction activities are required to obtain and comply with NPDES permits, SWPPPs and Water Quality Management Plans (WQMPs) to prevent or minimize construction-related water quality impacts and waste discharges, particularly as related to soils, i.e., erosion, sedimentation and fill deposition. All developed uses conveying water into existing stormdrain systems have to comply with County of Riverside MS4 permit conditions and the associated Master Drainage Plan standards (if applicable). Projects must also comply with CWA Sections 401 and 404 if waters of the U.S. would be disturbed. Riverside County regulations addressing runoff and requiring no net increase of flow from onsite would also apply. Compliance with the extensive water quality regulations and programs, particularly those of the NPDES, would ensure no significant violations of water quality standards or waste discharge requirements occur. Compliance with these regulations and programs are assured through conditions of approval issues by the County of Riverside for implementing projects.

2. Regulatory Compliance Affecting Impact 4.19.D

The adverse water quality and waste discharge effects associated with future development accommodated by the project would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to water quality and waste discharges.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described above, this collection of regulations provide strong water quality protection, including establishing the NPDES program to protect watersheds from runoff and waste discharges. They ensure that water quality is protected and water sources remain safe and suitable for use.

CWA Section 402 – National Pollutant Discharge Elimination System: The CWA's NPDES permit program focuses on discharges from municipal wastewater plants, but also applies to industrial discharges, construction site dewatering discharges and stormwater discharges to surface waters. Municipalities, publicly-owned treatment works and most industries in the U.S. are required to obtain an NPDES permit for discharges, including stormwater runoff. NPDES permits regulate discharge of "pollutants from point sources to waters of the United States" to protect surface water quality and their beneficial use. The responsibility for issuing NPDES permits in California has been delegated to the RWQCBs; three of which have jurisdiction in Riverside County. See Section 4.19.2.E.

Federal Safe Drinking Water Act: Compliance with the EPA's minimum standards set under this act serves to protect tap water from potentially harmful contaminants. Compliance with this act helps protect water quality and viability of existing and future drinking water supplies.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with the regulations of this act serves to protect surface and groundwater sources from pollutant discharges, runoff and erosion, and other activities that would adversely affect water supplies. The RWQBCs and waste discharge requirements are also organized under this law.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant violations of water quality standards or waste discharge requirements. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 457 - Building Codes and Fees: This ordinance establishes the building and construction standards including those addressing runoff, erosion, drainage and flood control. In particular, it includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) and the monitoring and maintaining the BMPs to ensure they provide adequate stormwater flow/runoff protection and erosion control, both during and after construction.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance enacts the National Flood Insurance Program to protect the public's health, safety and welfare from flooding hazards within Riverside County. It does so by regulating development within flood hazard areas and establishing a variety of land use and construction standards for such development. It serves to protect water supplies by requiring water and sewer lines be constructed to withstand various flood hazards to minimize infiltration of floodwaters into the systems. Thus, it protects the water quality of both the water supplies serving development and the surface waters that would be contaminated by sewer line damage in the event of a flood. It also requires provisions of adequate drainage and obtainment of all other required state and federal permits. Together these measures ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 617– Hazardous Substances (Regulating Underground Storage Tanks): This ordinance establishes a program to prevent contamination from improper storage of hazardous substances underground to prevent long-term threats to the public health, water quality and local water supplies (surface and groundwater) from underground tank systems.

Ordinance No. 629 – Prohibiting Bathing, Swimming, Boating or Entering Irrigation Canals, Ditches or Drains in Unincorporated Areas of Palo Verde Valley: This ordinance protects water quality and water

supplies in the Palo Verde Valley by banning human water-contact activities in any irrigation canal, lateral, ditch or drain in the unincorporated area of the Palo Verde Valley.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance prohibits the discharge of sewage and sewage effluent into any waterbody above or below ground within Riverside County. It also establishes a variety of regulations regarding sewer connections and OWTS. In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: This ordinance establishes minimum standards for construction, reconstruction, abandonment and destruction of wells in order to protect underground water resources and provide safe water within Riverside County.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance regulates discharges to stormdrain systems and pollutants entering storm drains (and, ultimately, surface and groundwater within Riverside County). Among other things, the ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit and RWQCB authorization. Thus, Ordinance No. 754 mitigates impacts from stormwater flow, runoff and pollutants carried by them, as well as their effects on water quality.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community and protects water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance protects groundwater quality in the Quail Valley region of Riverside County by prohibiting new septic systems and modifications to existing systems. These prohibitions and restrictions protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater in the region, as well as for Canyon Lake (a designated 'impaired waterbody' due to sewage runoff) and the water users relying on it as a water supply source.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems. Limitations enacted by this ordinance (i.e., septic prohibitions) protect water supplies and groundwater quality in the region. It does so by prohibiting additional septic systems.

Program Funding: The County of Riverside and cities collect taxes, fees and other revenue that is used to fund MS4 permit compliance program activities, as well as other water quality protection programs. These include assessment areas, such as the Whitewater River Watershed Benefit Assessment Area, which were established as funding sources for MS4 permit (and individual NPDES) compliance. In the Whitewater case, assessments are calculated on the basis of proportional stormwater runoff and are enrolled on the property tax bills generated by the Riverside County Tax Assessor's office. Some County Service Areas (CSAs), for example CSA 152, also collect funds similarly or use general ('ad valorem') tax revenues to finance stormwater management programs.

c. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would help reduce significant water quality impacts. See Section 4.19.5.D for full text of each of these policies.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies OS 6.1 and 6.3: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water quality. See Section 4.19.5.D for full text of each of these policies.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

Policies LU 9.1, 9.2 and 9.4: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the below specific mitigation measures from EIR No. 441 that address wastewater treatment issues directly, existing Mitigation Measure 4.17.5E (described under Impact 4.19.I) and Mitigation Measures 4.10.9A (described under Impact 4.19.H), would also aid in reducing wastewater impacts.

Existing Mitigation Measure 4.17.5A: The development of septic systems shall be in accordance with applicable standards established by Riverside County and other responsible authorities.

Existing Mitigation Measure 4.17.5B: Point source pollution reduction programs shall fully adhere to applicable standards required by federal, state and local agencies. Prior to the approval of individual projects, Riverside County shall verify that the provisions of applicable point source pollution programs have been satisfied.

Existing Mitigation Measure 4.17.5C: Where development may contribute to a worsening of local or regional ground or surface water quality (as determined by the Riverside County Department of Environmental Health and/or RWQCB), a water quality analysis shall be prepared. The water quality analysis shall include (but shall not be limited to): an analysis of existing surface and subsurface water quality; an assessment of how the proposed development would affect existing water quality; an assessment of how the proposed development would affect beneficial uses of the water; and specific measures to limit or eliminate potential water quality impacts and/or impacts to beneficial uses of ground/surface water. Where determined necessary by the County [of Riverside] or other responsible entity, the water quality analysis shall include, at an equal level of detail, potential impacts to tributary or downstream areas. The water quality analysis shall be submitted to the County [of Riverside] and the RWCQB for review and shall be approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

Existing Mitigation Measure 4.17.5D: The project applicant shall submit to the County [of Riverside] and the RWQCB, for review and approval, evidence that the specific measures to limit or eliminate potential water quality impacts resulting from the entire development process, will be implemented as set forth in the water quality

analysis. Said evidence shall be submitted and approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

3. Finding on Significance for Impact 4.19.D

With the implementation of the above-listed existing regulations, existing and proposed General Plan policies, existing mitigation measures from EIR No. 441, GPA No. 960 would have a less than significant impact on water quality in relationship to compliance with the water quality standards and waste discharge requirements.

E. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Impact 4.19.E – Exceed Wastewater Treatment Requirements: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to increase the amount of people and structures generating wastewater. Wastewater requires proper treatment to ensure it does not adversely affect receiving waters, for example, by elevating pollutant levels or introducing pathogens. Receiving waters are protected through Riverside County's compliance with and enforcement of its NPDES MS4 permits, as well as other permits required for a wide variety of activities with potential to discharge wastes into Waters of the State or U.S. These include construction and operational activities, operation of MS4s (municipal separate storm sewer systems) and industries that produce wastewater. Compliance with the NPDES program and permits, as well as other laws, regulations, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.E

As outlined above under Impact 4.19.D, wastewater generated in Riverside County must be disposed of pursuant to the NPDES program, when applicable, which covers a variety of construction and post-construction activities. As described in Section 4.19.2.E, the County of Riverside operates its MS4s under permits from the three RWQCBs with jurisdictions in Riverside County.

Where connected to municipal sanitary sewer systems are not available, development must rely on various types of septic systems (OWTS – onsite waste treatment systems). As described in Section 4.19.2.D, these systems typically result in percolation of wastewater into groundwater or, occasionally, to surface waters. Regulation by the State of California and County of Riverside ensures that such systems are installed correctly and operate safely to prevent health risks or environmental harm. Sanitary sewer collection systems deliver sewage to municipal (or other agency) treatment plants where the waste is treated per applicable standards. Table 4.19-BH list the wastewater treatment plants operating in Riverside County.

As outlined in Section 4.19.5 and throughout this section as well, extensive regulation by the County of Riverside, RWQCBs and other state agencies, as well as the U.S. EPA, would ensure that future development accommodated by the project does not exceed any RWQCB wastewater treatment requirements. In addition, the County of Riverside has ordinances that strictly regulate the construction and maintenance of septic tanks. Section 8.124.030 of the County of Riverside Government Code states that all septic facilities require written approval for construction from the Riverside County Health Officer. Approval for septic tanks require detailed review and onsite inspections, which include a scaled, contoured plot plan, a soils feasibility report that adequately evaluates soil percolation, a special feasibility boring report (for groundwater and/or bedrock) and engineered topographical map.

Additionally, the U.S. EPA has established standards governing the placement of septic systems in the proximity of water supply wells. The EPA's 'Zone A' is classified as a potential area of direct microbiological and chemical contamination based on an estimated two-year time of (contaminant) travel within an aquifer from the wellhead to the potential source of contamination. Waste discharges from conventional septic tank/subsurface disposal systems may adversely affect both the quality and beneficial uses of the water and/or violate local, regional or state water quality standards.

As excerpted from EPA's Design Manual Onsite Wastewater Treatment and Disposal Systems, "State Codes that specify 100-foot separation distances between convention subsurface wastewater infiltration system treatment units and down-gradient wells or surface waters should not be expected to always protect these resources from dissolved, highly mobile contaminants...published data indicate that viruses that reach groundwater can travel at least 220 vertical feet and 1,338 feet laterally in some porous soils and still remain effective." This standard is explicitly addressed by existing EIR No. 441 Mitigation Measure 4.15.4A (see below) to ensure that water wells are protected from septic tanks being placed too close to them.

2. Regulatory Compliance Affecting Impact 4.19.E

The adverse effects associated with wastewater treatment needs would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help ensure compliance with wastewater treatment requirements.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described further under Impact 4.19.C, these regulations ensure that the water quality of is protected and that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

CWA Section 402 – National Pollutant Discharge Elimination System: The CWA's NPDES permit program focuses on discharges from municipal wastewater plants, but also applies to industrial discharges, construction site dewatering discharges and stormwater discharges to surface waters. Municipalities, publicly owned treatment works and most industries in the U.S. are required to obtain an NPDES permit for discharges, including stormwater runoff. NPDES permits regulate discharge of "pollutants from point sources to waters of the United States" to protect surface water quality and their beneficial use. The responsibility for issuing NPDES permits in California has been delegated to the RWQCBs – three of which have jurisdiction in Riverside County. See Section 4.19.2.E for details.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with this act helps improve impaired waterbodies, prevent pollutant discharges and other activities that would adversely affect surface or groundwater. The protections of this act enhance water quality and ensure that surface and groundwater sources remain safe and suitable for use.

CCR Title 22 – Recycled Water: Chapter 4 of CCR Title 22 establishes recycled water quality standards and treatment reliability criteria that apply to recycling of wastewater. Processing of recycled water in compliance with these standards makes additional water supply available that meets all applicable state and federal water quality standards.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts associated with wastewater treatment. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies are considered to play a role in ensuring any potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 457 – Building Codes and Fees: This ordinance establishes the building and construction standards including those addressing runoff, erosion, drainage and flood control. In particular, it includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) and the monitoring and maintaining the BMPs to ensure they provide adequate stormwater flow/runoff protection and erosion control, both during and after construction.

Ordinance No. 458 – Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: Compliance with Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 461 – Road Improvement Standards: Compliance with this ordinance prevents significant adverse impacts due to road construction, runoff and stormwater flows from roadways, as well as water erosion.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. Ordinance No. 592 protects water quality by prohibiting discharges to public sewers (which directly or indirectly connects to Riverside County's sewerage system) of any wastes that may have an adverse or harmful effect on sewers, maintenance personnel, wastewater treatment plant personnel or equipment, treatment plant effluent quality, public or private property or may otherwise endanger the public, the local environment or create a public nuisance. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 617– Hazardous Substances (Regulating Underground Storage Tanks): This ordinance establishes a program to prevent contamination from improper storage of hazardous substances underground to prevent long-term threats to the public health, water quality and local water supplies (surface and groundwater) from underground tank systems.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance protects water quality, storm drains and surface waters by prohibiting the discharge or deposition of any sewage, sewage effluent or non-hazardous waste, treated or untreated, into any streams or bodies of water above or below the ground, within Riverside County. It also establishes a variety of regulations regarding sewer connections and OWTS (loosely, septic systems and other localized sewer systems). In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater from sewage-related pollutants, such as bacteria and pathogens.

Ordinance No. 754 – Stormwater/Urban Runoff Management and Discharge Controls: This ordinance regulates discharges to stormdrain systems and pollutants entering storm drains (and, ultimately, surface and groundwater within Riverside County). Among other things, the ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit and RWQCB authorization. Thus, Ordinance No. 754 mitigates impacts from stormwater flow, runoff and pollutants carried by them, as well as their effects on water quality.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community as these effluents are channeled to the City of Riverside's Regional Water Quality Control Plant and ultimately discharged into permeable soil and/or surface waters of the Santa Ana River. Among other things, it establishes sewage effluent discharge limitations and requirements to comply with federal general pretreatment regulations. In this way Ordinance No. 843 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance protects water quality for groundwater in the Quail Valley region by prohibiting new septic systems and modifications to existing systems. The prohibitions and restrictions of Ordinance No. 856 also help protect water supplies, water and wastewater facilities, and water quality for surface water in the Quail Valley region, as well as Canyon Lake (a designated 'impaired waterbody' due to sewage runoff) and the water users relying on it as a water supply source.

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance was enacted to protect water quality in the Cherry Valley region of Riverside County from high nitrate levels in drinking water as a result of failing septic systems. It prohibits new septic systems and expansions or modifications of existing septic systems within the region because of septic system failures likely contributing to excessive nitrate levels in the region's groundwater. Only septic system designs that can effectively reduce (i.e., 50% or more) effluent nitrate levels and not lead to further degradation of the groundwater may be approved by the County of Riverside. Through these restrictions, this ordinance protects water supplies and groundwater quality in the region.

c. Compliance with Existing General Plan Policies

Implementation of these water resource-related General Plan policies would help reduce the effects of future development on wastewater collection and treatment infrastructure. See Section 4.19.5.D for full text of each of these policies.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies LU 5.3, 21.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources and infrastructure are adequate for the proposed level of development.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water resources. See Section 4.19.5.D for full text of each of these policies.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the below specific mitigation measures from EIR No. 441 that address wastewater treatment issues directly, existing Mitigation Measure 4.17.5E (item h, in particular), described under Impact 4.19.I, would also aid in reducing impacts from wastewater.

Existing Mitigation Measure 4.15.4A: Conventional septic tanks/subsurface disposal systems shall be prohibited within any designated Zone A of an EPA wellhead protection area. Where a difference between Riverside County and EPA septic tank setback distance requirements exists, the EPA standard shall apply.

Existing Mitigation Measure 4.17.5A: The development of septic systems shall be in accordance with applicable standards established by Riverside County and other responsible authorities.

Existing Mitigation Measure 4.10.9A: Riverside County, where required, and in accordance with issuance of a National Pollutant Discharge Elimination System (NPDES) permit, shall require the construction and/or grading contractor for individual developments to establish and implement specific Best Management Practices (BMPs) at time of project implementation.

f. New EIR Compliance Measures

In order to ensure impacts are fully mitigated to less than significant, the following new mitigation measure is proposed. It is a revision to the previous EIR No. 441 Mitigation Measure 4.15.4A that indicates the more restrictive standard shall apply between the EPA and Riverside County standards in effect. Since EIR No. 441 mitigation measures cannot be revised (they were certified for a specific document, i.e., the 2003 RCIP General Plan), this "new" measure is necessary, even though it is merely an update.

NEW **Mitigation Measure 4.19.E-N1:** Conventional septic tanks/subsurface disposal systems shall be prohibited within any designated Zone A of an EPA wellhead protection area. Where a difference between Riverside County and EPA septic tank setback distance requirements exists, the more restrictive standard shall apply.

3. Finding on Significance for Impact 4.19.E

With implementation of regulations, existing and proposed General Plan policies and existing mitigation measures from EIR No. 441, plus new measure 4.19.E-N1, future development accommodated by GPA No. 960 would have less than significant impacts due to exceeding RWQCB wastewater treatment requirements.

F. Would the project result in a determination by a wastewater treatment provider which serves or may serve the project that it would not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact 4.19.F – Exceed Wastewater Treatment Capacity: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to contribute to increased generation of wastewater needing treatment, the provision of which could exceed the existing capacity of the treatment facility. In addition, where sanitary sewer connection and treatment are not available, septic systems would be necessary. The proliferation of septic systems in rural communities may potentially contaminate groundwater with nitrates, ammonia, salts, metals, organic solvents, grease and oil, and other substances, impairing the beneficial uses of local water supplies. Compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 would be sufficient to ensure that impacts associated with wastewater treatment capacities are less than significant.

1. Analysis of Impact 4.19.F

Future development accommodated by the project would generate increased population and housing, as well as commercial and industrial land uses. This growth would incrementally increase the amount of wastewater generated, which would necessitate increased wastewater treatment capacity.

As shown in Tables 4.19-BI and 4.19-BJ, future development accommodated by GPA No. 960 has the potential to occur within and affect 111,400 acres of unincorporated Riverside County, including approximately 18,800 acres within the boundaries of existing water districts and other agencies that provide sanitary sewer services. The Mecca Sanitary District service 260 acres within eastern Riverside County. And, at least 92,600 acres are not served by sanitary sewer districts or any other sewer providers. And, even within provider service areas, not all customers may have sanitary sewer services available.

Within the three categories of spatial project components analyzed, the 'Potentially Affected' area, which has the greatest potential to generate additional wastewater (because it generally represents foreseeable areas of increasing development potential), totals 7,900 acres and is associated with a theoretical wastewater generation increase of approximately 1.6 million gallons per day (mgpd) above baseline conditions at project build out. Of this amount, approximately 42% would be generated by the urban and urbanizing areas of western Riverside County generally (though not always) served with sanitary sewer collection and wastewater treatment by existing water and sewer districts. In particular, this includes EMWD and WMWD.

Another 26% would be located in the urbanizing regions of the Coachella Valley. The DVWD provides the bulk of the wastewater treatment services in this region. The remaining 32% would be located in areas without sanitary sewer service and would typically rely on individual septic systems (OWTS) or, possibly, small community collectives. This includes the communities within the San Gorgonio Pass and San Jacinto Mountains (except for the Idyllwild village center, which has sanitary sewer provided by Idyllwild Water District), and the far eastern desert communities near the Arizona border. New uses in these areas would not affect existing or future wastewater treatment facilities, but would instead require construction of individual OWTS as part of their implementation. This assumes geology, hydrology, topography, soils, etc., are suitable for OWTS; not all sites will be. Where OWTS are not feasible, wastewater would have to be stored onsite and then periodically transported (i.e., by truck) to an appropriate wastewater treatment facility. Or, failing that, a site could possibly be undevelopable.

As described in Section 4.19.4.J, in some areas, Riverside County's wastewater treatment facilities may have forecast generation totals that exceed the available (or projected) treatment capacities. Where demand for wastewater treatment exceeds the agency's treatment plant capacity, a significant impact would occur. In general, agencies plan future infrastructure needs, including for wastewater treatment, on the basis of a 5-year capital improvement program and use regional (for example, SCAG) and local demographics, as well as the general plans of affected cities and counties to determine their needs. As such, and with build out of GPA No. 960 projected for nearly 50 years hence, it is assumed that future development would occur incrementally over time and thus would not adversely affect the provision of wastewater treatment services over the long term. The additional wastewater treatment needs generated by future project implementation would not exceed the short (five-year) or long-term plans of existing providers nor outpace their ability to provide additional treatment capacity. Also, the construction of additional wastewater treatment plants, as well as water reclamation and storage facilities, would be subject to additional environmental analysis to determine onsite impacts. (See also, Impact 4.19.G.)

The wastewater service providers within Riverside County would continue to expand their treatment capacities consistent with growth projections and associated increased demand. Conservation methods and the increased use of reclaimed water would help decrease the need for treatment and storage capacity, and provide a beneficial reuse of water. Without the expansion of facilities to treat wastewater, development cannot occur on a long-term basis. However, it is feasible that adequate treatment capacity can be constructed to meet the increased demand and the overall effect of GPA No. 960 on municipal wastewater treatment capacity would be less than significant.

In the near future, the project would also contribute incrementally to the cumulative increase in need for wastewater treatment. This increased need, however, would be scattered across Riverside County and spread over roughly 50 years. As such, it would not result in a significant impact to wastewater treatment capacities.

Future development accommodated by the project would also allow and encourage development of rural residential and other land uses in areas that are not served by municipal sewer facilities. This is a potentially significant effect of the project. The regulatory measures described herein, however, would be sufficient to reduce the impact to less than significant. See, for example, Ordinance No.s 843, 856 and 871. Also, see discussion under Impact 4.19.E for more on septic system regulations.

2. Regulatory Compliance Affecting Impact 4.19.F

Adverse effects associated with potential demands on wastewater treatment facilities and capacities would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to demands on wastewater treatment facilities and capacities.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described above, this collection of regulations provide strong water quality protection, including establishing the NPDES program to protect watersheds from runoff and waste discharges. They ensure that water quality is protected and water sources remain safe and suitable for use.

Federal Safe Drinking Water Act: Compliance with the EPA's minimum standards set under this act serves to protect tap water from potentially harmful contaminants. Compliance with this act helps protect water quality and viability of existing and future drinking water supplies.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with this collection of regulations would protect surface and groundwater sources from wastewater and pollutant discharges, runoff and erosion, unpermitted hydrology disturbances and other activities that would adversely affect surface or groundwater.

CCR Title 22 - Recycled Water: Chapter 4 of CCR Title 22 establishes recycled water quality standards and treatment reliability criteria that apply to recycling of wastewater. Processing recycled water in compliance with these standards makes additional water supply available and ensures it meets all applicable state and federal water quality standards.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts on wastewater treatment facilities and capacities.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance enacts measures that ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. Ordinance No. 592 protects water quality by prohibiting discharges to public sewers (which directly or indirectly connects to Riverside County's sewerage system) of any wastes that may have an adverse or harmful effect on sewers, maintenance personnel, wastewater treatment plant personnel or equipment, treatment plant effluent quality, public or private property or may otherwise endanger the public, the local environment or create a public nuisance. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance protects water quality, storm drains and surface waters by prohibiting the discharge or deposition of any sewage, sewage effluent or non-hazardous waste, treated or untreated, into any streams or bodies of water above or below the ground, within Riverside County. It also establishes a variety of regulations regarding sewer connections and OWTS (loosely, septic systems and other localized sewer systems). In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater from sewage-related pollutants, such as bacteria and pathogens.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance regulates discharges to storm drain systems and pollutants entering storm drains (and, ultimately, surface and groundwater within Riverside County). Among other things, the ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit and RWQCB authorization. Thus, Ordinance No. 754 mitigates impacts from stormwater flow, runoff and pollutants carried by them, as well as their effects on water quality.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates discharge of waste into sewage collection systems in the Highgrove community, as these effluents are channeled to the City of Riverside's Regional Water Quality Control Plant and ultimately discharged into permeable soil and/or surface waters of the Santa Ana River. Among other things, it establishes sewage effluent discharge limitations and requirements to comply with federal general pretreatment regulations. In this way Ordinance No. 843 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 856 – Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer: This ordinance protects groundwater in the Quail Valley region of Riverside County by prohibiting new septic systems and modifications to existing systems. This protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater in the Quail Valley region, as well as Canyon Lake (a designated 'impaired waterbody' due to sewage runoff contamination).

Ordinance No. 871 – Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley: This ordinance protects the Cherry Valley region from high nitrate levels in drinking water as a result of failing septic systems. It prohibits new septic systems and expansions or modifications of existing septic systems within the region because of septic system failures likely contributing to excessive nitrate levels in the region's groundwater. Only septic system designs that can effectively reduce (i.e., 50% or more) effluent nitrate levels and not lead to further degradation of the groundwater may be approved by the County of Riverside. Through these limitations, this ordinance serves to protect water supplies and groundwater quality in the region.

c. Compliance with Existing General Plan Policies

Although the General Plan does not include a Public Services Element, it does include a number of policies that address the effects of future development on wastewater facilities. The policies are already part of the General Plan and are not part of the project, GPA No. 960. They help ensure that potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval. See Section 4.19.5.D for full policy texts.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies LU 5.3, 21.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources are adequate for the proposed level of development.

d. Compliance with New or Revised General Plan Policies

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

Existing Mitigation Measures 4.17.5D (listed under Impact 4.19.D), 4.15.4A and 4.10.9A (Impact 4.19.E), 4.9.1C (Impact 4.19.H) and 4.17.5E (Impact 4.19.I) would also aid in reducing impacts associated with wastewater treatment facilities.

3. Finding on Significance for Impact 4.19.F

With the implementation of the above regulations, ordinances, existing and proposed General Plan policies and existing mitigation measures from EIR No. 441, GPA No. 960 would have a less than significant impact on wastewater treatment facilities and capacities, as well as septic systems.

G. Would the project require or result in the construction of new water or wastewater facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact 4.19.G – Result in Significant Adverse Effects Due to the Construction of New or Expanded Water or Wastewater Facilities: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in increased demand for water supply, wastewater treatment and infrastructure to supply these services. These increases would contribute incrementally to the need for new or expanded water and wastewater treatment facilities. Since the project would be implemented on a case-by-case basis across many individual sites spread across Riverside County over roughly 50 years, however, it would not result in significant impacts tied to specific, inalterable areas. Rather, the future locations of such facilities can be established (located) so as to minimize potential environmental effects. Further, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.G

As discussed under the prior impacts, future development accommodated by the project would result in increased demands for water supply, wastewater treatment and infrastructure to supply these services. See, for example, Tables 4.19-BG through 4.19-BN. These increases, however, would be spread throughout Riverside County and would occur incrementally over a roughly 50-year build out period. As a result, the project would not contribute significantly to the need for new or expanded water or wastewater treatment facilities in any specific given location. Rather, it is expected that individual future implementation projects would either be met by existing capacities or pay their fair-share costs towards providing needed additional capacity. Also, since GPA No. 960's changes are included in the Riverside County General Plan and agencies use general plans to help plan future infrastructure needs, it is expected that the agencies would be able to plan and build facilities to meet future needs accordingly. Further, since facilities are generally needed to serve regions, rather than specific locations, it is feasible that future facilities could be sited in a manner that avoids or minimizes significant environmental effects. Thus, for all these reasons, GPA No. 960's impact on the environment as a result of the need for new or expanded water and wastewater facilities would be less than significant.

2. Regulatory Compliance Affecting Impact 4.19.G

The adverse effects associated with the need for new or expanded water and wastewater facilities would be avoided, reduced or minimized through adherence to and compliance with the following regulations, ordinances, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts to the environment as a result of the need for new or expanded water and wastewater facilities.

Federal Safe Drinking Water Act: Compliance with the EPA's minimum standards set under this act serves to protect tap water from potentially harmful contaminants. Compliance with this act helps protect water quality and viability of existing and future drinking water supplies.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with the various regulations and policies promulgated by the State of California pursuant to this act serve to protect or improve impaired waterbodies and eliminate or minimize pollutant discharges and other activities that would adversely affect surface and groundwater. Together, these protections protect water quality and ensure that surface and groundwater sources remain safe and suitable for use as drinking water, irrigation water, recharge water and other beneficial uses.

CCR Title 22 - Recycled Water: Compliance with these standards would ensure that additional water supply is made available. Increased water conservation and use of recycled water helps reduce reliance on imported water supplies, and reduces or delays the need for additional water facilities.

Water Conservation Act (SBX 7-7): Compliance with this act would help reduce water consumption by various users, including new urban development, and could thus make additional water (potentially up to 20%) available for use. Increased water conservation would help reduce reliance on imported water supplies and reduce or delay the need for additional water facilities.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts due to the need for new or expanded water or wastewater treatment facilities. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies help ensure that potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance prohibits the discharge of sewage and sewage effluent into any waterbodies above or below ground within Riverside County. It also

establishes a variety of regulations regarding sewer connections and OWTS. In this way, the ordinance protects water supplies, water and wastewater facilities and water quality.

Ordinance No. 682 – Construction, Reconstruction, Abandonment and Destruction of Wells: This ordinance establishes minimum standards for construction, reconstruction, abandonment and destruction of wells in order to protect underground water resources and provide safe water within Riverside County.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community and protects water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

c. Compliance with Existing General Plan Policies

Implementation of these water resource-related General Plan policies would reduce the effects of future development on water and wastewater facilities to less than significant. See Section 4.19.5.D for full text of each policy.

Policies OS 1.1 and 1.3: These policies address water supply issues at the county level and when considering projects for approval.

Policies OS 2.2 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and reduces or delays the need for additional infrastructure.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies LU 5.3, 21.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources, including necessary infrastructure, are adequate for the proposed level of development.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water resources. See Section 4.19.5.D for full text of each of these policies.

Policies OS 1.4, 2.3 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and reduces or delays the need for additional infrastructure.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use means reducing the need for imported water supplies and reducing or delaying the need for additional infrastructure.

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

Existing Mitigation Measures 4.17.1 C and 4.17.1D, described previously under Impact 4.19.A, and Mitigation Measure 4.17.5A, described under Impact 4.19.E, would also aid in reducing impacts associated with the need for new or expanded water and wastewater facilities to less than significant.

3. Finding on Significance for Impact 4.19.G

With the implementation of the above-listed existing regulations, existing and proposed General Plan policies, existing mitigation measures from EIR No. 441, GPA No. 960 would have a less than significant impact on the environment due to the need for new or expanded water or wastewater facilities.

H. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Impact 4.19.H – Substantially Alter Existing Drainage Patterns Resulting in Substantial Erosion or Siltation: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, has the potential to increase water erosion, sedimentation and siltation of surface water. This includes short-term construction impacts, as well as long-term operational impacts. Future development also has the potential to threaten, damage or change hydrologic baseline conditions throughout Riverside County over time. However, compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.H

Future development in Riverside County accommodated by the project has the potential to increase erosion, sedimentation and siltation of surface water. This may occur due to the short-term disturbance of large quantities of earth during construction, as well as increased erosion potential in areas of new construction (i.e., due to vegetation removal, topsoil disturbance, etc.). This impact, however, would be held to less than significant levels as each new development in Riverside County would be required to adhere to existing regulations regarding construction practices that minimize risks of erosion and runoff. These regulations include adherence to applicable provisions of Riverside County Ordinance No. 754 (Stormwater/Urban Runoff Management and Discharge Controls), following best management practices (BMPs), obtaining and complying with the appropriate building permits, and obtaining and complying with NPDES permits.

BMPs consist of any activity, prohibition, practice, procedure, program, or other measure designed to prevent or reduce the discharge of pollutants directly or indirectly into waters of the United States. BMPs include, but are not limited to, those measures specified in the California Stormwater Best Management Practice Handbook for Municipal, Industrial/Commercial and Construction Activity, as well as those measures identified by the Director of the County of Riverside Transportation and Land Management Agency (TLMA). Typical BMPs include, but are not be limited to, the following:

- Revegetation of disturbed areas and planting of non-disturbed, but highly erosive, areas.
- Use of drought tolerant plants and irrigation systems which minimize runoff.

- Use of other erosion control devices such as rip-rap, gabions, concrete lining, small check dams, etc., to reduce erosion in gullies and active stream channels.
- Retention of onsite vegetation to the maximum extent possible.
- Limiting grading disturbance to the essential project area.
- Limiting grading activities during the rainy season.
- Balancing and limiting the amount of cut and fill to the extent possible.
- The diversion of water entering and exiting the site through the placement of interceptor trenches or other erosion control devices.
- Application of water or other soil stabilizer to disturbed areas to limit dust generation.
- Stabilization of soils at the construction entrance to reduce dirt tracked onto adjacent streets.
- Use of dikes, drains, swales or other features to divert and/or redirect runoff.

Post-construction runoff is also addressed and mitigated through site design and various requirements of State of California and County of Riverside programs, such as Riverside County's MS4 permit requirements for new development and substantial redevelopment, as well as standard Riverside County conditions of approval. These conditions include the requirement that projects not result in a net increase in water or runoff from the project site, that hydrology changes affecting Waters of the U.S. be made pursuant to CWA Section 404 permits and other similar measures.

Increased development resulting from implementation of the project would also reduce the distribution and extent of permeable surfaces suitable for recharge. It may also increase runoff and subsequent flow in streams, as well as increase the amount of non-point source pollutants that enter watercourses and recharge areas. Development activities may also result in the alteration or elimination features essential to local or regional hydrologic systems or interrupt hydrologic processes. Tables 4.19-BO and 4.19-BM show the approximate extent of known spatial areas that could be affected by future development accommodated by GPA No. 960. However, as noted previously, the mitigation measures outlined herein would ensure these impacts are reduced to less than significant levels.

2. Regulatory Compliance Affecting Impact 4.19.H

The adverse effects associated with potential changes to drainage patterns and hydrology, would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to changes to drainage patterns and hydrology.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described above, compliance with this collection of federal regulations would ensure that changes to drainage patterns and hydrology do not adversely affect water quality, including through the discharge or causation of substantial erosion, siltation or sedimentation.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with this collection of regulations would protect surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbances and other activities that would adversely affect surface or groundwater.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts to existing drainage patterns, erosion and siltation. These policies are already part of the General Plan and are not part of the project, GPA No. 960. Rather, they help ensure that potential environmental effects are avoided, reduced or minimized through the application of these policies on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 457 - Building Codes and Fees: This ordinance establishes the building and construction standards by which all development approved within unincorporated Riverside County must comply. This includes standards addressing erosion, runoff, drainage, flood control and water safety. In particular, it also includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they continue to provide adequate stormwater flow/runoff protections, erosion protection and sediment controls, both during and after construction activities on a site.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance enacts measures that ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 461 - Road Improvement Standards: This ordinance sets standards for roads, bridges and other transportation-related facilities, including those aspects of hydrology, flood control and associated drainage functions. It also serves to place to prevent significant adverse impacts due to road construction, runoff and stormwater flows from roadways, as well as water erosion.

Ordinance No. 659 – Development Mitigation Fee for Residential Development (DIF Program): This ordinance sets a range of development impact fees for new residential, commercial and industrial development to reduce impacts caused by such development. It mitigates growth impacts (particularly those arising from population growth) on public facilities. The provision of these facilities, including flood control facilities, ensures that hydrology changes would not result in impacts to hydrology or erosion due to lack of infrastructure.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance protects the health, safety and general welfare of Riverside County residents by imposing restrictions to regulate discharges to stormdrain systems and reduce pollutants entering the storm drains. Among other things, the

ordinance requires that all discharge to storm drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit and RWQCB authorization. The intent of this ordinance is to protect and enhance the water quality of county watercourses, water bodies, groundwater and wetlands pursuant to the federal CWA and the CWC, as well as other applicable state and federal regulations. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, Ordinance No. 754 mitigates impacts from stormwater flows and runoff, including flooding, erosion, sedimentation and siltation.

Ordinance No. 859 - Water-Efficient Landscape Requirements: This ordinance outlines water-efficient landscape standards for development within Riverside County per the California Water Conservation in Landscaping Act and other state regulations. It establishes standards related to planning, installing and maintaining landscaping and irrigation. By requiring reduced water use for landscape irrigation, Ordinance No. 859 protects existing water supplies (surface and groundwater). And by limiting water applications, it also helps minimize water runoff and water erosion in landscaped areas.

c. Compliance with Existing General Plan Policies

The following existing Riverside County General Plan policies would help reduce significant impacts to drainage patterns, erosion and siltation. See Section 4.19.5.D for full text of each policy.

Policies OS 2.2 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the potential for excess water runoff that could cause or contribute to erosion, sedimentation or siltation.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies OS 4.4 and 4.8: These policies address protection of natural drainages which contribute to aquifer recharge and, hence, aid in protecting groundwater basins from draw-down.

Policies OS 6.1 and 6.3: These policies address protection of wetlands and other riparian resources from hydrological disruption, protection of water quality within floodplains and drainages, and minimization of erosion effects.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts on existing drainage patterns, erosion and siltation. See Section 4.19.5.D for full text of each of these policies.

Policies OS 1.4, 2.3 and 2.4: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and reduces or delays the need for additional infrastructure.

Policies OS 4.5 and 4.6: These policies address protection of natural drainages which contribute to aquifer recharge and, hence, aid in protecting groundwater basins from draw-down. In particular, policy OS 4.6 addresses the retention of stormwater runoff within a development site in order to both prevent erosion offsite and facilitate groundwater recharge onsite.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use would prevent erosion, siltation and sedimentation both onsite and off.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

Policies LU 9.1, 9.2 and 9.4: These policies address protection of wetlands and other riparian resources from hydrological disruption, protection of water quality within floodplains and drainages, and minimization of erosion effects.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the below specific mitigation measures from EIR No. 441 that address drainage patterns and erosion directly, existing Mitigation Measures 4.17.5B and 4.17.5D (see Impact 4.19.D), 4.17.5E (Impact 4.19.I) and 4.9.1D (Impact 4.19.J), would also aid in reducing impacts on existing drainage patterns, erosion and siltation.

Existing Mitigation Measure 4.17.4A Where development may interfere with, disrupt, or otherwise affect surface or subsurface hydrologic baseline conditions (as determined by the Riverside County Flood Control and Water Conservation District, the United States Army Corps of Engineers, the California Department of Fish and Wildlife, and/or the Regional Water Quality Control Board), preparation of a project specific hydrologic study shall be required. The hydrologic study shall include (but shall not be limited to): an inventory of surface and subsurface hydrologic conditions existing at the time of the study; an analysis of how the proposed development would affect these hydrologic baseline conditions; and specific measures to limit or eliminate the interference or disruption of the onsite hydrologic process. The hydrologic study shall evaluate the feasibility of incorporating bioengineering measures into any project that may alter the hydrologic process. Where required by the County [of Riverside], the hydrologic study shall include analysis of, at an equal level of detail, potential impacts to tributary or downstream areas. The hydrologic study shall be submitted to the County [of Riverside] or responsible entity for review and shall be approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

Existing Mitigation Measure 4.17.4B: The project applicant shall submit to the County [of Riverside] for review and approval, evidence that the specific measures to limit or eliminate the disruption or interference to the hydrologic process resulting from the entire development process, will be implemented as set forth in the hydrologic study. Such evidence may take the form of (but shall not be limited to): a development agreement; land banking; the provision of adequate funds to guarantee the construction, maintenance or restoration of hydrologic features; or any other mechanism that will achieve said goals. Said evidence shall be submitted and approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

Existing Mitigation Measure 4.17.4C: Where determined feasible by the County [of Riverside] or responsible entity, bioengineering measures shall be incorporated into any project that may alter the hydrologic process.

Existing Mitigation Measure 4.9.1C: Riverside County shall not necessarily require all land uses to withstand flooding. These may include land uses such as agricultural, golf courses, and trails. For these land uses, flows shall not be obstructed, and upstream and downstream properties shall not be adversely affected by increased velocities, erosion backwater effects, concentration of flows, and adverse impacts to water quality from point and nonpoint sources of pollution.

Existing Mitigation Measure 4.9.2C: Riverside County shall require that for agricultural, recreation or other low-density uses, flows are not obstructed and that upstream and downstream properties are not adversely affected by increased velocities, erosion backwater effects or concentration of flows.

Existing Mitigation Measure 4.10.9A: Riverside County, where required, and in accordance with issuance of a National Pollutant Discharge Elimination System (NPDES) permit, shall require the construction and/or grading contractor for individual developments to establish and implement specific Best Management Practices (BMPs) at time of project implementation.

Existing Mitigation Measure 4.10.9B: Prior to any development within the County [of Riverside], a grading plan shall be submitted to the Riverside County Building and Safety Department and/or Riverside County Geologist for review and approval. As required by the County [of Riverside], the grading plan shall include erosion and sediment control plans. Measures included in individual erosion control plans may include, but shall not be limited to, the following:

- Grading and development plans shall be designed in a manner which minimizes the amount of terrain modification.
- Surface water shall be controlled and diverted around potential landslide areas to prevent erosion and saturation of slopes.
- Structures shall not be sited on or below identified landslides unless slides are stabilized.
- The extent and duration of ground disturbing activities during and immediately following periods of rain shall be limited, to avoid the potential for erosion which may be accelerated by rainfall on exposed soils.
- To the extent possible, the amount of cut and fill shall be balanced.
- The amount of water entering and exiting a graded site shall be limited though placement of interceptor trenches or other erosion control devices.
- Erosion and sediment control plans shall be submitted to the County [of Riverside] for review and approval prior to the issuance of grading permits.

Existing Mitigation Measure 4.10.9C: Where required, drainage design measures shall be incorporated into the final design of individual projects onsite. These measures shall include, but will not be limited to:

- Runoff entering developing areas shall be collected into surface and subsurface drains for removal to nearby drainages.
- Runoff generated above steep slopes or poorly vegetated areas shall be captured and conveyed to nearby drainages.
- Runoff generated on paved or covered areas shall be conveyed via swales and drains to natural drainage courses.
- Disturbed areas that have been identified as highly erosive shall be (re)vegetated.
- Irrigation systems shall be designed, installed and maintained in a manner which minimizes runoff.

- The landscape scheme for projects within the project site shall utilize drought-tolerant plants.
- Erosion control devices such as rip-rap, gabions, small check dams, etc., may be utilized in gullies and active stream channels to reduce erosion.

3. Finding on Significance for Impact 4.19.H

With the implementation of the above regulations, ordinances, existing and proposed General Plan policies and existing mitigation measures from EIR No. 441, future development accommodated by GPA No. 960 would have a less than significant impact on existing drainage patterns, erosion, sedimentation and siltation

I. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Impact 4.19.I – Cause Runoff Exceeding Stormwater Drainage System Capacity or Cause Substantial Water Pollution: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in the development of vacant lands within Riverside County. The addition of impervious surfaces from this development would increase stormwater runoff throughout Riverside County. In some areas, existing drainage facilities may not be adequate to accommodate the increase. However, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.I

Future development accommodated by the project in presently vacant unincorporated areas of Riverside County would result in an increase in residential and non-residential structures and associated facilities (e.g., roads), increasing the amount of unincorporated land covered in impermeable surfaces, thereby limiting the amount of ground infiltration during storm events. The passage of storm flows over impermeable surfaces would increase the volume and rate of storm runoff. Roads and buildings generate greater amounts of runoff than typical vegetated land. Fixed drainage channels in urban areas may be unable to contain the runoff generated by relatively small, but intense rainfall events that are known to occur in Riverside County, particularly in the San Jacinto Mountains and eastern desert regions. Table 4.19-BM shows the acreages for areas of known spatial changes associated with GPA No. 960. At minimum, hydrological disturbances would occur in these areas with future implementation of these project changes.

When development is introduced into an area, it creates the potential for urban runoff, which can be a major contributor of non-point source water pollution. (Urban runoff can carry pollutants, including those from: operation of internal combustion engines, atmospheric deposition, brake pad and tire wear, pesticide residues, nutrient (fertilizer) runoff from landscaping and agricultural activities, as well as leaching of naturally occurring minerals from local geology.) When it rains, the impervious surfaces associated with developed areas (roads, parking lots, sidewalks, roofs, etc.) carry polluted stormwater to storm drains, which eventually discharge to surface waters like rivers and streams. In many cases the water in these storm drain systems is discharged without any kind of water quality treatment. Fertilizers used on residential lawns, parks and golf courses are a major source of nitrates and phosphorus in urban runoff.

With the increase in stormwater runoff caused by new land uses, there would be the potential for an increase in pollutants conveyed to the groundwater basins and surface waters in creeks and rivers. Effective control of urban

runoff involves reducing the velocity and volume of stormwater flows leaving a site, as well as decreasing pollutants in these flows. A variety of stormwater management practices and systems can be used to lower the effects of urban runoff. Runoff management systems can include infiltration basins, bioretention systems (e.g., reeds and other riparian vegetation which filter the runoff, improving water quality), constructed wetlands, retention basins, etc. Compliance with a variety of BMPs are required as part of the Riverside County-issued conditions of approval for new development projects.

Thus, project effects on runoff are not considered significant for a combination of several reasons. First, the extensive stormwater management measures required of all new development would reduce urban runoff impacts. Secondly, these impacts would occur incrementally as the result of many individual implementing projects scattered across Riverside County and spread over the 50-year build out. Lastly, stormwater management regulations require developments to ensure that no net increase in water flows leaving a site, further minimizing runoff and its impacts to storm drain systems.

2. Regulatory Compliance Affecting Impact 4.19.I

The adverse effects associated with potential effects of runoff on stormdrain systems and pollution levels would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to stormwater flows, runoff and pollution associated with them.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described above, compliance with this collection of federal regulations would ensure that all changes in drainage patterns and hydrology do not adversely affect water quality, including through the discharge or causation of runoff or pollutants.

CWA Section 402 – National Pollutant Discharge Elimination System: The CWA's NPDES permit program focuses on discharges from municipal wastewater plants, but also applies to industrial discharges, construction site dewatering discharges and stormwater discharges to surface waters. Municipalities, publicly owned treatment works and most industries in the U.S. are required to obtain an NPDES permit for discharges, including stormwater runoff. NPDES permits regulate discharge of "pollutants from point sources to waters of the United States" to protect surface water quality and their beneficial use. The responsibility for issuing NPDES permits in California has been delegated to the RWQCBs – three of which have jurisdiction in Riverside County. See Section 4.19.2.E for full details.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with this collection of regulations would protect surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbances and other activities that would adversely affect storm drain systems and surface water quality.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts due to stormwater runoff and associated water pollution. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies help ensure potential environmental effects are

avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 457 - Building Codes and Fees: This ordinance specifies the various building and construction standards to which all development approved within unincorporated Riverside County must comply. These codes ensure that all development and construction in Riverside County meets necessary standards, including for erosion, runoff, drainage and flood control. It also includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they provide adequate stormwater flow/runoff protections, erosion protection and sediment control, both during and after construction activities. As a result, compliance with this ordinance ensures adequate measures are in place to prevent significant adverse impacts due to construction and urban runoff, stormwater flows and water erosion on lands subject to development.

Ordinance No. 461 - Road Improvement Standards: While not addressing water resources directly, this ordinance does set forth standards for roads, bridges and other transportation-related facilities, including those aspects of hydrology, flood control and associated drainage functions. Ordinance No. 461 serves to mitigate potential flooding hazards to people, property and structures by ensuring that roads and associated improvements and features are designed, constructed and maintained in a manner appropriate to the water flow and flooding hazard potential. It also serves to place to prevent significant adverse impacts due to road construction, runoff and stormwater flows from roadways, as well as water erosion.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County to protect both water quality and the infrastructure conveying and treating these wastewaters. As a result, Ordinance No. 592 protects water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance prohibits the discharge of sewage and sewage effluent into any waterbodies above or below ground within Riverside County. It also establishes a variety of regulations regarding sewer connections and OWTS. In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality.

Ordinance No. 659 – Development Mitigation Fee for Residential Development (DIF Program): This ordinance sets a range of development impact fees for new residential, commercial and industrial development to reduce impacts caused by such development. It mitigates growth impacts (particularly those arising from population growth) on public facilities. For flood control and storm drain facilities, in the areas in which flood control fees have been authorized, the DIF program ensures fees are collected and expended to provide necessary facilities commensurate with the ongoing levels of development. The provision of these facilities ensures that future new development would not result in runoff exceeding stormwater drainage systems nor cause substantial additional sources of polluted runoff.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance protects the health, safety and general welfare of Riverside County residents by imposing restrictions to regulate discharges to stormdrain systems and reduce pollutants entering the storm drains (and, ultimately, surface and groundwater within Riverside County). Among other things, the ordinance requires that all discharge to storm

drain systems be confined to stormwater runoff discharged pursuant to a NPDES permit and RWQCB authorization. The intent of this ordinance is to protect and enhance the water quality of county watercourses, water bodies, groundwater and wetlands pursuant to the federal CWA and the CWC, as well as other applicable state and federal regulations. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, Ordinance No. 754 mitigates potential hazards that could arise from stormwater flows and runoff, including flooding and erosion, and its effects on water quality and water infrastructure.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community and protects water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

Ordinance No. 859 - Water-Efficient Landscape Requirements: This ordinance establishes a number of water-efficiency standards related to the planning, installation and maintenance of landscaping and irrigation. By requiring a reduction in the amount of water used for landscape irrigation, Ordinance No. 859 helps minimize water runoff and water erosion in landscaped areas.

c. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would help reduce significant impacts due to runoff and associated pollution. See Section 4.19.5.D for full text of each policy.

Policies OS 2.2 and 2.5: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and reduce potential for runoff.

Policies OS 3.1-3.3: These policies address wastewater treatment and protection of water quality through compliance with various pollution discharge standards.

Policies OS 4.4 and 4.8: These policies address protection of natural drainages which contribute to aquifer recharge and, hence, aid in protecting groundwater basins from draw-down.

Policies OS 6.1, 6.3 and LU 9.2: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

Policies LU 5.3, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6: These policies address project consistency with urban water management plans and require projects be reviewed to ensure water resources are adequate for the proposed level of development.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to runoff and associated pollution. See Section 4.19.5.D for full text of each of these.

Policies OS 1.4, 2.3 and 2.4: These policies address water conservation by encouraging the use of recycled water. Increased use of recycled water and water conservation reduces the need for imported water supplies and reduce potential for runoff.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use means a reduced need for imported water supplies and reduced potential for runoff and associated pollutants.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

Policies OS 4.5 and 4.6: These policies address protection of natural drainages which contribute to aquifer recharge and, hence, aid in protecting groundwater basins from draw-down. In particular, Policy OS 4.6 addresses the retention of stormwater runoff within a development site in order to both prevent erosion offsite and facilitate groundwater recharge onsite.

Policies LU 9.1 and 9.4: These policies address protection of wetlands and other riparian resources from hydrological disruption, protection of water quality within floodplains and drainages, and minimization of erosion effects.

New Policy LU 22.2: This policy ensures water resources are adequate for the proposed level of development.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the below specific mitigation measures from EIR No. 441 that address runoff issues directly, existing Mitigation Measures 4.9.2C, 4.10.9A, 4.10.9B and 4.10.9C (see Impact 4.19.H) and Mitigation Measure 4.17.5B (see Impact 4.19.D), would also aid in reducing impacts due to runoff.

Existing Mitigation Measure 4.17.5E: For each new development project, the following principles and policies shall be considered and implemented:

a. Avoid or limit disturbance to natural water bodies and drainage systems (including ephemeral drainage systems) when feasible. Provide adequate buffers of native vegetation along drainage systems to lessen erosion and protect water quality.

b. Appropriate best management practices (BMPs) must be implemented to lessen impacts to waters of the United States and/or waters of the State of California resulting from development. Drainages should be left in a natural condition or modified in a way that preserves all existing water quality standards where feasible. Any discharges of sediment or other wastes, including wastewater, to Waters of the United States or Waters of the State must be avoided to the maximum extent practicable. All such discharges will require an NPDES permit issued by the Regional Water Quality Control Board (RWQCB).

c. Small drainages shall be preserved and incorporated into new development, along with adequate buffer zones of native vegetation, to the maximum extent practicable.

d. Any impacts to waters of the United States require a Section 401 Water Quality Standards Certification from the RWQCB. Impacts to these waters shall be avoided to the maximum extent practicable. Where avoidance is not practicable, impacts to these waters shall be minimized to the maximum extent

practicable. Mitigation of unavoidable impacts must, at a minimum, replace the full function and value of the affected water body. Impacts to waters of the United States also require a Clean Water Act Section 404 Permit from the United States Army Corps of Engineers and a Streambed Alteration Agreement from the California Department of Fish and Wildlife.

e. The County [of Riverside] shall encourage the use of pervious materials in development to retain absorption and allow more percolation of stormwater into the ground. The use of pervious materials, such as grass, permeable/porous pavement, etc., for runoff channels and parking areas shall also be encouraged. Lining runoff channels with impermeable surfaces, such as concrete or grouted riprap, will be discouraged.

f. The County [of Riverside] shall encourage construction of detention basins or holding ponds and/or constructed wetlands within a project site to capture and treat dry weather urban runoff and the first flush of rainfall runoff. These basins should be designed to detain runoff for a minimum time, such as 24 hours, to allow particles and associated pollutants to settle and to provide for natural treatment.

g. The County [of Riverside] shall encourage development to retain areas of open space as natural or landscaped to aid in the recharge and retention of runoff. Native plant materials shall be used in replanting and hydroseeding operations, where feasible.

h. The County [of Riverside] shall require that environmental documents for proposed projects in areas tributary to Canyon Lake Reservoir, Lake Elsinore, sections of the Santa Ana River, Fulmar Lake, and Mill Creek (as a result of the proposed 2002 303 (d) listing of these waterbodies) include discharge prohibitions, revisions to discharge permits, or management plans to address water quality impacts in accordance with the controls that may be applied pursuant to state and federal regulation. Environmental documents shall acknowledge that additional requirements may be imposed in the future for projects in areas tributary to the water bodies listed above.

i. The County [of Riverside] shall ensure that in new development, post-development stormwater runoff flow rates do not differ from the pre-development stormwater runoff flow rates.

j. All construction projects should be designed and implemented to protect, and if at all possible, to improve the quality of the underlying groundwater.

k. The County [of Riverside] shall encourage the enhancement of groundwater recharge wherever possible. Measures such as keeping stream/river channels and floodplains in natural conditions or with pervious surfaces, as well as keeping areas of high recharge as open space will be considered.

l. The County [of Riverside] shall prohibit the discharge of waste material resulting from any type of construction into any drainage areas, channels, streambeds, streams, lakes, wetlands or rivers. Spoil sites shall be prohibited within any streams or areas where spoil material could be washed into a water body.

m. The County [of Riverside] shall require that appropriate BMPs be developed and implemented during construction efforts to control the discharge of pollutants, prevent sewage spills, and to avoid discharge of sediments into the streets, stormwater conveyance channels or waterways.

Existing Mitigation Measure 4.9.1.D: Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.

3. Finding on Significance for Impact 4.19.I

Implementation of the above regulations, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would reduce runoff resulting from implementation of future development accommodated by the project and ensure runoff waters meet applicable water quality standards. As a result, GPA No. 960 would have a less than significant impact on the capacity of storm drain systems due to generation of runoff and would not cause substantial additional sources of polluted runoff.

J. Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact 4.19.J – Cause Significant Adverse Effects Due to the Need for New or Expanded Stormwater Drainage Facilities: Future development accommodated by the land use and policy changes proposed by the project, GPA No. 960, would result in the development of vacant lands within Riverside County. The addition of impervious surfaces would increase the potential stormwater runoff from areas throughout Riverside County. Existing drainage facilities may not be adequate to accommodate the future potential increase in stormwater runoff. As a result, additional storm drain capacity and facilities may be necessary. It is feasible, however, for such future facilities to be planned, sited and constructed in a manner that minimizes potential environmental effects. In addition, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441, would be sufficient to ensure that this impact is less than significant.

1. Analysis of Impact 4.19.J

As described under Impact 4.19.I, above, future development accommodated by GPA No. 960 would result in increased stormwater and urban runoff due mainly to increases in the amount of impervious surfaces. These effects, however, are not considered significant because they would occur incrementally as the result of many individual implementing projects scattered across Riverside County and spread over the roughly 50-year build out period. Further, it is expected that such future facilities would be planned, sited and constructed in a manner that minimizes potential environmental effects.

2. Regulatory Compliance Affecting Impact 4.19.J

The adverse effects associated with potential need for new or expanded stormdrain facilities would be avoided, reduced or minimized through adherence to and compliance with the following regulations, policies and existing mitigation measures.

a. Compliance with Federal and State Regulations

Compliance with the following state and federal regulations would help reduce impacts due to the need for new or expanded stormdrain facilities.

Federal Water Pollution Control Act of 1972 (aka the Clean Water Act): As described above, compliance with this collection of federal regulations would ensure that all changes in drainage patterns and hydrology do not adversely affect water quality, including through the discharge or causation of runoff or pollutants.

California Porter-Cologne Water Quality Control Act of 1970: As mentioned above, compliance with this collection of regulations would protect surface and groundwater sources from pollutant discharges, runoff and erosion, unpermitted hydrology disturbances and other activities that would adversely affect storm drain systems and surface water quality.

b. Compliance with Existing Riverside County Regulations

Compliance with the following Riverside County regulations would prevent or reduce significant impacts due to the need for new or expanded storm drain facilities. These regulations are already in effect in Riverside County and are not part of the project, GPA No. 960. Rather, these policies help ensure that potential environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval.

Ordinance No. 457 - Building Codes and Fees: This ordinance establishes the building and construction standards by which all development approved within unincorporated Riverside County must comply. This includes standards addressing erosion, runoff, drainage, flood control and water safety. In particular, it also includes requirements for preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites, implementation of year-round best management practices (BMPs) on such sites and the monitoring and maintaining of the BMPs to ensure they continue to provide adequate stormwater flow/runoff protections, erosion protection and sediment controls, both during and after construction activities on a site.

Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program: This ordinance enacts measures that ensure that water and wastewater systems are adequately protected from flooding and would not contaminate or be contaminated by floodwaters. Thus, Ordinance No. 458 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 461 - Road Improvement Standards: This ordinance sets standards for roads, bridges and other transportation-related facilities, including those aspects of hydrology, flood control and associated drainage functions to prevent significant adverse impacts due to road construction, runoff and stormwater flows from roadways, as well as water erosion.

Ordinance No. 592 – Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas: This ordinance sets various standards for sewer use, construction and industrial wastewater discharges within Riverside County. As a result, Ordinance No. 592 serves to protect water supplies, water and wastewater facilities and water quality for both surface water and groundwater.

Ordinance No. 650 – Sewer Discharge in Unincorporated Territory: This ordinance prohibits the discharge of sewage and sewage effluent into any waterbodies above or below ground within Riverside County. It also establishes regulations regarding sewer connections and OWTS. In this way, Ordinance No. 650 protects water supplies, water and wastewater facilities and water quality.

Ordinance No. 659 – Development Mitigation Fee for Residential Development (DIF Program): This ordinance sets a range of development impact fees to be used "in order to effectively implement the Riverside County General Plan, manage new residential, commercial and industrial development and reduce impacts caused by such development." It mitigates growth impacts (particularly those arising from population growth) on public

facilities within Riverside County to ensure residents are not placed into conditions perilous to their health, safety, comfort or welfare. To accomplish this, fees are assessed on the basis of regional location within Riverside County, land use type (per dwelling unit for residential units and per acre for all other uses) and the applicable categories of facilities to be provided. For flood control facilities, the DIF program ensures fees are collected and expended to provide necessary facilities commensurate with the ongoing levels of development in specific areas not already subject to, or in addition to, Area Drainage Plan fees as under Ordinance No. 458. Thus, Ordinance No. 659 mitigates development impacts on stormdrain and flood control facilities and future needs for these by ensuring that funds are collected and utilized to provide needed facilities as development progresses within Riverside County. The provision of these facilities ensures new development does not expose people, property or structures to undue risks from drainage or stormwater flows.

Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls: This ordinance protects the health, safety and general welfare of Riverside County residents by imposing restrictions to regulate discharges to stormdrain systems, including requiring all discharge to stormdrain systems be pursuant to NPDES permit and RWQCB authorization. By requiring specific standards for development and establishing a program for the approval, implementation and verification of such measures, Ordinance No. 754 mitigates potential hazards that could arise from stormwater flows and runoff, including flooding and erosion, and its effects on water quality and water infrastructure.

Ordinance No. 843 – Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community: This ordinance regulates the discharge of wastes into the sewage collection systems of the Highgrove community and protects water supplies, water and wastewater facilities, and water quality for both surface water and groundwater.

c. Compliance with Existing General Plan Policies

The following existing policies of the Riverside County General Plan would help reduce significant impacts due to the need for new or expanded stormwater drainage facilities. See Section 4.19.5.D for full text of each of these policies.

Policies OS 6.1, 6.3; LU 9.2 and 9.3: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

d. Compliance with Proposed New or Revised General Plan Policies

The following proposed new or revised policies of the Riverside County General Plan would address potential impacts to water resources. See Section 4.19.5.D for full text of each of these policies.

New Policies OS 2.1 and 18.1-18.6: These policies address water conservation through requirements for water-efficient landscaping. Decreasing irrigation water use means reducing the need for imported water supplies and decreasing draw-down of local groundwater basins.

New Policies OS 3.4-3.7: These policies address requirements to comply with NPDES and other regulations addressing pollution discharges and runoff to protect stormwater quality and, ultimately surface and groundwater fed by stormwater runoff.

Policies LU 9.1 and 9.4: These policies address protection of wetlands and other riparian resources from hydrological disruption, protect water quality within floodplains and drainages, and minimize erosion effects.

e. Compliance with Mitigation Measures from EIR No. 441

In addition to the specific mitigation measure below from EIR No. 441 that addresses stormwater flows directly, Mitigation Measures 4.17.5D (see Impact 4.19.D), 4.17.5E (Impact 4.19.I) and 4.10.9A, 4.10.9B, 4.10.9C, 4.17.4A, 4.17.4B and 4.17.4C (Impact 4.19.H) would also aid in reducing impacts due to the need for new or expanded storm drain facilities.

Existing Mitigation Measure 4.9.1.D: Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.

3. Finding on Significance for Impact 4.19.J

With the implementation of the above-listed existing regulations, ordinances, existing and proposed General Plan policies, existing mitigation measures from EIR No. 441, GPA No. 960 would have a less than significant impact due to the need for new or expanded stormwater drainage facilities as a result of future development accommodated by the project over the next 50 or so years.

4.19.9 Water Resources – Significance After Mitigation

Implementation of and compliance with the above regulations, Riverside County General Plan policies, ordinances and existing mitigation measures from EIR No. 441 would ensure that significant impacts to or resulting from a variety of water resource issues would be either avoided or minimized to less than significant. This includes water quality degradation, violation of any water quality standards or waste discharge requirements, exceedance of any RWQCB wastewater treatment requirements, exceedance of existing or planned wastewater treatment capacity, impacts due to the need for new or expanded water, wastewater or stormwater drainage facilities, alteration of existing drainage patterns and associated erosions and siltation, as well as runoff water exceeding existing or planned stormwater drainage systems and associated pollutants. While adherence to the stated policies in the proposed General Plan and mitigation in the EIR would reduce the above potential impacts to less than significant, in absence of project-specific water supply data, potential water supply impacts (including groundwater) – that is, Impacts 4.19.A and 4.19.B, resulting from future development accommodated by the project must be considered significant and unavoidable.

Section 5.0

Additional Required CEQA Topics

Section 5.0
Additional Required CEQA Topics

5.0 About This Section

The following subsections of this chapter address significant environmental effects that cannot be avoided, significant irreversible environmental effects, effects on humans, growth-inducing impacts and cumulative impacts that would result if the proposed project, General Plan Amendment (GPA) No. 960, were implemented as part of build out of the Riverside County General Plan over time. In Section 5.6 the consistency of the General Plan, as it would be updated pursuant to GPA No. 960, is compared with various regional plans.

Different parts of GPA No. 960 affect various areas across and throughout Riverside County and some, such as the new greenhouse gas policies proposed for the General Plan Air Quality Element, span the entire county. As such, the scope of Section 5.0 generally encompasses all of unincorporated Riverside County. As would be expected, Sections 5.1, 5.2, 5.3 and 5.4 discuss the specific effects of the proposed changes included in GPA No. 960 in terms of unavoidable significant effects (Section 5.1), significant irreversible changes (Section 5.2), substantial human effects (Section 5.3) and growth-inducing effects (Section 5.4). For Section 5.5 (Cumulative Impacts) and Section 5.6 (Regional Consistency), however, the scope of analysis is broadened to address full build out of the Riverside County General Plan in its entirety. For example, this means that the effects of build out of the updated General Plan, reflecting the changes that would occur to the document if GPA No. 960 is approved, are compared to the effects projected for various other build out scenarios (existing General Plan without the project, cumulative projects, etc.). This distinction is necessary because the widespread nature of the various components of GPA No. 960 makes appropriate an examination of the end point at which all of these components would be realized.

It should also be noted that, with respect to CEQA, pursuant to Public Resources Code (PRC) Section 21081, where a significant impact has been identified in the EIR, the County of Riverside shall not approve or carry out the project unless the County of Riverside makes one or more of the following findings with respect to each significant effect:

1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.

2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

3. Specific economic, legal, social, technological or other considerations, including considerations for the provision of employment opportunities for highly-trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

In addition, pursuant to CEQA (PRC Section 21081.5), these findings must be based on substantial evidence in the record. The two tables below summarize all of the significant effects associated with GPA No. 960. Table 5.0-A (Unavoidable Significant Environmental Effects) outlines the effects found to be "significant" with respect to the criteria of CEQA, PRC Section 21083(b) and also significant effects found to be "unavoidable" per CCR Section 15126(b). These findings are discussed in full in Sections 5.1, 5.3 and 5.5. In addition, see the associated parts of Section 4.0 for the environmental baselines and analyses performed for the various impacts listed. Table 5.0-B (Summary of Significant Irreversible Changes and Growth-Inducing Effects) outlines the significant irreversible changes and growth-inducing effects associated with GPA No. 960. These findings are discussed in Sections 5.2 and 5.4.

Table 5.0-A: Unavoidable Significant Environmental Effects

Impact	Impact Title / Description[1]	Degrade Environment	Curtail Environment	Short-term Effects	Human Effects	Cumulative
4.3 – Population and Housing						
4.3.A	Induce direct or indirect population growth.					•
4.4 – Aesthetic and Visual Resources						
4.4.A	Adversely affect scenic vistas.					•
4.4.B	Adversely affect scenic resources within State Scenic Highways.					•
4.4.D	Cause adverse light and glare effects.					•
4.5 – Agricultural and Forestry Resources						
4.5.A	Cause the conversion of designated Farmlands.		•			•
4.5.B	Encroach on or conflict with existing agricultural uses.	•				•
4.6 – Air Quality						
4.6.A	Conflict with air quality plans.					•
4.6.B (1)	Cause significant construction (short-term) air emissions.	•			•	•
4.6.B (2)	Cause significant operational (long-term) air emissions.	•			•	•
4.6.C	Cause cumulatively significant project air quality impacts.	•			•	•
4.6.D	Expose sensitive receptors to air pollutants.	•			•	•
4.7 – Greenhouse Gases						
4.7.A	Generate greenhouse gas emissions, either directly or indirectly, that would cause or contribute to a substantial adverse physical effect on the environment.					•
4.7.B	Conflict with plans, policies or regulations for reducing greenhouse gas emissions.					•
4.9 – Cultural and Paleontological Resources						
4.9.B	Cause the destruction of known archeological resources.					•
4.9.C	Cause the destruction of unique paleontological resources or sites.					•
4.10 – Energy Resources						
4.10.A	Increase demand for electricity.					•
4.10.B	Increase demand for natural gas.					•
4.12 – Geology and Soils						
4.12.B	Expose people or structures to strong seismic groundshaking.				•	•
4.12.D	Expose people or structures to landslides.				•	•
4.13 – Hazardous Materials and Safety						
4.13.H	Expose people or structures to wildland fires.				•	•

Impact	Impact Title / Description[1]	Degrade Environment	Curtail Environment	Short-term Effects	Human Effects	Cumulative
4.15 – Noise						
4.15.A	Generate noise or cause noise exposure in excess of standards.	•	•		•	•
4.15.C	Cause a substantial permanent increase in ambient noise levels.	•	•		•	•
4.15.D	Cause a substantial temporary or periodic increase in ambient noise levels	•			•	•
4.16 – Parks and Recreation						
4.16.A	Adversely affect existing recreational resources.					•
4.17 – Public Facilities						
4.17.A	Cause adverse environmental effects due to the need for fire protection services.					•
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.					•
4.17.C (1)	Adversely affect or exceed the permitted capacity of a landfill.					•
4.17.D	Cause adverse environmental effects due to the need for schools.					•
4.17.E	Cause adverse environmental effects due to the need for library services.					•
4.17.F	Cause adverse environmental effects due to the need for medical facilities.					•
4.18 – Transportation and Traffic						
4.18.A	Conflict with circulation system effectiveness regulations for any transportation.	•	•	•		•
4.18.B	Conflict with congestion management program, including LOS standards.					•
4.19 – Water Resources						
4.19.A	Result in insufficient water supply.	•	•	•		•
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.	•	•	•		•
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.					•
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.					•
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.					•
5.4 – Significant Irreversible Changes[3]						
5.2.B	Result in the unjustified commitment of irretrievable resources.					•
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.					•
5.4 – Significant Growth-Inducing Effects[3]						
5.4.A	Foster direct or indirect economic growth.					•
5.4.B	Foster direct or indirect population growth.					•
5.4.C	Result in construction of additional housing.					•
5.4.D	Remove obstacles to population growth.					•
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.					•
5.4.F	Result in population increase that may strain community services or facilities.					•

Footnotes:

1. A "significant effect on the environment" pursuant to CEQA (PRC section 21083(b)) would do any of the following:
   Substantially degrade the quality of the environment. (See discussion in Section 5.1.)
   Substantially curtail the range of environment. (See discussion in Section 5.1.)
   Achieve short-term environmental goals to the disadvantage of long-term environmental goals. (See Section 5.1.)
   Cause substantial adverse effects on human beings, either directly or indirectly. (See discussion in Section 5.3.)
   Cause effects that are individually limited but cumulatively considerable. (See discussion in Section 5.5.)
2. "Unavoidable" defined per CCR Section 15126(b) as significant "environmental effects which cannot be avoided if the proposed project is implemented." (See discussion in Section 5.1.)
3. Discussed in the section indicated, rather than in Section 5.5 (Cumulative Impacts).

Source: Riverside County Planning Dept., Results of analyses in Sections 4.2 - 4.19 and 5.1 - 5.5 of this EIR, 2012.

Table 5.0-B: Summary of Significant Irreversible Changes and Growth-Inducing Effects

Section - Effect Category / Type of Significant Impact		Irreversible [1]	Growth-Inducing[2]
5.2 – Significant Irreversible Changes			
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.	•[3]	
5.2.B	Result in the unjustified commitment of irretrievable resources.		
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.	•	
5.2.D	Result in an environmental accident that could cause irreversible damage.		
5.4 – Significant Growth Inducing Effects			
5.4.A	Foster direct or indirect economic growth.		•
5.4.B	Foster direct or indirect population growth.		•
5.4.C	Result in construction of additional housing.		•
5.4.D	Remove obstacles to population growth.		•
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.	•	•
5.4.F	Result in population increase that may strain community services or facilities.		

Footnotes:
1. Significant "irreversible environmental changes should the project be implemented" (CCR Section 15126.2(c)), as discussed in Section 5.2.
2. Growth-inducing impacts of the project (pursuant to CCR Section 15126.2(d)), as discussed in Section 5.4.
3. Significance finding based on cumulative conditions only. See indicated section for discussion.

Source: Riverside County Planning Dept., Results of analyses in Sections 4.2 - 4.19 and 5.1 - 5.5 of this EIR, 2012.

5.1 Significant Environmental Effects That Cannot Be Avoided

A. Introduction

State CEQA Guidelines, CCR Section 15126.2(b), specifies that an EIR must "describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance." It further directs that, "where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described." Accordingly, this section describes the significant, unavoidable impacts associated with the proposed project, GPA No. 960, in particular, those arising from future development approvals or other actions accommodated by the project pursuant to build out of the updated Riverside County General Plan.

A "significant effect on the environment" is defined under CEQA (PRC Section 21068) to mean a "substantial, or potentially substantial, adverse change in the environment." Further, CEQA Section 21083 states that a project may have a significant effect on the environment if one or more of the following conditions exist:

- The proposed project has the potential to degrade the quality of the environment, curtail the range of the environment or to achieve short-term, to the disadvantage of long-term, environmental goals.
- The possible effects of the project are individually limited but cumulatively considerable. ("Cumulatively considerable" means the incremental effects of an individual project are considerable when viewed in

connection with the effects of past projects, the effects of other current projects and the effects of probable future projects.) (See Section 5.5.)

- The environmental effects of the project will cause substantial adverse effects on human beings, either directly or indirectly. (See Section 5.3.)

As shown in Table 5.0-A, the analysis in this EIR has determined that future development within Riverside County accommodated by GPA No. 960 has the potential to result in significant environmental effects that cannot be avoided or reduced to less than significant levels through mitigation. The table summarizes the types of significant impact, as well as unavoidable impacts associated with the project. The reasons for these significant impact findings are presented below or elsewhere in Section 5 .0, as indicated. See also the corresponding parts of Section 4.0 of the EIR for additional details. As indicated in the table, there would also be several significant human effects and cumulative impacts. Note, details on these (cumulative impacts, in particular) are provided in subsequent Sections 5.3, 5.4 and 5.5, respectively.

B. Significantly Affected Resources

The following environmental resources and impacts would be significantly and unavoidably affected by the proposed project, either directly, indirectly or cumulatively, as indicated.

1. Population and Housing

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental increases in population growth caused both directly and indirectly. Due to the inherently growth-inducing and growth-accommodating nature of a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects would be individually limited, GPA No. 960's incremental contribution to cumulative housing and population impacts may be significant and unavoidable. See Section 5.5.C.2 for full analysis and details.

2. Aesthetic and Visual Resources

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental adverse effects to scenic vistas; scenic resources within State Scenic Highways; and, due to light and glare. Due to the widespread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative aesthetic and scenic impacts would be significant and unavoidable. See Section 5.5.C.3 for full analysis and details.

3. Agricultural Resources

Cause Direct or Indirect Conversion of Designated Farmlands: The specific land use and policy changes proposed by GPA No. 960 would adversely affect (i.e., result in the conversion of) only minimal amounts of State-designated Prime Farmland, Farmland of Statewide Importance and Farmland of Local Importance ("Farmlands") to a variety of non-agricultural uses. Due to the very small areas involved, these impacts would be less than significant. Indirectly, however, the growth accommodated and facilitated by the project would result in

additional development and infrastructure demand that would further conversion of designated Farmlands to urban uses and result in other changes in the existing environment leading to additional Farmland conversion. This indirect impact would be *a* significant and an unavoidable consequence of General Plan build out. It would also be cumulatively significant (see Section 5.5.C.4 for discussion). Section 4.5 (Agricultural and Forestry Resources) addresses this resource and includes a variety of existing County ordinances and General Plan policies that would mitigate some of these project effects.

Compliance with these regulations and General Plan policies would help reduce this indirect impact. However, consistent with the findings made previously for the General Plan in EIR No. 441, there is no feasible CEQA-specific mitigation that would fully reduce this impact to less than significant levels. This is because growth within Riverside County (occurring as the natural consequence of human population growth) requires the use of land, including designated Farmlands in some areas, to support future development. Where such Farmlands occur amidst or adjacent to urbanizing areas, the natural extension of development is inevitable and, in fact, desirable (as opposed to leapfrog or fragmentary development further away which would lead to urban sprawl). Where encroachment causes open agricultural lands, such as fallow fields, pastures or rangelands, for example, to become urbanized or otherwise limited, significant curtailment of the natural environment would result. For these reasons, this indirect impact would remain significant and unavoidable.

Agricultural resources would be subject to significant and unavoidable conversions of designated farmlands to non-agricultural uses. This impact cannot be avoided or reduced to less-than-significant due to the sprawling and wide-spread nature of existing agricultural uses and the myriad of growth pressures fueling growth and ongoing development. As a result, this impact would lead to the curtailment of the range of available designated farmlands within Riverside County. Also, as discussed in Section 5.5.C.4, many of these effects would be individually limited by cumulatively considerable on a countywide basis. Thus, in total, because of the need to designate appropriate areas of growth within the General Plan, even on various Farmlands, GPA No. 960 is proposed despite this significant, unavoidable impact.

Encroach on or Conflict with Existing Agricultural Uses: Future development accommodated by GPA No. 960 has the potential to result in conflicts with existing zoning, agricultural uses and lands subject to a Williamson Act contract or within a Riverside County Agricultural Preserve. It may also result in the introduction of new urban uses near or adjacent to agriculturally zoned property. Urban encroachment into areas in agricultural production, particularly if within 300 feet, increases the likelihood of conflicts between these two fundamental types of uses. When residential and other urban-density land uses encroach into areas in agricultural production, traditional agricultural nuisances become much more problematic to the arriving residents. For farmers, urban encroachment adversely affects the efficiency of remaining farming operations due to increased air pollution, livestock predation by pets, crop diseases resulting from inadequate care of off-farm ornamental plants, restrictions on pesticide use and burning, and requirements to set aside on-farm buffer zones. At the same time, production costs increase due to rising land values, water scarcity, theft and vandalism of farm equipment, crop pilferage, road congestion, change in property tax structure and personal injury liability resulting from trespassing on farms.

Because this impact represents the consequence of urbanization, it would be significant and unavoidable. As outlined in Section 5.5, it would also be cumulatively significant where small, individual future changes would be individually limited, but cumulatively considerable on a countywide basis. Section 4.5 addresses this resource and includes a variety of Riverside County ordinances and existing and proposed General Plan policies that would help lessen or reduce this project effect. However, consistent with the findings made previously for the General Plan in EIR No. 441, there is no feasible CEQA-specific mitigation that would reduce this impact to less than significant levels. This is because growth within Riverside County (occurring as the natural consequence of human population growth) requires the use of land, including designated Farmlands in some areas, to support

future development. Where such Farmlands occur amidst or adjacent to such urbanizing areas, the natural extension of development is inevitable and, in fact, desirable (as opposed to leapfrog or fragmentary development further away which would lead to urban sprawl). Although buffers are effective, they cannot prevent or guarantee the complete avoidance of these conflicts. Thus, for these reasons, this impact would remain significant and unavoidable.

For all of these reasons, existing agricultural activities would be subject to significant and unavoidable conflicts resulting from the encroachment of urban uses into rural and agricultural areas as Riverside County continues to grow over the next 50 years. This impact also cannot be avoided or reduced to less-than-significant because of the finite land supply, the sprawling and wide-spread nature of existing agricultural uses and myriad growth pressures fueling growth and ongoing development. As a result, this impact would lead to the potential degradation of the quality of the environment within Riverside County. Also, as discussed in Section 5.5.C.4, many of these effects would also be individually limited but cumulatively considerable on a countywide basis.

4. Air Quality

Air pollutant emissions are generally associated with two types of activities: construction and operation. Because of their limited spans, construction impacts are considered a "short-term" effect. Operational emissions are considered "long-term," since they would occur for the duration of a development or land use's lifespan (often 30 years or more). As part of this EIR's analysis, both short-term and long-term air quality emissions were examined with respect to GPA No. 960. In both cases, it was found that significant unavoidable impacts would occur as a result of the cumulative effects of various air quality emissions. In some cases, a future project could itself exceed applicable AQMD emission standards for construction or operation. Even in cases where emissions could be individually reduced to acceptable levels, the cumulative effect of multiple activities (construction and operation) occurring simultaneously would result in cumulatively significant emissions at the countywide or regional level. The specific types and their unique effects and mitigation needs are described below. Cumulative impacts, including those associated with air quality, are discussed in detail in Section 5.5.C.5.

Because air quality impacts result from the general growth pressures driving development within Riverside County, they are generally considered unavoidable; as long as people seek to live and work in Riverside County, these impacts will persist. It is possible that continued technological advancements, such as electric vehicles, solar power and alternative energy, will reduce air quality emissions in the future. However, the use of such technology will likely occur incrementally over many decades and will require drastic price reductions before full market penetration can be achieved throughout Riverside County. This means that for all intents and purposes, the air quality impacts described below must be considered unavoidable for the time being.

Conflict with Air Quality Plans: Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in incremental changes due to growth that causes cumulatively significant impacts due to conflicts with air quality plans. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative air quality impacts would be significant and unavoidable. See Section 5.5.C.5 for full analysis and details.

Cause Significant Construction (Short-Term) Air Emissions: As explained in Section 4.6 (Air Quality), future development accommodated by GPA No. 960 would necessitate construction activities that could cause temporary (short-term), generally localized increases in the emission of air pollutants. In some cases, individual project construction emissions could exceed established regulatory standards. The construction emissions generated are quantified based on the amount of daily disturbance (e.g., acres graded per day, structures painted

per day, etc.). Accordingly, significant air quality emissions associated with an individual project or site can be avoided by limiting the amount of construction activities occurring on a single day.

However, since build out of Riverside County pursuant to the General Plan and GPA No. 960 would be implemented through many (hundreds or even thousands) of individual projects occurring throughout Riverside County over next roughly 50 years, the total (cumulative) level of daily disturbance for GPA No. 960 cannot be quantified in aggregate. The amount of construction activities necessary to exceed a daily standard is known, however. And, since the County of Riverside cannot control the number of construction activities collectively occurring on any given day, cumulatively considerable emissions could result from the compliant emissions of many individual sites occurring on a single day. See Section 5.5.C.5 for full analysis and details.

As outlined in Section 4.6, the County General Plan and this EIR incorporate a variety of regulatory actions and mitigation measures that would avoid, reduce or minimize individual project emissions; however, there is no mitigation feasible for further reducing the cumulative impact at the county level. The cumulative effect of air pollutants associated with construction activities within Riverside County would result in significant and unavoidable impacts that collectively degrade the quality of the environment.

Cause Significant Operational (Long-Term) Air Emissions: Operational long-term air emissions are associated with both mobile sources (i.e., vehicle), stationary sources (i.e., boilers, heaters, stoves and ovens, fireplaces and other fixed-source emitters) and also area sources (i.e., gasoline-powered landscape equipment, such as mowers and leaf-blowers, paints and other household chemicals, etc.) located on or associated with developed land uses. As explained in Section 4.6, future development would also result in operational air quality emissions from combustion-powered equipment associated with these new uses. In some cases, these emissions may be significant – exceeding the daily emissions limits established by the overseeing regulatory agency (e.g., the SCAQMD).

In many of these cases, air quality emissions associated with an individual project or site can be avoided, reduce or minimized through regulatory compliance and mitigation measures. However, on a cumulative basis, the individual emissions would still be cumulatively considerable. (See Section 5.5.) This is particularly true of the increased emissions expected to arise from additional vehicle trips within Riverside County.

The Riverside County General Plan and this EIR incorporate a variety of regulatory actions and mitigation measures that would avoid, reduce or minimize operational emissions. However, there is no mitigation feasible for further reducing the cumulative impact at the county level. Thus, the cumulative effect of air pollutants associated with operational emissions within Riverside County would result in significant and unavoidable impacts that collectively degrade the quality of the environment. For these reasons, development accommodated by the project would result in significant, unavoidable long-term operations air quality impacts, even after all feasible mitigation measures are implemented. Even with the implementation of regulations, ordinances and existing and proposed General Plan policies, in addition to new mitigation measures, cumulative criteria pollutant emissions would not be reduced below regulatory thresholds. Thus, this impact would remain significant and unavoidable with respect to violations of air quality standards for operational activities. Further, this significant impact would result in direct and/or cumulative degradation of the quality of the environment (specifically, air), as a result of this project.

Cause Cumulatively Significant Project Air Quality Impacts: Future development accommodated by GPA No. 960 would also result in the emission of criteria pollutants for which Riverside County is in non-attainment during both its construction and operation (as discussed above). Since the exact location, timing and duration of future development projects cannot be ascertained at this time, cumulatively considerable increases to criteria pollutant levels (resulting from multiple projects engaging in construction and/or operational emissions at the

same time) cannot be quantified. Even with compliance with existing regulations and policies and the implementation of existing and new mitigation measures, as outlined in Section 4.6 for Impact 4.6.C, future development accommodated by the project would result in significant cumulative impacts that degrade the quality of the air in Riverside County. Since these impacts arise from the cumulative effects of many sites developing over time, which is driven by growth pressures in the county, they are also considered unavoidable.

Expose Sensitive Receptors to Air Pollutants: Sensitive receptors are those areas where sensitive populations (which include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases) may be present for extended periods of time, resulting in sustained exposure to pollutants emitted in the area. Future development accommodated by GPA No. 960 would expose sensitive receptors to pollutant emissions due to construction (where such construction is adjacent to a sensitive receptor) and operational activities (particularly where increases in emissions, such as from motor vehicles, would increase emissions near existing uses).

The degree of impact would depend on the type of operation, distance from sensitive receptors and the level of activity at each site. The exact location, timing and level of future development activities arising from GPA No. 960 is unforeseeable, however, so specific impacts to sensitive receptors cannot be quantified. Further, though individual projects may successfully mitigate significant effects, on a cumulative basis, a collection of several such projects could nevertheless exceed limits on exposure to sensitive receptors, resulting in effects to humans (see Section 5.3) and degradation of the environment. Thus, even after complying with regulations, existing policies and mitigation measures, as well as specific new mitigation measures, cumulatively these impacts cannot be guaranteed to be reduced to below applicable agency thresholds. In addition, although mitigation is available and is incorporated into both the General Plan and this EIR, full mitigation is infeasible because it would require prohibiting many types of development, including most types of infill, for example. For these reasons this impact would be significant and unavoidable. Thus, GPA No. 960 is proposed despite its significant, unavoidable effects on air quality because the project is necessary to ensure future growth in Riverside County occurs in a coordinated and appropriate manner to accommodate Riverside County's population and work force.

5. Greenhouse Gases

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would incrementally contribute to cumulatively significant environmental effects due to greenhouse gases (GHGs). In particular, GHG emissions occurring within Riverside County between 2020 and 2060 would be cumulatively significant and unavoidable because they would contribute to GHG levels in excess of the 2050 mitigation targets established for California under Executive Order S-3-05, i.e., reducing GHG emissions to "80% below 1990 levels by 2050." The County is committed toward the reduction of GHG emissions. However, the means to achieve the 2050 reduction target is technologically infeasible at this time. Mitigation Measure 4.7.A-.N3 requires the County to provide by January 1, 2020, a post-2020 CAP that includes 2035 and 2050 reduction targets and specific reduction measures to achieve those targets. This allows technology, the State and the County the time needed to develop reduction measures able to achieve the 2050 reduction target. At present, however, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance in terms of 2050 targets. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative greenhouse gas impacts would be significant and unavoidable. See Section 5.5.C.6 for full analysis and details.

6. Cultural and Paleontological Resources

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental adverse effects due to the destruction of both known archeological resources and unique paleontological resources and sites. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this

cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative cultural and paleontological impacts would be significant and unavoidable. See Section 5.5.C.8 for full analysis and details.

7. Energy Resources

Implementation of the General Plan as amended pursuant to the proposed project, GPA No. 960, would result in cumulatively significant impacts to the environment as a result of incremental increases in the demand for both electricity and natural gas. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative energy impacts would be significant and unavoidable. See Section 5.5.C.9 for full analysis and details.

8. Geology and Soils

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental exposure of people and structures to A) strong seismic groundshaking; and, B) landslides. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative geological impacts would be significant and unavoidable. See Section 5.5.C.11 for full analysis and details. These impacts are also addressed because of their potential to result in significant and unavoidable effects to humans. See Section 5.3 (Substantial Human Effects) for more details.

9. Hazardous Materials and Safety

Implementation of the General Plan as amended pursuant to the proposed project, GPA No. 960, would result in cumulatively significant impacts to the environment as a result of incremental exposure of people and structures to increased risks of wildland fires because of the additional development, particularly large-lot open space-rural residential (OS-RUR) in high- and very high-fire hazard severity zones, that would be accommodated by this project. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to this cumulative safety hazard would be significant and unavoidable. See Section 5.5.C.12 for full analysis and details. This impact is also addressed due to its potential to result in significant and unavoidable effects to humans. See Section 5.3 for more details.

10. Noise

As explained in Section 4.15 (Noise), noise increases are generally associated with two types of activities: construction and operation. Because of their limited spans, construction impacts are considered a "short-term" effect. Operational noise increases are considered long-term, since they would occur for the duration of a development or land use's lifespan (e.g., 30-plus years). As part of this EIR's analysis, both short-term and long-term potential for noise increases were examined with respect to GPA No. 960. In both cases, it was found that significant unavoidable impacts would occur as a result of the cumulative effects of various noise level increases and, in particular, that these cumulative totals would result in noise levels exceeding standards. This would both degrade the environment (making it unpleasantly noisy, for example) and/or curtail the range of the environment

(by making an area too noisy for wildlife use, as another example.) The specific types and their unique effects and mitigation needs are described below. Cumulative impacts, including those associated with noise, are discussed further in Section 5.5.C.14.

Because noise impacts result from the general growth pressures driving development within Riverside County, they are generally considered unavoidable; as long as people seek to live and work in Riverside County, these impacts will persist. It is for this reason that GPA No. 960 is proposed despite this significant, unavoidable impact. In some parts of Riverside County, noise levels already exceed established standards. In some locations, significant effects would persist, even without the additional development expected as Riverside County builds out according to the updated General Plan. Further, this also means that in some areas, even small, individually limited noise increases would contribute to incrementally considerable noise levels. This is particularly true of the ambient noise levels increases associated with increasing vehicular traffic on county roads. Overall, this means that for all intents and purposes, the noise impacts described below are unavoidable. Noise level increases, both temporary and permanent, would also contribute to the cumulatively significant noise impacts (see Section 5.5.C.14).

Generate Noise or Cause Noise Exposure in Excess of Standards: Future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. In some locations, this means the introduction of new noise-sensitive land uses into areas of existing excess noise or areas in which county growth would result in or eventually lead to excess noise levels. In addition, future development accommodated by GPA No. 960 would contribute incrementally to increased traffic volumes on county roads, resulting in noise increases affecting sensitive land uses along existing and future roads. As a result, new development, particularly residential uses along and adjacent to major transit corridors, could be exposed to noise levels that exceed Riverside County's noise standards. Existing sensitive uses would also be subject to these higher noise levels. In some locations, noise increases associated with roadways or new development would serve to curtail the potential habitat functions and values of adjacent open space or other vacant lands. Where noise generators would expose existing receptors (residences and other sensitive uses) to excessive noise, impacts would be significant and unavoidable, as mitigation of these incremental and wide-spread noise impacts is infeasible. Thus, this impact would result in both the degradation of the environment and significant human effects (see Section 5.3).

In most cases, new development can be designed to include the necessary setbacks, construction materials, sound walls, berms or other features necessary to ensure internal and external noise levels meet applicable standards (see measures outlined in Section 4.15.6). Where full mitigation may not be possible, however, is for noise exposure to existing uses, particularly to excessive roadway noise. Roadway noise is pervasive and increases incrementally as a result of build out of many small (and large) contributing developments throughout the county. As a result, numerous existing homes and other sensitive receptors could potentially be subjected to significant noise levels as a result of future development accommodated by the project. In some cases, mitigation of the excessive sound impacts on existing uses would be infeasible due to the sheer number of sites affected (e.g., hundreds or even thousands of homes) or the cost for retrofitting them individually for appropriate sound attenuation. In other cases, it simply may not be feasible to retrofit or redesign an existing receptor to provide greater noise attenuation and it is not always feasible to construct barriers between existing development and roadways.

In addition, the increases would be occurring on an incremental basis as a result of numerous individually insignificant, but cumulatively substantial, traffic level increases due to future projects. And, lastly, in many cases, even if adequate sound reductions are achievable for the near-term (e.g., existing conditions and the next 5-10 years), continued growth within Riverside County as it builds out over the next 50 years could eventually result in substantial ambient noise level increases later despite current measures. It is for this reason that GPA No. 960 is proposed despite this significant, unavoidable impact. While mitigation is available for protecting new noise-

sensitive land uses from potentially significant noise impacts, the same is not true for existing uses. Thus, this impact overall is a significant and unavoidable effect associated with the build out of Riverside County pursuant to the changes proposed by GPA No. 960.

Cause a Substantial Permanent Increase in Ambient Noise Levels: Future development associated with implementation of GPA No. 960 would contribute to an increase in traffic, resulting in a corresponding increase in traffic noise. As Riverside County builds out, traffic volumes would increase, triggering a corresponding incremental increase in vehicular noise. Vehicles are the single largest source of noise generation throughout Riverside County. In some areas, this would cause ambient noise to increase from acceptable to unacceptable levels (exceed 65 dBA, for example). Where existing ambient noise levels already exceed acceptable thresholds, the additional incremental traffic-related increase could result in greater noise impacts, including more people being annoyed or disturbed. Also, because of the exponential nature of sound levels, the louder the ambient noise level, the less increase in sound necessary to trigger a significant impact. Also, as per above, noise increases associated with roadways or new development would serve to curtail the potential habitat functions and values of adjacent open space or other vacant lands.

For new development, full mitigation would typically be feasible using standard project design or measures required as conditions of approval (for example, setbacks, sound walls, berms, etc.). For existing noise-sensitive land uses, however, due to the widespread and pervasive nature of the noise impacts, it is generally not be feasible to mitigate the impact fully for all affected receptors. Thus, this impact would be significant and unavoidable, even with the implementation of all feasible mitigation. It would result in both the degradation of the environment and significant human effects (see Section 5.3). Nevertheless, because permanent ambient noise levels would increase as a result of county growth, with or without the project, GPA No. 960 is proposed despite this significant, unavoidable impact.

Cause a Substantial Temporary or Periodic Increase in Ambient Noise Levels: Future development accommodated by GPA No. 960 would necessitate construction activities which could temporarily exceed applicable Riverside County standards at nearby noise-sensitive receptors. In many cases, the peak sound levels would be extremely brief and overall ambient noise levels would remain within acceptable limits. On occasion, however, construction requirements and/or the proximity of the sensitive land use (e.g., within 150 feet or less) would make significant noise impacts unavoidable, even though temporary. These temporary impacts would degrade the environment and also cause temporary human impacts (see Section 5.3). Because of the close distances involved for such significant impacts, mitigation of sound levels to less than significant are technologically impossible. Thus, in such cases, no project-specific mitigation is feasible. Future development accommodated by GPA No. 960 may result in significant short-term temporary noise impacts that would be significant and unavoidable. Notwithstanding this significant impact, growth within Riverside County is necessary to accommodate the expected population increase that will occur over the next 50 years plus. It is for this reason that GPA No. 960 is proposed despite this significant, unavoidable impact.

11. Parks and Recreation

Implementation of the General Plan as amended pursuant to the proposed project, GPA No. 960, would result in cumulatively significant impacts to the environment as a result of incremental adverse effects to existing recreational resources, including parks, trails and other facilities. Due to the wide-spread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to this cumulative recreation impact would be significant and unavoidable. See Section 5.5.C.15 for full analysis and details.

12. Public Facilities and Services

Analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental adverse effects to public facilities and services, including: fire protection, law enforcement, landfill capacity, schools, library services and, medical facilities and services. Due to the widespread effect of incremental growth accommodated by a General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative public facility and service impacts would be significant and unavoidable. See Section 5.5.C.16 for full analysis and details.

13. Transportation and Circulation

Implementation of the existing and proposed General Plan policies and mitigation measures would reduce many of the potential traffic impacts on Riverside County's arterial transportation and circulation system resulting from the future development of sites changed under GPA No. 960. However, in some locations, such as certain arterials and other major roads, the cumulative increase in traffic resulting from future development and growth within Riverside County in general would result in significant localized impacts. And, as alternative modes of transportation cannot be assured to reduce these impacts, these traffic increases are also considered unavoidable. See Section 5.5.C.17 for full analysis and details on cumulative impacts.

In addition, all state freeways are under the authority of Caltrans. Thus, where traffic increases would affect freeways, there is no mechanism for development project proponents to pay fees or make fair share contributions toward improving mainline freeway lanes. Also, even if there were such a mechanism, there is no way to ensure that such payments would be directed to a specific freeway improvement project. Consequently, there are no feasible mitigation measures for impacts to freeways; impacts would be significant and unavoidable.

Conflict with Circulation System Effectiveness Regulations for Any Form of Transportation: These impacts would facilitate the achievement of short-term goals to the disadvantage of long-term environmental goals. The provision of county roads would result in improved traffic flow in some areas, while at the same time contributing to increases in air pollutants, noise and traffic volumes. This impact would also indirectly degrade the environment and curtail the environmental functions and values of open lands through the introduction of roads into previously undeveloped or remote areas. This would lead to increased noise, air pollution, human disturbance and other related environmental effects. Altogether, this impact is significant and unavoidable.

14. Water Resources

Future development accommodated by GPA No. 960 would result in additional residences, businesses, landscaping, roadways and other uses within unincorporated Riverside County. A number of factors associated with water supplies make the resource of critical importance and a potentially limiting factor to growth throughout Southern California. These include: uncertainty associated with existing imported water supplies, seasonal variations in imported water availability (including the potential for greater variations as a result of global climate change or prolonged droughts), infrastructure needs (or lack thereof), groundwater basin water availability, recharge and potential overdraft issues, as well as lack of groundwater management plans for some basins and competing demands for finite supplies. Together, these issues make for a high level of uncertainty, particularly for projections of water availability beyond the 20-year planning horizons utilized by water agencies' urban water management plans.

Accordingly, several significant impacts to water resources will result from implementation of the General Plan pursuant to the changes proposed by GPA No. 960. In addition to the other issues discussed below, analysis indicates that the land use and policy changes proposed by GPA No. 960 would result in cumulatively significant impacts to the environment as a result of incremental adverse effects resulting in insufficient water supply; substantial depletion of groundwater supplies or substantial interference with groundwater recharge; substantial alteration of existing drainage patterns resulting in substantial erosion and/or siltation; runoff exceeding storm-water drainage system capacities or causing substantial water pollution; and, adverse effects due to the need for new or expanded stormwater drainage facilities. Due to the wide-spread effect of incremental growth accommodated by the General Plan, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative water resource impacts would be significant and unavoidable. See Section 5.5.C.18 for full analysis and details.

Result in Insufficient Water Supply: Future development accommodated by the land use and policy changes proposed by GPA No. 960 has the potential to result in demand for water supplies where such are insufficient or unavailable to serve the new development from existing entitlements and resources. This would necessitate the provision of new or expanded entitlements in order to adequately serve the new development. It could also mean that development is proposed in locations where water supply adequacy cannot be ascertained. Due to the unavailability of potable water in some areas, as well as the uncertainty of supply adequacy in light of future growth, environmental and regulatory constraints, adequate water supplies for all forecast future development cannot be assured. As a result, within certain areas of Riverside County where sufficient water supply is not available or cannot be assured into the future, impacts to water supply would be significant and unavoidable. Insufficient water supplies would also result in degradation of the environment (for example, if more water needed for wildlife use was diverted for drinking water supplies), curtailment of the environment (e.g., less water in natural systems needed for wildlife and riparian uses), as well as achievement of short-term environmental goals at the expense of long-term ones (for example, providing sufficient high-quality drinking water at the expense of the biota).

As described in Section 4.19.4, some water districts that would be affected by future development accommodated by GPA No. 960 have forecast future water demands in excess of the supply available. Where demand for water exceeds supply, a significant impact would occur. In some remote locations (particularly in the far eastern desert, beyond the Coachella Valley and the region south of the San Jacinto Mountains between Anza and Coachella Valley), lack of groundwater and/or lack of delivery infrastructure also are limiting factors. For all of these reasons, the impact of water supply insufficiency is deemed significant and unavoidable at this time.

Options available to address potential projected water shortfalls include both infrastructure projects (such as storage facilities and water reclamation plants) and water management strategies (such as conservation practices) that relate to how water is used by and among water users. However, the urban water management plans of the water districts only project water supply and demand out 25 years (to 2035 currently). Thus, any assumptions of future water supplies beyond 2035 are speculative. The General Plan and GPA No. 960 include policies (discussed in Sections 4.19.5.D and E) that establish and reiterate appropriate water management strategies at the county level, including conservation, collection of information, decreasing demand, outreach and education programs, assurances of adequate groundwater recharge areas and water supply monitoring.

Securing additional imported water is another way to increase the water supply. This water could come from existing imported sources (i.e., the Colorado River or other State Water Project sources), or could come from yet-to-be negotiated sources. It is possible that these measures would, in the future, be sufficient to avoid significant water supply effects. However, in the absence of a definitive identification of future water supply, potential impacts associated with water supply and demand must be considered significant and unavoidable. Notwith-

standing this significant impact, most of the urban areas of Riverside County are served by urban water purveyors with urban water management plans indicating that they have sufficient water supplies to meet their projected water demands for the next 25 years. This near-future certainty is sufficient to accommodate development in the near-term. As time passes, water projections will become more accurate and State of California water plans more robust, providing additional certainty over time. It is for these reasons that GPA No. 960 is proposed despite this significant, unavoidable impact.

Substantially Deplete Groundwater Supplies or Cause Overdraft: Future development accommodated by the land use and policy changes proposed by GPA No. 960 would increase Riverside County's population, triggering an increased reliance on groundwater sources. This is particularly likely in areas of Riverside County without municipal water service or other access to imported water supplies, where new development would rely solely on groundwater for supply. Increased and new uses may also conflict with a groundwater management plan or monitoring program, or lead to groundwater extraction that either individually or cumulatively exceeds the safe yields of groundwater basins and/or causes a net deficit in the aquifer volume or reduction in the local groundwater table level. In addition, future development accommodated by the project could also occur in vacant areas currently used for or contributing to groundwater recharge. Development of such areas would reduce the area available for aquifer recharge and could substantially interfere with the process of groundwater recharge. Any such condition could be potentially significant and would result in significant degradation of the environment (e.g., where increased reliance on groundwater would mean an increased reliance on water of lower quality) and/or result in significant curtailment of the environment (e.g., where draw down on a groundwater basin could lessen the amount of water available for riparian systems and other biota relying on groundwater). Lastly, this could also result in that achievement of short-term environmental goals to the detriment of long-term ones. This could occur where the use of groundwater solves a short-term environmental problem of insufficient water supply, but causes a long-term problem due to overdraft of the basin, reducing available supplies for both human users and that biota relying on the basin. A number of regulatory policies and programs address groundwater. However, where groundwater recharge is insufficient, such increased demand on aquifers would result in significant and unavoidable impacts.

The combination of increased demand for water associated with the growth envisioned by the project, uncertainty and cost of imported water supply, uncertainty of long-term supply scenarios in non-adjudicated basins, exploitation of new groundwater sources and the continuing pattern of basin overdraft, would all result in or contribute incrementally to substantially decreasing groundwater supplies. In addition, an assessment of future water supply adequacy beyond the Year 2035 (including groundwater) is speculative. And, since at present roughly one-third of Riverside County's water demands are met by groundwater, this uncertainty means that significant impacts associated with project build out over the next 50-plus years cannot be ruled out.

While the regulations, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 outlined in Section 4.19 would reduce or minimize potential impacts to groundwater usage and its recharge associated with future development accommodated by GPA No. 960, they do not address specific groundwater basin usage or site-specific groundwater recharge impacts that would result indirectly from implementation of the proposed project. In addition, agency data demonstrating future groundwater supply and demand only forecast to 2035, thus making supply assumptions for this project uncertain at best. Thus, even with the above measures, impacts to groundwater and groundwater recharge would remain significant and unavoidable.

Notwithstanding this significant impact, most of the urban areas of Riverside County are served by urban water purveyors with urban water management plans that address both imported and groundwater sources. Further, most of these plans indicate that the districts have sufficient water supplies to meet their projected water demands for the next 25 years, even allowing for appropriate groundwater management measures to prevent overdraft. This near-future certainty is sufficient to accommodate future development in the near-term. As time passes,

groundwater basin conditions will become better studies and better managed and groundwater yield and recharge projections will become more accurate, providing additional certainty over time. It is for these reasons that GPA No. 960 is proposed despite this significant, unavoidable impact.

C. Other CEQA Impacts

In addition to the significant resource-based environmental impacts discussed above, the project would also have significant, unavoidable impacts resulting from various growth-inducing, cumulative and other effects, as follows.

1. Significant Growth Inducement Effects

Based on analysis presented in Section 5.4, it was determined that a number of the proposed changes associated with GPA No. 960 would limit or impede growth (for example, by placing further restrictions on floodplains or wildfire hazard areas) or would induce insignificant amounts of growth (less than 0.1% of the overall growth by Area Plan, for example). An example would be the provision of small, scattered incidental rural-commercial retail uses in under-served regions that is expected to result from the proposed incidental rural-commercial policy proposal. However, for land use, three specific overlay plans for future development proposed under GPA No. 960 would have the potential to induce significant growth within Riverside County. The three project components that would foster economic, population and housing growth within a portion of Riverside County are the proposed Meadowbrook Rural Village Land Use Overlay, the Good Hope Rural Village Land Use Overlay and the Northeast Business Park Overlay. The significant levels of growth associated with these three land use plans would result in the unavoidable growth impacts. These impacts are unavoidable because the population to be accommodated in these new areas would be creating similar impacts elsewhere if not at these new locations. Further, the accommodation of additional development in these locations could also offset the demand for development at more distant locales in which development impacts would be even greater.

As detailed in Section 5.2, and Table 5.2-A (Open Space Areas Proposed for Future Developed Uses) in particular, "Criteria 4" land use designation (LUD) changes (from Open Space-conservation and conservation habitat uses to developable uses) would also result in significant growth-inducing impacts. These redesignations of previously undevelopable lands are growth-inducing because they would introduce development into isolated or remote areas. However, this impact is unavoidable because without these designation changes, private lands would be incorrectly designated as conservation lands and deprived of their usability as private land.

In addition, proposed changes to the countywide circulation network could also induce significant growth due to the essential nature of roads in providing access to remote or isolated regions, and in removing impediments to growth by establishing an essential public facility. Again, these impacts are unavoidable due to the need for access to private lands that would trigger some of the most remote roads. The need for improved traffic circulation, reduced traffic levels and improved emergency vehicle access also make these network improvements unavoidable despite their significant growth-inducing effects.

These finding of significant growth-inducing effects associated with GPA No. 960 are not unexpected given the programmatic nature of the project, its countywide scope and the nearly 50-year build out period involved. The nature and purpose of the General Plan is inherently growth inducing, in that is represents a plan for ensuring the orderly development of land within unincorporated Riverside County over time. As such, the myriad policies, plans, procedures and standards outlined throughout the Riverside County General Plan, as updated pursuant to GPA No. 960, as well as this EIR and also the existing EIR No. 441, certified for the 2003 RCIP General Plan, collectively serve to mitigate and reduce, where possible, the severity of the environmental effects associated with growth and build out of Riverside County. With continued diligence in implementing the General Plan, long-

term growth within the County of Riverside can continue while environmental effects are kept to the minimum feasible and the unique biological and other important natural resources of Riverside County are protected for the health and enjoyment of existing residents and visitors, as well as for future generations to come. Thus, for these reasons, GPA No. 960 is proposed despite these significant, unavoidable growth-inducing impacts.

2. Significant Effects on Humans

As outlined in Section 5.3, a number of environmental effects associated with the project, GPA No. 960, have the potential to result in "environmental effects which [would] cause substantial adverse effects on human beings, either directly or indirectly." (State CEQA Guidelines, Appendix G, Item XVIII.c.) The specifics for each of these impacts are outlined in their respective portions of Section 4.0, as well as in Section 5.3. In a few cases, the project would have substantial direct adverse effects on humans. These unavoidable direct effects include the following:

- Exposure of sensitive receptors (e.g., various populations of people with sensitive respiratory systems) to cumulatively significant levels of air pollutants. See Impact 4.6.D in Section 4.6.6, as well as Section 5.3.

- Exposure of people to noise levels in excess of standards. See Impact 4.15.A in Section 4.15.6, as well as Section 5.3. This cumulatively substantial and unavoidable noise impact would affect people where such noise exposure is above the acceptable noise levels established in various County of Riverside and State of California noise standards.

Most of the substantial adverse human impacts would occur indirectly as a result of various cumulative or growth-associated effects. They are unavoidable because they would occur as a result of many individually insignificant, but cumulatively considerable, impacts. These include the following:

- Safety risks to humans due to their potential exposure to strong seismic groundshaking (Impact 4.12.B) would result from growth within Riverside County. This indirect impact is an unavoidable risk associated with much of Southern California due to proximity to the San Andreas Fault and other major faults capable of producing strong groundshaking. See Section 4.12 (Geology and Soils) for full details.

- Safety risks to humans would result from their potential exposure to landslide hazards due to seismic activity or other non-engineering based geological failures. See Impact 4.12.D (Section 4.12.6). This indirect impact is an unavoidable cumulative effect of growth resulting in development in areas with landslide hazards that cannot be remedied by engineering methods.

- Safety risks to humans due to their potential exposure to wildfires would result from county growth (development) in areas with high wildfire hazard potential, particularly in rural areas and adjacent to natural areas. See Impact 4.13.H outlined in Section 4.13 (Hazardous Materials and Safety). This indirect impact is an unavoidable cumulative effect of growth leading to an increased number of people in areas of wildfire hazard and increased potential for human-caused wildfires due to increased human encroachment into wildlands.

- Adverse effects on humans through a substantial permanent increase in ambient noise levels. See Impact 4.15.C (in Section 4.15.6). This cumulatively substantial and unavoidable permanent noise increase would affect people where such long-term exposure is above the acceptable noise levels established in various County of Riverside and State of California noise standards.

- Adverse effects on humans through the temporary exposure to substantial construction-related ambient noise levels. See Impact 4.15.D (in Section 4.15.6). This cumulatively substantial and unavoidable temporary noise increase would affect people where such exposure is above the acceptable noise levels established in various County of Riverside and State of California noise standards. Due to the temporary (i.e., short-term) nature of the impact, however, the effect on humans would be self-limiting.

These substantial human effects are considered unavoidable for the reasons listed under their respective impact discussions, as cited above.

3. Significant Cumulative Impacts

A number of impacts have been found to be cumulatively significant, even when individually limited. These cumulatively significant impacts are summarized in Table 5.5-A and described in detail throughout the sub-sections of Section 5.5.C. These cumulative impacts are considered unavoidable because they would result as a consequence of long-term growth within Riverside County and occur in incrementally insignificant but cumulatively substantial stages.

D. Unavoidable Significant Effects Conclusions

For the reasons outlined above and throughout the various parts of Sections 4.0 and 5.0, the future development accommodated by GPA No. 960 pursuant to the updated Riverside County General Plan would be associated with a number of significant, unavoidable impacts. These can be summarized as follows:

A number of unavoidable significant impacts associated with GPA No. 960 would have the potential to degrade the quality of the environment, including: encroachment into or conflict with areas with existing agricultural uses, short-term construction and long-term operational air quality emissions, as well as cumulatively significant project air quality, excessive noise levels and both temporary and permanent increases in ambient noise levels, and provision of roads in conflict with circulation performance standards.

These unavoidable significant impacts would have the potential to curtail the range of the environment: indirect conversion (loss) of designated Farmlands to non-agricultural uses, insufficient water supplies (to assure long-term water availability) and the depletion of groundwater supplies (and resultant overdraft conditions) due to increased use of groundwater in the future.

These unavoidable significant impacts would facilitate the achievement of short-term goals to the disadvantage of long-term environmental goals: provision of county roads, leading to improved traffic flow in some areas while contributing to increases in air pollutants, noise and traffic congestion; actions to obtain additional imported water supplies to meet increasing demands would contribute to potential long-term environmental effects to the natural watersheds normally using the water; similarly, using groundwater to meet local water supply needs could also lead to overdraft of basins without sufficient recharge. And, lastly, growth induced by the project would achieve short-term goals, particularly economic ones, while resulting in adverse effects on the natural environment.

These unavoidable significant impacts would be cumulatively considerable, even though individually limited in most cases: inducement of population growth, adverse effects to scenic vistas, adverse light and glare effects, conversion of designated farmlands to non-agricultural uses, encroachment of new development into areas with existing agricultural uses, short-term and long-term air quality emissions, cumulative project air quality *and greenhouse gas* impacts, exposure of sensitive receptors to air pollutants, *impediment of 2050 greenhouse gas emission reduction*

targets, exposure of people or structures to strong seismic groundshaking, landslides and wildland fires, excessive noise levels, permanent or temporary increases in ambient noise levels, conflicts with circulation system performance and congestion management programs, insufficient water supplies, depletion of groundwater supplies or overdraft, effects to existing recreational resources and permitted landfill capacity, and impacts due to the need for additional stormwater drainage facilities. A number of growth-inducement effects would also be cumulatively significant, even if individually minor. These include: direct and indirect economic growth, population growth and the construction of additional housing.

Lastly, these significant impacts would have the potential to cause unavoidable substantial adverse effects on human beings, either directly or indirectly: exposure of sensitive receptors to air pollutants, including both short-term (construction) and long-term (operational) air emissions, as well as exposure to noise levels in excess of standards, including from both temporary and permanent increases in ambient noise levels. Substantial adverse human impacts would also occur indirectly as a result of safety risks due to potential exposure to strong seismic groundshaking, landslide hazards and wildfires.

Because GPA No. 960 seeks to update the existing Riverside County General Plan, it is unavoidably associated with impacts that would have a significant effect on the environment, as outlined above. Further, due to the nature of the General Plan as a tool for directing appropriate growth within Riverside County over time, these significant impacts are unavoidable. As detailed throughout this EIR, and particularly in Section 4.0, the General Plan seeks to ensure future development anticipated in Riverside County is planned for and accommodated in a manner that minimizes adverse environmental effects to natural resources and human beings within Riverside County and maximizes the conservation and protection of important resources, while at the same time providing the flexibility and organization needed to continue to grow as a county. It is for this over-arching reason, addition to those outlined herein, that GPA No. 960 is being proposed despite these significant and unavoidable effects.

5.2 Significant Irreversible Environmental Changes

A. Introduction

CEQA (PRC) Sections 21100(b)(2) and 21100.1(a) require that EIRs prepared for the adoption of a plan, policy or ordinance of a public agency include discussion of significant irreversible environmental changes resulting from project implementation. The State CEQA Guidelines, CCR Section 15126.2(c), describes "significant irreversible environmental changes" that would be caused by a project as the following:

> *Uses of nonrenewable resources during the initial and continued phases of a project may be irreversible, since a large commitment of such resources makes removal or non-use thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.*

With the above in mind, the various proposed components of the project, GPA No. 960, were evaluated for their potential to cause or result in significant irreversible environmental changes. It should be noted that unlike standard significance findings for impacts that cannot be reduced through mitigation, a significant *irreversible* change may occur when an action commits "future generations to similar uses," irrespective of any mitigation applied to the specific action. Thus, the following question was analyzed to determine if significant irreversible

environmental changes would be associated with the project: Would the project components do any of the following?

1. Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.

2. Result in the commitment (or consumption) of "irretrievable" (i.e., non-renewable) resources beyond what is justified.

3. Result in primary or secondary impacts that generally commit future generations to similar uses.

4. Result in an environmental accident that could cause irreversible damage.

B. Analysis of Project Components

The various project components of GPA No. 960 were analyzed to assess the likelihood of their exceeding one of the above criteria. The results are grouped by criteria and discussed below. For further details on the specifics proposed for these components, see Section 3.0 (Project Description).

1. Result in a Large Commitment of Non-Renewable Resources

This effect represents a significant irreversible environmental change when it involves the large commitment of resources in a manner that makes their later removal or non-use unlikely. This includes, in particular, the use of non-renewable resources during either construction or operational phases of development.

A non-renewable resource is one that comes from the earth and cannot be readily replenished within the human timescale. This includes mineral resources, particularly aggregate and metal ores, and fossil energy resources, such as oil, coal and natural gas. Aggregate minerals, including rock, sand and gravel, are used extensively in the construction of structures, roads and other infrastructure (particularly canals and other drainage facilities). Related mineral resources are also used to manufacture cement, drywall and other essential building materials. Metal ores are necessary to produce the myriad metals needed for modern life: iron is necessary to make steel, used in everything from penny nails to I-beams to literally the kitchen sink; copper is used extensively for wiring in homes and businesses, as well as in electrical generators, and copper piping is often used for plumbing; aluminum is also used extensively in building construction, as well as for food packaging, in sodas and canned foods; precious metals, such as platinum, gold and silver, are used both for industrial uses, particularly in high-tech devices (cell phones, computers, etc.), as well as for jewelry and artistic works, as are precious stones (industrial-grade diamonds and garnets used for cutting, grinding and polishing, and gem-quality stones used for adornment). "Technology metals," such as cobalt, europium, cadmium, yttrium, gallium, indium, niobium, scandium, erbium, lanthanum and neodymium, plus lithium, are used in the mass-production of miniaturized electronics (including anything with a computer chip), weapons systems and batteries. As an example, every Prius hybrid car carries with it about 10 pounds of lanthanum, as a "nickel-metal hydride," in its batteries. And, of course, uranium is mined and purified for use as nuclear fuel in reactors. Because of their association with energy production, fossil fuels are discussed under the subsequent subsection, below, rather than here, where the emphasis is on ore-based mineral resources.

As outlined in Section 4.14 (Mineral Resources), the State of California uses large, multi-county "Production-Consumption Regions" as their boundaries for study areas for assessing aggregate production capacities and their associated market areas. As part of the classification process, the State of California has calculated both the fifty-year aggregate demand forecast and the amount of aggregate resources available for the given area. Three State

Production-Consumption Regions include parts of Riverside County. This is important, as the mining of aggregate resources located too close to urban or environmentally sensitive areas is often infeasible due to land use conflicts. Yet when located too far away, the cost of transportation (fuel) makes a mineral resource economically non-viable (and indirectly increases production and consumer prices as well). However, as outlined in Section 4.14, analysis indicates that even with the future development outlined under the project, the availability of aggregate resources in Riverside County would still be assured. Sufficient aggregate resources exist or are potentially developable for future use as needed to meet the next 50 years of demand for the region's growth.

As discussed more fully under item *3*, below, the project does not include any actual development proposals. It would, however, potentially enable future development in a variety of areas – increasing development potential in some areas, decreasing the potential in others. Among the project items with a land use component, no refineries, large-scale manufactories or large-scale infrastructure development (i.e., hydroelectric dams, nuclear reactors, wastewater treatment facilities, canals, interstate freeways, etc.) or other massive structures (skyscrapers, penitentiaries, etc.) are proposed or planned which would necessitate the commitment of large amounts of aggregates, including rock, sand, gravel, cement and other minerals to accommodate the project. Road-building, which utilizes large amounts of aggregates, will occur throughout Riverside County as per the countywide circulation network proposed for the updated General Plan. These roads, however, would be constructed incrementally in segments over the next 50 years. Accordingly, demands for aggregate resources would remain relatively consistent over this period, with demand increasing roughly according to county growth rates. As such, demand for aggregate materials would be relatively constant, fluctuating mainly with growth rates and well within the forecast horizons of supply availability for the Riverside County's Production-Consumption Regions. See Section 4.14 for more details on mineral resources.

Similarly, in relation to ores and metals, no foreseeable mining uses, large-scale manufactories, foundries, smelters, high-tech device plants or energy-generation uses, which include wind farms, non-photovoltaic solar farms and other energy plant facilities that would require large amounts of various metals, particularly copper, for use in the motors that ultimately generate the electricity, are proposed or planned which would necessitate the commitment of large amounts of ore or metals in their construction or operation.

In total, none of the items proposed as part of GPA No. 960 would necessitate a large commitment of non-renewable resources in a manner that makes their later removal or non-use unlikely. The project would not result in a significant irreversible change in the environment due to the use of non-renewable resources.

2. Result in the Unjustified Consumption of Non-Renewable Resources

As outlined in Section 4.10 (Energy Resources), energy resources can most broadly be defined as the force that enables work to be done. Most commonly, this force is generated from either electricity (electrons) flowing through a circuit or motor, or from the combustion (burning) of a fuel in an engine. The types of fuel used to run an engine or motor include both renewable and non-renewable sources. For full details on this issue, see Section 4.10. For the purposes of the discussion here, however, non-renewable fuels may be simply defined as those coming from the earth that cannot be replenished on a human timescale. Thus, petroleum (oil), coal, natural gas and the associated materials and byproducts of the pumping and refining of these fuels, collectively "fossil fuels," represent the most common and widely-used non-renewable energy sources.

As mentioned above, a project may be deemed to have significant irreversible changes if it would necessitate the unjustified (i.e., wasteful) consumption of non-renewable resources, in this case, fossil fuels. Future development accommodated by the project would require the consumption of fossil fuels (oil and other petroleum products) to run equipment, such as bulldozers, backhoes, scrapers and other construction equipment, as well as to run manufacturing and other industrial machinery. Oil and other petroleum products would also be used to run

motor vehicles for commuters, personal trips, shipping and transit, aircraft and ship-borne traffic, as well as other types of vehicles (recreational vehicles, forklifts, etc.). Vehicular use represents the largest source of fossil fuel use within Riverside County. Fossil fuels, particularly coal and natural gas, are also used to generate steam to run steam-turbines in the production of electricity by utility providers. Lastly, natural gas, as well as less commonly fuel oil, propane or kerosene, are used to heat and/or cool homes and other dwellings, run boilers and various other industrial and commercial equipment.

Analysis of these energy uses was conducted as outlined in Section 4.10. The results indicate that the project would not result in an excessive (significant) consumption of non-renewable resources. The uses proposed to be accommodated by GPA No. 960 are those necessary to accommodate the continued future growth of Riverside County in an orderly, reasonable manner. As such, none of these uses would be considered "unjustified." Additionally, a variety of policies and plans included in the project would ensure that energy resources (renewable and non-renewable) are used in an efficient and judicious manner. Riverside County's proposed Climate Action Plan, in particular, includes numerous measures to reduce fossil fuel combustion (as a way of reducing greenhouse gas emissions) and improve energy efficiency. See Section 4.7 (Greenhouse Gases) for more details.

In total, the analysis in this EIR indicates that GPA No. 960 would not result in the unjustified consumption of non-renewable resources and would not cause a significant irreversible environmental change as a result.

3. Commit Future Generations to Similar Uses

Another irreversible change is one that commits future generations to similar uses. For the purposes of this EIR, such an environmental change is defined as one resulting in a transformation of the fundamental character of a site such that it would no longer be suitable for certain uses. The most archetypical example of such a change would be the conversion of vacant open space with natural vegetation to an urban or suburban use – such as a tract of homes or a strip of commercial stores, for example. In such cases, the resulting environmental changes would be very difficult to reverse; the cost of reversal combined with the investments already in place make the likelihood of a significant change in use highly unlikely. This type of change can occur through two mechanisms: direct changes, such as development of vacant land, particularly open space; and, secondary changes, such as introduction of roads or other infrastructure that makes a previously undeveloped area more likely to develop.

GPA No. 960 does not propose or include any actual development as part of the project. It does, however, propose changes at the General Plan level that could result in future development of lands, as well as infrastructure, particularly roads and trails. This is most evident in the project components related to land use. In many cases, the project merely proposes to change the land use potential of a site (i.e., through land use designation change) or area (due to a new or revised policy area, overlay or other policy) in a manner that may increase or lessen future development potential on a site either already developed or already proposed for development under the existing General Plan. In these instances, the proposed changes would not cause *new* impacts due to the commitment of future generations to similar uses. Likewise, the various informational item changes proposed in the Safety Element and Multipurpose Open Space Element also would not affect future commitments. Because they disturb such small areas and are typically easily reversible, the new trail alignments proposed in GPA No. 960 also would not be considered a source of significant irreversible change.

Where the proposed updated countywide circulation network plan proposes new roadways alignments in areas previously without roads, however, these could have a potentially significant irreversible effect. Although new roads in and of themselves can have relatively small impact footprints, the growth-inducing effects that often accompany new roads create a whole suite of attendant growth-inducing effects that can collectively result in significant irreversible impacts to previously pristine, vacant open space lands.

Of the land uses proposed (mapped) in the General Plan Land Use Element, a number of parcels are proposed for land use designation (LUD) changes as part of GPA No. 960. In the "real world," the exact timing and location of individual future projects developed pursuant to the updated General Plan are not foreseeable because of the numerous economic, demographic and other factors that influence such decisions. However, for the purposes of this analysis it was assumed that all of the LUD changes proposed in GPA No. 960, as well as all other project land use changes with known spatial components would occur incrementally over the next 50 years. Such an assumption enables theoretical predictions to be made about potential future commitments of resources needed to serve the proposed levels of development.

Future development within Riverside County resulting from the proposed spatial changes included in GPA No. 960 would result in the construction of structures, facilities and infrastructure on lands that are currently undeveloped. Development of lands would generally result in their future and permanent commitment to built uses. Environmental changes associated with future development would occur as the physical environment is altered. Changes to the physical environmental would occur through the continued commitments of land and construction materials to urban and rural development. There would be an irretrievable commitment of labor, capital and materials used in construction, and a permanent loss of open space. Specifically, the project components that are considered to have the potential for committing future generations to similar uses are those that affect lands that would be undeveloped, *but for the proposed change*, and also lands subject to new roadways. In some cases, the project proposed to change LUDs from those with little to no development potential (i.e., OS-C, OS-CH or OS-W) to a developed use (most often rural residential). These are shown in Table 5.2-A (Open Space Areas Proposed for Future Developed Uses), below.

As indicated by the table, a total of approximately 2,784 acres would be committed to significant irreversible environmental changes due to the future development potential on these sites resulting from GPA No. 960. This includes areas denoted by C2-3b, C2-6 and C2-7, totaling roughly 232 acres where the sites are surrounded on all sides by lands designated OS-CH, have native vegetation and no access roads on, abutting or in the vicinity of the parcels. Nine proposed changes (C2-1b, C2-4, C2-5, C2-8B, C2-13b, C2-17b, C2-20, C2-21, C2-22a and C2-23b) totaling just under 2,300 acres would affect lands surrounded by OS-CH areas on at least two sides, with little to no access (sporadic dirt roads, at most), intact or mostly intact native vegetation and only sparse rural and/or agricultural development in the vicinity. And in two areas, denoted by C2-15 and C2-23b, a total of roughly 254 acres are located in areas of generally undeveloped open space in which future development would represent an extension of rural or suburban land uses in the region onto undeveloped lands. Further, this impact would be unavoidable as it results from build out of the General Plan, which would accommodate Riverside County's growth with or without GPA No. 960.

Table 5.2-A: Open Space Areas Proposed for Future Developed Uses

PROJECT COMPONENT	Existing General Plan LUD (acres)				Proposed per GPA No. 960		GRAND TOTALS (acres)	
	OS-W	OS-C	OS-CH	TOTAL	Proposed LUDs (acres)		Affected	Open Space Conserved
Anza Valley Policy Area	74.81	1,196.75	10,736.02*	**12,007.58**	OS-RUR	0.20	**0.20**	**12,007.38**
C2-1b	---	---	434.43	**434.43**	OS-RUR	434.16	**434.16**	**0.27**
C2-2	---	---	3.80	**3.80**	MDR	3.63	**3.63**	**0.17**
C2-3b	---	---	35.70	**35.70**	OS-RUR	35.70	**35.70**	**0**
C2-4	---	---	40.52	**40.52**	OS-RUR	40.52	**40.52**	**0**
C2-5	---	---	39.19	**39.19**	OS-RUR	39.19	**39.19**	**0**
C2-6	---	---	4.72	**4.72**	OS-RUR	4.72	**4.72**	**0**
C2-7b	---	---	191.26	**191.26**	OS-RUR	191.26	**191.26**	**0**
C2-8b	---	---	71.27	**71.27**	RR	71.27	**71.27**	**0**
C2-9	---	---	40.35	**40.35**	RM, RR	9.33, 31.02	**40.35**	**0**
C2-10	---	---	52.66	**52.66**	RM, RR	22.76, 29.90	**52.66**	**0**

PROJECT COMPONENT	Existing General Plan LUD (acres)				Proposed per GPA No. 960		GRAND TOTALS (acres)	
	OS-W	OS-C	OS-CH	TOTAL	Proposed LUDs (acres)		Affected	Open Space Conserved
C2-11	---	---	82.76	**82.76**	RM	82.76	**82.76**	**0**
C2-12	17.07	---	108.28*	**125.35**	RM, RR	46.23, 61.78	**108.01**	**17.34**
C2-13b	---	---	544.64	**544.64**	OS-RUR, RR	529.64, 2.00	**531.64**	**13.00**
C2-14	---	---	40.79	**40.79**	RM	40.07	**40.07**	**0.72**
C2-15	---	---	99.28	**99.28**	OS-RUR, EDR	15.06, 84.22	**99.28**	**0**
C2-17b	---	---	855.04	**855.04**	OS-RUR	755.01	**755.01**	**100.03**
C2-20	---	---	5.51	**5.51**	RR	5.51	**5.51**	**0**
C2-21	---	---	147.38	**147.38**	OS-RUR	138.71	**138.71**	**8.68**
C2-22a	---	---	160.72	**160.72**	EDR, MDR, RM, RR	6.44, 0.66, 133.48, 20.15	**160.72**	**0**
C2-23b	---	---	154.63	**154.63**	OS-RUR	154.63	**154.63**	**0**
C2-24	---	---	151.69	**151.69**	RR	151.69	**151.69**	**0**
C4-1a	---	3.47	---	**3.47**	MDR	3.47	**3.47**	**0**
C4-2	---	4.53	---	**4.53**	VLDR-RC	4.53	**4.53**	**0**
C4-3	---	19.64	---	**19.64**	RR	19.64	**19.64**	**0**
C6-1	134.97	---	264.00*	**398.97**	PF	264.00	**264.00**	**134.97**
C6-2	---	---	7.73	**7.73**	PF	7.73	**7.73**	**0**
C6-3	---	---	0.06	**0.06**	---	0	**0**	**0.06**
C6-4	---	61.03	---	**61.03**	---	0	**0**	**61.03**
C6-8	---	---	61.89	**61.89**	PF	61.89	**61.89**	**0**
C8-10	0.87	---	---	**0.87**	LI	0.87	**0.87**	**0**
Fish Farms	267.34	---	---	**267.34**	AG	267.30	**267.30**	**0.04**
Lakeland Village	---	230.47	---	**230.47**	CR, MDR	0.84, 21.58	**22.42**	**208.05**
Meadowbrook	---	---	2.26	**2.26**	MDR	2.26	**2.26**	**0**
San Jac. AG/DEV	66.04	2.11	259.79	**327.93**	---	0	**0**	**327.93**
GRAND TOTAL	**561.10**	**1,518.21**	**15,625.64**	**17,704.96**	**VARIOUS**	**3,795.81**	**3,795.81**	**12,879.66**

* Denotes existing LUD proposed for change under GPA No. 960, as indicated, if more than one existing OS LUD.
Source: Riverside County Planning Dept., Analysis of Project Data, 2011.

The future development potentially allowed on these sites as a result of the LUD changes proposed under GPA No. 960 would lead either to irreversible change in the middle of vacant, undeveloped land with intact native vegetation and other natural resources, and possibly require further disturbances to provide access, water, sewer collection and other infrastructure, or would represent the extension of an existing general pattern of land use (typically rural or agricultural) into natural open space located on the border between developing areas and natural open space. Once developed, the loss of open space is generally irreversible. The natural biota in a given locale is the result of millennia of evolution. Thus, the ability of humans to fully restore the functions and values of biota and habitat lost to development is limited. Accordingly, to ensure the "worst case" is considered, areas with urban, suburban or rural development potential are considered to be subject to permanent, irreversible effects on the natural communities, plants, wildlife and their patterns of existence in these areas. Because of restoration difficulties, future development of these areas would represent significant irreversible changes in the environment and commit future generations to perpetuating the developed uses that would result.

4. Potential for Accidental Irreversible Damage

Another source of significant irreversible change is from accidents causing irreparable environmental damage. Such accidents could occur through a variety of human activities, including: spill or release of a hazardous material or radioactive substance to land, air or water; accidental fires in wildlands due to human carelessness or inattention, or fires resulting from mechanical or industrial failures (pipe ruptures, airplane or vehicle crashes, etc.); flooding or dam inundation due to failure of a man-made structure for channeling or retaining water (dams,

canals, etc.); or, landslides or mudslides resulting from failure of an engineered slope or soil, or improper hydrological improvements (drainage). While there are many other types of accidents possible, those listed above represent the key sources for irreversible damage that can be associated with the types of future development (i.e., human alterations of the natural environment) to be accommodated by GPA No. 960.

As noted above, the project does not include any actual development proposals. It would, however, alter future development in a variety of areas – increasing development potential in some areas, decreasing the potential in others. As such, it does not include any new proposals for specific uses in which hazardous materials or radioactive substances would be used, generated, stored, processed or shipped. In addition, no new or revised landfill or waste disposal sites are proposed as part of GPA No. 960. Some areas may ultimately be developed as a commercial, industrial or public facility in which hazardous materials are used at some time in the future. However, such locations and uses are not unforeseeable at this time and it is presumed that such risks would also be mitigated by compliance with standard regulatory requirements for the use of hazardous materials. Likewise, for the types of residential, commercial and industrial development that would be accommodated by GPA No. 960, it is assumed that all new uses of hazardous materials would occur pursuant to applicable laws and regulations. That is, commercial or industrial use involving hazardous materials would obtain and comply with a valid materials license specifying the requisite safety measures for the use, handling, storage, transportation and disposal of these materials. See Section 4.13 for more details.

Similarly, while the project would facilitate the extension of development into previously undeveloped areas (as discussed above), these areas are not considered to be of significant increased risk of damage due to wildfire potential. Where new development approval is sought within areas of High Fire Hazard, the various fire fuel modification zone and/or setback requirements would apply. As outlined in Section 4.13, such measures would be sufficient to minimize wildfire threats. Likewise, all new commercial, industrial and public facilities would also be subject to applicable approvals, regulatory compliance and other policies and programs aimed at ensuring the safety of hazardous materials, dangerous substances, electrical equipment and the like are installed and used safely. A variety of fire standards for construction, pursuant to the California Building Code, also would apply to future development.

No new dams or reservoirs are proposed as part of the project. Further, it is assumed that any proposed in the future would be subject to all applicable grading, construction and geotechnical design standards and regulations adopted for the purpose of ensuring such facilities are safely constructed, operated and maintained. This includes strict prohibitions and regulations regarding 100-year floodplains that would also further protect future development from potential flooding risks. See Section 4.11 (Flood and Dam Inundation Hazards) for details.

Lastly, with no specific development proposals included in GPA No. 960, the locations and specifics of future slopes, cut and fill excavation, and other soils engineering activities, as well as future drainage plans and hydrology changes, cannot be foreseen at this time. It is assumed, however, that all future development, including excavation, compaction, grading, construction of structures, roads, drainage facilities, slopes, landfills, pads, foundations, piers and numerous other activities, would all be subject to the extensive local, state and federal regulations, building codes and geotechnical standards enacted to ensure that such uses do not result in a geotechnical, soil or slope hazard. See Section 4.12 for additional information.

In total, for all of the above reasons, the changes associated with GPA No. 960 would not result in a significant risk for an accident or upset that would cause irreversible environmental damage.

C. Conclusion on Irreversible Changes

In total, the analyses presented in this EIR indicate that none of the items proposed as part of GPA No. 960 would necessitate a large commitment of non-renewable resources in a manner that makes their later removal or non-use unlikely. The analysis also found that future development accommodated by GPA No. 960 would not be expected to result in the unjustified consumption of non-renewable resources. And, in addition, the changes associated with GPA No. 960 would not result in a significant risk for an accident or upset that would cause irreversible environmental damage. This includes accidents associated with a variety of human activities, including: spill or release of a hazardous material or radioactive substance to land, air or water; accidental fires in wildlands due to human carelessness or inattention, or fires resulting from mechanical or industrial failures (pipe ruptures, airplane or vehicle crashes, etc.); flooding or dam inundation due to failure of a man-made structure to properly channel or retain water; or, landslides or mudslides resulting from failure of an engineered slope or soil, or improper hydrological improvements (drainage).

The future development potentially accommodated in some locations as a result of the LUD changes proposed under GPA No. 960 would, however, lead to irreversible changes in the middle of vacant, undeveloped land with intact native vegetation and other natural resources, due to development and possibly the need to provide access, water, sewer collection and other infrastructure. In other areas, it would result in the extension of an existing development pattern (most typically rural or agricultural) into open lands lying on the border between developing areas and native open space. Because of the difficulty in restoring previously untouched areas to fully functional natural resource values, including biological, hydrological, geological, in addition to edge effects, the future development of these areas would represent significant irreversible changes in the environment and likely commit future generations to perpetuating the resultant developed uses. Introduction of roads into previously inaccessible areas would have a similar effect. Although roads in and of themselves can have relatively small impact footprints, in some cases the growth-inducing effects that accompany such roads (due to opening access to new areas) create a whole suite of attendant effects that can collectively result in significant irreversible impacts to previously untouched, vacant open space lands.

The individual environmental effects of future development in specific locations are addressed and, in many cases mitigated to less than significant levels, in the respective parts of Section 4.0. However, notwithstanding these mitigation measures, the irreversible nature of the effects to natural open space areas would remain significant due to their essentially irreversible nature. This effect is a cumulative outcome would result from the build out of the General Plan, both the existing General Plan and for the updated General Plan, as proposed pursuant to GPA No. 960. As such, the policies and programs outlined in the General Plan itself, as well as the proposed Climate Action Plan, EIR No. 521 and existing EIR No. 441, which was certified for the 2003 adoption of the RCIP General Plan, provide a suite of measures that mitigate the effects of continued county growth. However, no other specific mitigation measures are feasible with regard to this effect. As such, this impact would remain significant and unavoidable.

5.3 Significant Effects on Humans

As mentioned in Section 5.1, a number of environmental effects associated with the project, GPA No. 960, have the potential to result in "environmental effects which [would] cause substantial adverse effects on human beings, either directly or indirectly." (State CEQA Guidelines, Appendix G, XVIII.c.)

The project would have a wide range of effects on human beings. Of these impacts, a handful would rise to the level of resulting in "substantial adverse" human effects due to their degree of individual effect, their cumulative

effect or their unavoidability. The majority of these human impacts arise indirectly from cumulatively substantial effects. Two would occur as a direct result of the project, as summarized below. These substantial human effects are considered unavoidable for the reasons listed under their respective impact discussions, as cited below. For further details on a given impact, see the respective environmental impact and section listed.

A. Air Quality

As described under Impacts 4.6.B(1), 4.6.B(2), 4.6.C and 4.6.D in Section 4.6, future development accommodated by GPA No. 960 would expose sensitive receptors (i.e., people with sensitive respiratory tracts) to pollutant emissions, including from potentially significant short-term (construction) and/or long-term (operational) activities, depending on the location. The degree of impact would depend on the type of operation, distance from sensitive receptors and the level of activity at each site. If a human was located within close enough proximity to a source of pollutants exceeding regulatory standards, for example from a construction site or an industrial operation, such an exposure could result in a significant impact to the human. In addition, as the exact location, timing and level of future development activities arising from GPA No. 960 is unforeseeable, specific impacts to sensitive receptors cannot be quantified. As a result, this EIR cannot guarantee (even with the incorporation of all feasible mitigation measures) that pollutant levels would be able to be reduced to below applicable agency thresholds. Thus, per Impact 4.6.D, impacts associated with exposure of sensitive receptors to air pollutants would be significant and unavoidable.

Sensitive populations include children, the elderly, the acutely ill and the chronically ill, especially those with cardiorespiratory diseases. In terms of land use, sensitive receptors are areas where sensitive populations may be for extended periods of time, resulting in sustained exposure to any pollutants present. As mentioned in Section 4.6.4, localized significance thresholds (LSTs) have been developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction and operation of a project. Data in Section 4.6 indicate that it is possible to adequately mitigate or avoid certain construction emissions (e.g., CO, NO_X, and $PM_{2.5}$). However, however for PM_{10} the construction activities would need to be a minimum of 50 meters from the nearest sensitive receptor in order to be less than significant. For future development sites where this distance cannot be achieved, a significant impact would result.

In addition to criteria pollutants, localized emissions of toxic air contaminants (TAC) are also of concern with respect to sensitive receptors. Sources of TACs include diesel particulate matter from railroads, emissions from the combustion of airplane fuel, benzene emissions in close proximity to gasoline dispensing stations, dry cleaners and film processing services that use perchloroethylene, auto body shops due to various solvents, furniture manufacturers and repair facilities that use methylene chloride and print shops that use various solvents. However, the primary source of TACs within the County of Riverside is from diesel-fueled trucks and other vehicles using the freeways and major roadways throughout Riverside County. Guidance from the California Air Resources Board (CARB) calls for buffer zones to insulate sensitive receptors from TAC sources. This is feasible and effective mitigation where land use patterns allow. However, where such distances are not achievable, residual impacts would remain significant and unavoidable. Because of increased densities proposed for various land uses in Riverside County and the desire for proximity of residential land uses to both transit and commercial centers, it can be assumed that both construction and operation of commercial and industrial sources could be developed relatively close to sensitive receptors, such as residences or schools. For these reasons, the effects of project emissions on sensitive receptors (i.e., certain populations of humans) throughout Riverside County would be significant and unavoidable.

B. Geology and Soils

Like all of Southern California, Riverside County has experienced and will continue to face groundshaking resulting from activity on local and regional faults. As outlined in Impact 4.12.B (Section 4.12.6), future development consistent with GPA No. 960 would result in the potential for adverse effects to humans, including injury or death, resulting from this groundshaking hazard. As outlined in Section 5.5, this impact would be individually insignificant due to regulations prohibiting construction on faults, as well as requiring setbacks and various structural engineering measures. Thus, the risk is largely mitigated for new development by required structural engineering standards that would apply to new development. However, the growth-inducing effects of GPA No. 960 would also mean that more people would be introduced into Riverside County, thus increasing the number of people subject to risks from structures that may not meet the most-current seismic standards. Accordingly, a major earthquake along one of the major faults in Southern California could have the potential to substantially affect humans through injury or even death.

For similar reasons, the project could also result in a substantial adverse effect to people as a result of landslides. As outlined for Impact 4.12.D (in Section 4.12.6), landslides and rockfall can occur throughout Riverside County as a result of seismic activity and other natural processes, as well as resulting from human activity. Future development within Riverside County accommodated by GPA No. 960 would increase the potential for structures and facilities in areas susceptible to landslides or rockfall. Compliance with existing laws and General Plan policies would reduce potential landslide and rockfall impacts for new development to less than significant levels. However, on a cumulative basis, growth would also result in an increase in the number of people living, working and visiting within Riverside County. Where these people would be exposed to unmitigated landslide risks (such as non-conforming structures, structures located in areas of known [mapped] rockfall hazards and people recreating in natural areas prone to rockfall, for example), potentially substantial effects to humans, including injury or death, could occur.

C. Fire Hazards

As outlined for Impact 4.13.H (in Section 4.13.6), areas of high fire hazard exist within unincorporated portions of Riverside County, including rural, mountainous terrain, as well as areas adjacent to, or covered by, natural grasslands or brush. GPA No. 960 would accommodate future development in previously undeveloped areas, including some with high or very-high fire hazards. This would increase both the number of people and amount of property potentially exposed to fire hazards. Additionally, there is the potential for an increase in the occurrence of fires, particularly in urban-wildland interface areas, due to increasing human encroachment. Compliance with existing regulations and General Plan policies would be sufficient to ensure that this impact is less than significant for new development resulting from the project. However, as with the other safety hazards, growth occurring in Riverside County over time would expose humans to indirect fire hazards. In particular, wildfire risks to humans could occur where county growth introduces more people to areas with high wildfire hazard potential, particularly in rural areas and adjacent to natural areas, and in existing structures that may not conform to current fire codes. This indirect impact is an unavoidable cumulative effect of growth leading to an increased number of people in areas of wildfire hazard and increased potential for human-caused wildfires due to increased human encroachment into wildlands.

D. Noise

As outlined under Impact 4.15.A (in Section 4.15.6), future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. In some locations, this would result in the introduction of new noise-sensitive land uses into areas of

existing excess noise or areas in which county growth would eventually lead to excess noise levels. In addition, future development accommodated by GPA No. 960 would contribute incrementally to increased traffic volumes on county roads, resulting in noise increases affecting sensitive land uses along existing and future roads. As a result, new development, particularly residential uses along and adjacent to major transit corridors, could be exposed to noise levels that exceed Riverside County's noise standards. Existing sensitive uses (and the humans occupying them) would also be subject to these higher noise levels. Compliance with existing noise standards, regulatory programs, General Plan policies and existing mitigation measures from EIR No. 441 would reduce the effects of noise on new development to less than significant levels. However, where noise generators would expose existing receptors (residences and other sensitive uses) to excessive noise, impacts on humans would be significant and unavoidable, as mitigation of these incremental and wide-spread noise impacts is infeasible. Thus, in some locations, noise generated as a result of the project (either directly or cumulatively) would result in a substantial adverse effect on humans.

As noted above, the source of these substantial noise effects on humans would be either construction or traffic activities. Operational activities, in particular motor vehicle operations, would result in substantial permanent ambient noise level increases in specific areas. Construction activities would result in substantial temporary ambient noise level increases. These two impacts are delineated under Impacts 4.15.C and 4.15.D, respectively. The excessive permanent noise levels would adversely affect people where such long-term exposure is above the acceptable noise levels established in various County of Riverside and State of California noise standards. The cumulatively substantial and unavoidable temporary noise increases would also affect people where such exposure is above the acceptable noise levels established in various County of Riverside and State of California noise standards. Due to the temporary (i.e., short-term) nature of the impact, the effect on humans would be self-limiting. Nevertheless, however, human effects could be substantial over the short term.

E. Circulation and Traffic

As outlined under Impact 4.18.A (in Section 4.18), future development accommodated by GPA No. 960 would incrementally increase rural, suburban and urban uses in localized areas throughout unincorporated Riverside County. This new development would result in an increase in traffic levels both on existing and newly constructed county roads. In general, new roads and existing road improvements associated with new development are required to provide appropriate pedestrian and bicycle access routes. These routes vary in their level of development depending on the nature of the project triggering their implementation. The General Plan Circulation Element outlines the standards for a variety of pedestrian, equestrian and bicycle lanes. In some cases, new facilities would be introduced in locations isolated from other existing pedestrian/bicycle routes. In other cases, existing routes may be available, but insufficient, intermittent or substandard. When this occurs, the potential exists for safety impacts to humans to result. As outlined in Section 4.18, however, compliance with existing trail standards, General Plan policies and existing mitigation measures from EIR No. 441 would ensure the effects of new development on non-vehicular transportation, and hence humans the using these facilities, would be less than significant.

Section 5.4 Growth Inducement

Pursuant to Section 151 26.2(d) of the State CEQA Guidelines, this EIR includes a discussion of "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Also according to this same regulation, growth-inducing projects include those that would "remove obstacles to population growth." It also notes that, "increases in population may tax [i.e., strain] existing community service facilities, requiring construction of new

facilities that could cause significant environmental effects." And, lastly, it states that, "the characteristics of some projects...may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment."

Accordingly, an analysis was performed to determine if any of the components of the proposed project, GPA No. 960, could foster, either directly or indirectly, economic growth, population growth or the construction of additional housing. Direct growth inducement includes actions that would lead to an increase in the number of homes, jobs, people or economic transactions. Among other things, direct growth inducement may occur through direct development, including encroachment onto isolated or remote lands, diminishment of open space or leapfrog development. Indirect growth inducement can occur through a precedent-setting action or when an impediment to growth is removed. Most commonly, indirect growth is associated with the provision or extension of essential public services. A classic example is the development potential that arises when infrastructure, in particular roadways and potable water services, are extended into new areas. A precedent-setting policy change that removes an obstacle to growth, for example the establishment of a land use overlay that accommodates a set of alternate, more urban land use designations, would also be an example of indirect growth inducement. Lastly, economic expansion can itself be an indirect source of growth inducement by drawing to an area people wishing to take advantage of the additional jobs or housing that result.

A. Growth Assessment Factors

As part of this EIR, the proposed components of GPA No. 960 were assessed for their growth-inducement potential. From the above CEQA information, the following questions were developed. Would the components of the project do any of the following:

1. Foster direct or indirect economic growth.
2. Foster direct or indirect population growth.
3. Result in construction of additional housing.
4. Remove obstacles to population growth.
5. Encourage or facilitate other activities leading to significant environmental effects, including encroachment into isolated or remote areas.
6. Result in population increases that may strain community services or facilities.

These issues can be generally evaluated qualitatively for many of the project's components. For those items with spatial components, however, a further set of specific demographic standards were developed to enable assessment of the relative potential for significant growth inducement for each. A project component would be considered growth inducing if it would do any of the following:

Standard for Fostering Additional Housing: For the purposes of this analysis, a project component was defined as "fostering additional housing" if it would lead to an increased number of dwelling units at build out. As per the procedures and factors in Appendix E-1 of the General Plan, for each area of residential land use designated under GPA No. 960, the theoretical number of dwelling units expected to be accommodated by the site at build out was calculated. The total expected was then compared to the overall total expected within the Area Plan in which the proposal was located. A project component was deemed "significantly" growth-inducing

if it would increase the expected number of dwelling units present by more than the annual growth rate projected for Riverside County by the Riverside County Center for Demographic Research (RCCDR); that is greater than 3% of the Area Plan's total. Development potential resulting in one-tenth of a percent (0.1%) or less were deemed negligible. And, values between 0.1% and 3.0% were deemed growth-inducing, but not significant.

Standard for Fostering Economic Growth: For the purposes of this analysis, this was defined as increasing the square footage or acreage of land uses most closely associated with economic transactions. Specifically, this meant commercial and industrial uses (CR, CT, CO, BP, LI and HI) which would generate sales taxes, business taxes, and other such economic factors. Similarly, agriculture and mining uses are also included in this definition, particularly as they are associated with additional production and/or processing. Thus, a project component was deemed "significantly" growth-inducing if it would increase the amount of commercial, industrial or agricultural uses (within the respective Area Plan) by 3% or more at General Plan build out with the project component, as compared to build out without the component. Development potential resulting in 0.1% or less were deemed negligible, and values between 0.1 and 3.0% were deemed growth-inducing, but not significant.

Standard for Fostering Population Growth: From a demographic stand point, population growth occurs when the number of people born in or moving to an area exceeds the number of people dying in or moving out of an area. Examined at the programmatic General Plan level, however, population growth is assessed relative to two land use-related factors. First, and most simply, the greater the number of homes in an area, the more people that can be expected to live there. The process by which houses are directly correlated to population is outlined in the methods and factors of Appendix E-1 of the General Plan. And, in the practical sense, this metric is captured by the "fostering additional housing" factor outlined above. Secondly, on a programmatic basis the Riverside County General Plan can only address population growth in terms of attracting people to Riverside County. In addition to offering a low cost of living, e.g., through affordable housing, jobs are a key factor in attracting people to an area. Thus, employment-generating land uses (specifically, CR, CT, CO, BP, LI or HI land use designations) were used as a third metric for assessing growth inducement. The amount of employment-related building square footage planned for an area can be used to directly approximate the number of jobs available, as per the methods and factors outlined in Appendix E-1 of the General Plan. Thus, a project component was deemed "significantly" growth-inducing if it would increase jobs within an Area Plan by 3% or more at General Plan build out with the project component, as compared to build out without the component. Changes resulting in an increase in jobs of 0.1% or less were deemed negligible, and increases of 0.1% to 3.0% were deemed growth-inducing, but not significant.

Standard for Encroaching into Isolated or Remote Areas: CEQA mentions this factor as growth inducing when it necessitates a "major extension of infrastructure" into an area. Thus, for the purposes of this analysis, a project component was defined as growth-inducing via encroachment if it would: result in development (residential, commercial, industrial or public facilities) of vacant, generally undisturbed (i.e., not previously developed) land; be located in an area with limited or no vehicular access (i.e., either no roads or only dirt roads on, through or abutting the site); and, occur in an area not served by an existing water agency and without known groundwater availability (i.e., an underlying groundwater basin). If all of these factors were present, without any mitigating factors, the project component was be deemed "significantly" growth inducing. Aerial photos and GIS data (water district boundaries, groundwater basins, etc.) were used in assessing the criteria.

Standards for Removing Obstacles to Population Growth, including Precedent Setting Actions: This category of growth inducement includes several items. First, it addresses policy changes that would result in the removal of an impediment to growth; that is, changes that would accommodate growth where previous regulatory conditions or limitations prevented or hindered it. An example of this would be the changing of a land use designation from Open Space-Conservation, which severely restricts development, to Medium Density Residential, which allows 3-5 homes per acre. A second example would be actions that establish or result in the

provision of an essential public service; e.g., expanding water or sewer service (or district) into an area without it. In some cases, the proposal of new roads in Riverside County's circulation network can also fall into this category. Lastly, actions which would serve to "encourage or facilitate other activities" causing or resulting in significant environmental effects would themselves be deemed growth inducing. An example of this might be construction of a casino in a remote area, which though mitigated for its own effects, could lead to new surrounding development that results in environmental impacts of their own. The significance of these factors as growth-inducing was determined by the degree to which the altered factor was serving to prevent, limit or impede potential development or utilization of an area. See analysis that follows.

Strain Community Services or Facilities: Lastly, an action or activity that results in the use of existing services or facilities to the point that new ones are necessary may be deemed growth inducing. Similarly, an action or activity triggering the need for new services or facilities in an area previously without such would also be found growth inducing. In this case, the impact refers to the effects of such usage on the human beings using them, rather than directly on the physical environment. (The directly-related environmental effects are addressed separately in the respective sections of the EIR. See Section 4.0, in particular Section 4.17 (Public Facilities), for details.) This effect was generally deemed to be significant if, "but for this action," new services or facilities would not be needed in the affected area.

B. Factors Mitigating Growth Inducement

The above standards set clear guides for determining when an impact would be significantly growth inducing. However, it must be remembered that frequently more than one factor is at work for a given parcel of land or policy proposal. Sometimes a combination of factors may serve to offset each other. As an example, a proposed new business park may increase the number of jobs in an area, perhaps even significantly (more than 3% for the overall area). But, if the site was previously slated for new homes, by committing the land to future employment uses instead, the additional population of the area would be reduced. As a result, the number of schools and parks needed to serve those residents would also be correspondingly lessened.

Since GPA No. 960 proposes a wide variety of land use, environmental and policy changes, in order to assess any one project component, it is necessary to examine the component's effect on the larger area. Specifically, this was done by examining the effect of the component on projected build out of the associated Area Plan. Thus, a proposed change that increased the number of jobs on a site by several hundreds or thousands might only represent only an overall increase of 0.5% in employment within the Area Plan. As such, in the programmatic context of the updated General Plan resulting from GPA No. 960, the change would not be considered significantly growth inducing.

In the final analysis, although specific quantitative factors may be associated with a given project component and may, in fact, even be growth-inducing individually, the ultimate determination of whether or not a change would be significantly growth-inducing must also include the various qualitative and regional factors at work. This is particularly true for the proposed changes involving policies that are not land use-related. Accordingly, in the analyses below, an effort was made to present both the quantitative and qualitative factors that were considered in determining the ultimate level of significance for each of the proposed components of GPA No. 960.

C. Analysis of Project Components

Each of the following project components below was analyzed according to the above criteria. The factors considered in making the significance determinations for each of the project components are also addressed. For further details on the specifics proposed for these components, see Section 3.0.

1. Incidental Rural Commercial Policies

This proposal would enable the approval of small-scale commercial uses within the Rural and Rural Community Foundation Components, uses previously not allowed under these Foundations. Thus, this proposal removes an impediment to growth within the Rural and Rural Community Foundations. This proposal would serve to increase the amount of (retail) economic activity within rural areas, as well as provide a corresponding increase in jobs to staff the new uses. However, this increase was deemed less than significant at the countywide level because of the specific conditions included in the proposal to ensure the uses are developed appropriately (including strict limits on location and size of retail development). In addition, the driving factor behind the introduction of these incidental rural uses would be existing demand in under-served areas, nearly the opposite of growth inducement. For all of these reasons, this proposed project component was found to be growth-inducing, but not a significant source of growth within Riverside County.

2. Sphere of Influence Policy

This proposal is generally growth inducing because it removes an impediment to growth by permitting the General Plan to be amended on a quarterly basis, rather than limiting it to the eight-year cycle established pursuant to the Certainty System in the General Plan's Administration Element, for specific types of infrastructure development. This change provides flexibility needed to allow the County of Riverside and affected cities to coordinate development and infrastructure within their spheres of influence. However, because the policy only applies to areas within city spheres of influence and under closely delineated circumstances related to infrastructure needs, this policy proposal was found to be growth-inducing, but not a significant source of growth within Riverside County.

3. Airport Land Use Compatibility

This project component includes revisions to reflect updated Airport Land Use Compatibility Plans (ALUCPs) within or affecting portions of unincorporated Riverside County. In particular, this includes specific changes to General Plan land use designations (LUDs) for areas surrounding the Riverside Municipal, Flabob and Blythe Airports to ensure consistency with the respective ALUCPs. (See Section 4.13 for further details on these three airport areas.) The general text and map changes made to reflect the ALUCPs were deemed to be generally not growth-inducing. The changes merely reflect existing safety and other airport-related conditions on and around the airports. Further, due to issues beyond the scope of this EIR, even with the changes proposed by GPA No. 960, the General Plan would still have land use consistency issues within the Airport Influence Areas for the Jacqueline Cochran Regional Airport (formerly the Desert Resorts Regional Airport), French Valley Airport and Bermuda Dunes Airport. Within these areas, significant impediments to development remain which serve to hinder growth inducement. For the three airports with specific LUD changes, they were analyzed and deemed to have the following growth-inducing effects, as follows.

Blythe Airport: GPA No. 960 includes LUD changes within the vicinity of this airport to further ensure the safety of the area's residents and visitors. In the most general sense, revising land uses to be consistent with the airport's ALUCP serves to remove an impediment to development. Quantitative evaluation of the proposed LUD changes indicate that the result would yield the potential for an additional 130 or so dwelling units through an offsetting of more widespread low- and medium-density housing near the airport with medium-high and rural densities of housing located farther from the airport, as well as a loss of roughly 130 acres of potential Business Park development. Overall, however, this increase in dwelling units represents only a very small proportion (1.4%) of the total units planned for the Palo Verde Valley Area Plan in which the Blythe Airport and its unincorporated surroundings are located. The expected population would increase by a similar small amount. As a

result, though associated with a slight increase in growth, this project component was found not to be significantly growth inducing.

Flabob Airport: Similarly, GPA No. 960 includes LUD changes within the vicinity of this airport to further ensure the safety of the area's residents and visitors. In the most general sense, revising land uses to be consistent with the airport's ALUCP serves to remove an impediment to development. Quantitative evaluation of the proposed LUD changes indicate that overall the number of dwelling units allowed in the region would be greatly reduced (by nearly 900 units). The amount of retail floor space would also be slightly decreased, though the number of jobs would be slightly increased. Overall, however, this slight increase would not significantly affect the Jurupa Area Plan in which the Flabob Airport and its surroundings are located. As a result, this project component was found to have only negligible, insignificant effects on growth.

Riverside Municipal Airport: Lastly, GPA No. 960 also includes LUD changes within the vicinity of this airport. The proposed revisions would remove an impediment to development. Quantitative evaluation of the proposed LUD changes indicate that the overall result would be a decrease in the number of dwelling units allowed in the region. Retail uses and the number of jobs expected in the area would be virtually unchanged. Overall, the changes would not induce growth within the region and this project component was found to have only negligible, insignificant effects on growth.

4. Day Care Facilities

The minor text, policy and procedure changes reflected by this project component would improve the coordination and execution of day care facility planning and review. These changes only clarify existing policies and apply to a specific type of use that occurs only on very small, widely scattered locations across Riverside County. As such, they were found not to have any effect on growth or growth inducement within Riverside County.

5. Open-Space Land Use Designations

This proposal would allow processing of lands into the Open Space Foundation as an entitlement/policy amendment, thus facilitating the preservation of open space dedicated for conservation. It removes an impediment to open space conservation, rather than growth. Thus, this item would not induce growth.

6. Chocolate Mountain Aerial Gunnery Range

This item proposes changes to address land use compatibility, noise and safety issues for the portion of the Navy's Chocolate Mountain Aerial Gunnery Range located within unincorporated Riverside County. As a result, it actually limits development and growth potential. As such, this item would not induce growth.

7. Rural Village Overlays and Study Areas

In the existing General Plan, several rural areas were earmarked for potential urbanization over time via individual "Rural Village" overlays. Or, where the need and location for such urbanization had yet to be determined, Rural Village Study Areas (RVSAs) were created. As part of GPA No. 960, both countywide and area-specific Rural Village policies and plans were evaluated to determine if they remain appropriate as locations for future intensification and whether they provided the necessary implementation guidance. The proposed General Plan policy changes that would apply to all of Riverside County's Rural Village Overlays and Study Areas (i.e.,

proposed Policies LU 34.1-34.6) clarify and refine the existing policies. As such, they would not induce significant growth themselves. In addition to general policy revisions, changes were also proposed for specific Rural Villages, as follows:

Chiriaco Summit: The proposed changes to the existing Chiriaco Summit Rural Village Overlay (RVO) merely clarify existing text and update a map. They do not add or reduce any growth impediments, nor make any changes that would increase the growth potential of the area. For these reasons, it was determined that this project component would not affect or induce growth within Riverside County.

El Cariso Village: As described in Section 3.0, it was determined that a Rural Village Overlay would not be appropriate for El Cariso Village. Thus, GPA No. 960 includes the elimination of the Rural Village Study Area covering the area. As a result, the area would not be subject to potential future development intensification (growth). Rather, the area would merely develop according to the existing General Plan LUDs already established. Hence, it was determined that this project component would control (limit), rather than induce, growth in this region.

Meadowbrook: As part of the General Plan update process, it was determined that this community was suitable for future intensification as it is surrounded by incorporated cities and has the infrastructure capacity to accommodate additional growth. Thus, under GPA No. 960 the existing Rural Village Study Area would be replaced with a full Land Use Overlay (RVLOU) covering roughly 626 acres. Within this overlay, the General Plan would provide policies and mapping accommodating development of alternate, more intense land uses through entitlement. Because the new RVLUO would provide an alternative land use development scenario for this area, it serves to remove a regulatory impediment to growth. Further, the higher intensity uses allowed by the Overlay would foster both economic and population growth in the area, a roughly 9% increase in the Elsinore Area Plan's population and housing, as well as 14% increase in employment and revenue-generating uses (i.e., commercial, industrial, etc.). Given the proposed size of the Rural Village Overlay, this project component would result in significant growth inducement within the Elsinore Area Plan.

Good Hope: The existing Good Hope Rural Village Study Area is located along State Highway 74 and encompasses a variety of existing commercial and light industrial uses. Review also determined that additional urbanization would be appropriate for this community, given the surrounding growth occurring. Thus, GPA No. 960 proposes to create the Good Hope Rural Village Land Use Overlay on a total of 217 acres to provide an alternative land use development scenario for this area. The Overlay would allow higher intensity uses than those of the underlying LUDs, thereby removing an impediment to future growth in the area. Within the Mead Area Plan in which it is located, the Good Hope RVO would result in an increase of roughly 3% more homes and people, and 4% more jobs and economic opportunities. This change is a small, but significant, source of growth inducement for the region.

Aguanga: As part of the General Plan update effort, the existing Aguanga Rural Village Overlay Study Area was reviewed, and it was determined that due to limited access and infrastructure capacity, intensification of the area via Rural Village Overlay was inappropriate at this time. Thus, GPA No. 960 proposes to eliminate this Study Area, allowing it to instead continue to grow according to the underlying LUDs depicted in the General Plan. The removal of this RVSA serves to reduce the future development potential of the area. It would limit, rather than induce, growth in this region.

Anza Valley: Similarly, after review of the existing 1,300-acre Anza Rural Village Overlay, it was determined that a formalized Rural Village Land Use Overlay was not appropriate for this region at this time. Thus, GPA No. 960 proposes to eliminate the existing Rural Village Overlay, allowing the community to instead continue growing according to the underlying LUDs depicted in the General Plan. In addition, a larger area (approximately 71,000

acres) along State Highway 341 was placed within a Policy Area associated with the Anza Valley Municipal Advisory Committee's (MAC) "Goals and Vision" statement. These two steps would limit the area's growth potential, deemed appropriate due to the limited infrastructure capacity, particularly its lack of assured water supplies, and would also ensure coordination of any future development that does occur. For these reasons, this project component would not induce significant growth in the area.

Sky Valley: After review, it was determined that no change was necessary for this Rural Village. Thus, although originally scheduled for updating, GPA No. 960 does not include any changes to the Sky Valley Rural Village Overlay and would not induce growth in this area.

8. Lake Elsinore Environs Policy Area (Lakeland Village)

The 234-acre existing Lake Elsinore Environs Policy Area was reviewed and revised to establish updated land use intensities to reflect revised flood mapping for the Lakeland Village community surrounding Lake Elsinore. Before revision, many properties in the village had "split" LUDs (i.e., two on one parcel or block of land) due to the 100-year flood hazard zone. As part of GPA No. 960, these parcels' LUDs were revised to reflect the changes made to the 100-year flood zone surrounding Lake Elsinore by the U.S. Army Corps of Engineers and the Riverside County Flood Control and Water Conservation District. The proposed changes to roughly 300 acres in and around the Policy Area would remove impediments to development through changes to commercial-retail, residential and open space designations, and, in particular, the removal of split designations (two LUDs on a single parcel). The LUD changes would only slightly increase the number of homes and residents expected in the area. It would also slightly decrease the number of jobs and square footage of economic uses associated with the area. Thus, although this component would result in the removal of a development impediment within the community, the overall potential for it to induce growth would be negligible and insignificant.

9. Northeast Business Park Overlay

The proposed roughly 260-acre Northeast Business Park Overlay would provide an alternative land use scenario for this area, allowing the predominantly agricultural dairy (AG) existing uses to develop as a future business park (BP) if or when urbanization pressure makes such development appropriate. Because this project component would allow an urbanized use (BP) to develop where not previously planned, this item is growth inducing. It would foster direct economic growth in the region. Relative to the Lakeview/Nuevo Area Plan in which it is located, this project component would result in increases of roughly 26% and 16%, respectively, in jobs and commercial/industrial square footage. As a result, this project component would result in significant growth inducement for the region.

10. San Jacinto Agriculture/Potential Development Special Study Area

As part of the General Plan update, it was determined that the nearly 7,700-acre San Jacinto Agriculture/Potential Development Special Study Area was not ripe for development intensification. Accordingly, GPA No. 960 proposes to eliminate the Study Area and let the region remain agricultural (AG). The historically agricultural region would not be subject to a potentially growth-inducing overlay. As such, the project component would serve to limit, rather than induce, potential future growth in the region.

11. Conservation Land Mapping Changes

As part of GPA No. 960, nearly 15,000 acres previously acquired for permanent conservation as habitat under the Western Riverside County Multi-Species Habitat Conservation Plan (WRC-MSHCP) would be designated as Open Space-Conservation Habitat (OS-CH). As a result, future growth potential on these lands would be severely restricted. Thus, this project component would reduce, rather than induce, growth potential within Riverside County.

12. Categorical County-Initiated LUD Changes

As outlined in Section 3.0, GPA No. 960 includes a variety of proposed parcel-specific LUD changes. These changes were grouped according to eight basic criteria. The potential for growth inducement for each of these eight categories are discussed individually, below.

Criteria 1 - Technical Mapping Errors, Including Rural-Mountainous Designations: This category addresses parcels that were erroneously designated as Rural Mountainous (RM), even though they do not meet the steep slope requirements. It also includes mechanical mapping errors. It proposes to affect roughly 80 acres of Riverside County. The reassignment of LUDs from Rural-Mountainous (RM), which limits development due to steep slopes, to other, less restrictive LUDs would technically serve to induce growth. However, analysis of the parcels involved indicates the resultant increase in development potential resulting from the proposed changes would be small. Thus, these changes would not result in significant inducement of growth. It would encroach only minimally into isolated or remote areas.

Criteria 2 - Open Space-Conservation Habitat Designation Changes: This category corrects the LUDs for privately owned lands erroneously designated as "Open Space - Conservation Habitat," (OS-CH), which is normally used to designate publicly held conservation lands. It affects a total of approximately 3,260 acres of Riverside County. See the summary presented in Table 5.2-A for the land use changes, locations and acreages associated with these changes. As with the first category, the reassignment of LUDs from OS-CH, which allows virtually no development to protect biological values, to other, less restrictive LUDs would serve to induce growth. However, analysis of the parcels involved indicates that the resultant increase in development potential resulting from the changes would be small on an incremental parcel basis. Correspondingly, these individual parcel changes alone would not result in significant growth inducement.

However, some of the parcels at issue are located on vacant lands within intact natural habitat and with no existing or planned infrastructure availability nearby, particularly roads, electricity and water supplies. As such, the increased development potentials proposed for these parcels represent a substantial encroachment into isolated or remote lands, because they would necessitate the concomitant extension of roads, utilities and other infrastructure improvements into these open space areas as well. Specifically, sites C2-3b, C2-6 and C2-7b (roughly 232 acres total) are located on undisturbed parcels of native vegetation and surrounded by OS-CH lands on all four sides. Sites C2-1b, C2-4, C2-5, C2-8b, C2-13b, C2-17b, C2-20, C2-21, C2-22a and C2-23b are located on vacant, vegetated lands totaling 2,180 acres and have lands designated OS-CH bordering at least two sides. Lastly, sites C2-15 and C2-23 totaling 254 acres would also extend development into vacant lands. These sites are all located in the far eastern desert region of Riverside County, outside of any existing Area Plan. Statistically, when evaluated against the total area, these small growth-inducing changes would be less than significant relative to overall growth of the far eastern desert region. However, because they would permit development of nearly 3,800 acres of vacant natural lands (predominantly desert scrub habitat) located near, adjacent to, or in some cases even in the middle of, lands designated OS-CH being maintained for their natural conservation functions and values,

the extension of roads, utilities or homes into these areas would represent significant growth-inducing effects, as well as significant irreversible changes to the natural environment.

Criteria 3 - Public Facilities Designation Changes: This category corrects the LUDs for privately owned lands erroneously designated as "Public Facilities" (PF), which normally designates lands slated for public benefit uses. It affects a total of roughly 190 acres of Riverside County. In most of the cases, the proposed new LUDs would have virtually no effect (adding only a handful of homes, for example). Two sites have growth-inducing changes that would lead to upwards of 50 homes and nearly 300 homes. Another site would accommodate up to 20 acres of Light Industrial development. For these three locations, however, analysis of the parcels involved relative to their regional surroundings and, in particular, their Area Plans indicate that their resultant development potential increases would be small. Further, none of these parcels represent significant encroachments into remote or isolated areas. As a result, these changes would not result in significant growth inducement. Thus, the changes proposed under Criteria 3 were collectively found to not be significantly growth inducing within Riverside County.

Criteria 4 - Open Space-Conservation Designation Changes: This category addresses lands that were originally designated as "Open Space-Conservation" (OS-C), but have been determined to be unsuitable for such due to existing development, location or other constraints. This category affects a total of 28 acres of Riverside County. In most of the cases, the proposed new LUDs would have virtually no effect (adding less than a dozen homes, for example). For this reason, the changes proposed under Criteria 4 would not result in significant inducement of growth.

Criteria 5 - Open Space-Recreation Designation Changes: This category addresses a single 38-acre area inappropriately designated as "Open Space-Recreation" (OS-R). It would be designated as Medium-Density Residential (MDR) under GPA No. 960. This change would be inherently growth-inducing, as it would accommodate roughly 75 to 190 dwelling units on the site. Its location, however, on the eastern side of the Coachella Valley, is on lands clearly urbanizing to similar uses. When compared to the overall development expected within the Western Coachella Valley Area Plan in which it is located, the growth inducement is found not to be significant.

Criteria 6 - Appropriate Designation for Public Use Lands: Under this category, roughly 800 acres of public lands erroneously designated for private development uses, instead of Public Facilities (PF), would be corrected. These changes include, in particular, PF designations applied to lands buffering landfills, Riverside County facilities (e.g., the Hub Jail), reservoirs (e.g., Lake Skinner), canals and major roads. Item C6-4, in particular, alters LUDs to accommodate the revised 100-year floodplain resulting from changes made to the Prado Basin and its dams. As such, the Criteria 6 changes generally denote new limits on development, rather than new growth potential. For this reason, the changes proposed under Criteria 6 would not result in significant inducement of growth.

Criteria 7 - Designations Appropriate for Existing Lot Sizes: This category proposed LUD changes to roughly 11 acres to accommodate estate-density residential uses in an area surrounded by similar existing development. As such, it represents an orderly extension of existing development. And, though technically an inducement of growth, compared to the existing AG designation, it would only increase the number of homes in the Southwest Area Plan by roughly five units. As such, this minute change does not represent a source of significant growth inducement in the area.

Criteria 8 - Other Land Use Changes: This category addresses various LUD changes identified over time that do not fit into any of the other categories above. Four areas would be moved from residential to commercial or industrial uses and three would be changed in the reverse. In total, 250,000 square feet of additional commercial

and industrial uses would be added. Likewise, three areas would be re-assigned to residential LUDs with lower densities (totaling 710 acres with 340 potential dwelling units – a decrease of over 750 units) and five areas would go to LUDs of increased residential densities (a total of 1,105 acres accommodating an additional 162 dwelling units). The LUD changes increasing housing development potential or business use intensities would inherently increase growth potential. However, analysis of the overall effect of the changes proposed under Criteria 8 with respect to the affected Area Plans in which they are located, found that these changes would not be significantly growth inducing. Three of the proposed changes would have the potential to induce growth, but not at significant levels (0.2% to roughly 2%).

13. Fish Farms

This project component represents roughly 860 acres where the existing LUD would be changed to agriculture (AG) to reflect existing or planned aquaculture (fish farming) and related activities. Though agricultural uses would foster economic growth and jobs, the low levels of development associated with such activities would severely limit their growth potential. Further, some of the acreage to be shifted to AG was previously designated for residential uses. As such, the change would represent the loss of additional future housing development. Lastly, however, the proposed changes were evaluated at the regional level against the build out potential for the Eastern Coachella Valley Area Plan in which they are located. It was found that the proposed changes would affect less than 1% of the area and have only a small effect on the area's growth. For these reasons, these proposed project components were not found to be significantly growth inducing.

14. General Plan Circulation Network Changes

As part of the overall General Plan update process, the County Transportation Department examined the existing Countywide Planned Circulation System to determine if regional and local transportation systems would be able to accommodate the traffic demands of the planned future intensities resulting upon General Plan build out, as well as those associated with GPA No. 960. As a result, GPA No. 960 includes a number of updates to proposed roadway alignments and intersection locations, as well as functional classifications (widths, number of lanes, level of service targets, etc.), where needed throughout unincorporated Riverside County.

Because of the essential nature of vehicular access to and across sites, the introduction of new roadways is quintessentially growth inducing. By facilitating access, new roads foster economic and population growth, open up areas for construction of additional housing, particularly in isolated or remote regions, and remove an impediment to growth by establishing an essential public facility. Often individual private development projects propose roads specifically to serve the proposed land uses. However, in the case of GPA No. 960, a number of roadway changes are being proposed of varying types and for locations across Riverside County. As such, they represent the further extension of roadways necessary to the serve the growing county and are considered collectively growth producing. Thus, because of the extent and essential nature of the proposed revisions to the Riverside County Circulation Network, these GPA No. 960 changes would be considered to be significantly growth inducing.

15. Traffic Level of Service (LOS) Standard Changes

As shown in Table 4.18-B in Section 4.18 (Transportation and Circulation), the County Transportation Department proposes adjustments to the volume capacities for certain types of roadways, mainly arterial and larger. The proposed level of service (LOS) changes do not in any way alter the *amount* of traffic *generated* that would be carried by affected roadways, as traffic is primarily a function of population (travelers) and geography

(that is, the destinations or "trip ends" determined by the locations of various land uses). However, the changed standards mean that in some cases roadway improvements (i.e., expanding the capacity of existing roadways and/or adding new roadways or capacity) would not be triggered until higher traffic volumes are reached. The exception is "Mountain Arterial," which would have a lowered LOS and thus trigger improvements sooner than present standards). While future projects would still be required to pay into the TUMF program for mitigating regional traffic impacts, the requirement for project-specific roadway improvements would be somewhat eased. This change (that is, delaying the triggering of roadway, signal and related infrastructure improvements) could ultimately have the effect of the removal of a barrier to growth by decreasing the time and expense of transportation-related improvements associated with implementing a proposed project. As a benefit, by removing this obstacle to growth, this change could result in the indirect fostering of economic growth, population growth and indirectly in the construction of additional housing. In terms of environmental impacts, however, this component of the project would be significantly growth inducing.

16. Non-Motorized Transportation Plan Changes

Within the Circulation Element, GPA No. 960 also includes updates to both the alignments proposed for the Riverside County Non-Motorized Transportation Plan, as mapped in Figure C-7 of the General Plan (as well as detailed in the individual Area Plans), and to the standards for trail alignments, types, usage and functional classifications, and related implementation policies. However, because trails generally serve to provide either pedestrian connectivity and/or recreational opportunities, they are not inherently growth inducing. Rather, they most often tend to be developed in response to an area's growth, rather than a driver of such growth. For these reasons, the proposed changes to the Riverside County Non-Motorized Transportation Plan and other trails-related policies would not result in significant inducement of growth.

17. Multipurpose Open Space Element Changes

The Multipurpose Open Space Element was examined to ensure that countywide policies addressing natural resources (their regulation, use and conservation) remain appropriate and adequate for current conditions and the planned future of Riverside County. Thus, GPA No. 960 includes a variety of new and revised policies to strengthen resource protection, energy conservation and infrastructure coordination. A variety of resource maps were also updated addressing the distribution of known resources to better coordinate their conservation and protection, where appropriate. Review of the specific policies and map revisions proposed found none of them met any of the qualitative or quantitative criteria for growth inducement outlined earlier in this section. Thus, the changes proposed to this Element under GPA No. 960 would not result in any significant inducement of growth within Riverside County.

18. Safety Element Changes

Similarly, the General Plan's Safety Element was also examined to ensure that countywide policies addressing safety hazards, risks and preparedness remain appropriate and adequate for current conditions and the planned future of Riverside County. Thus, GPA No. 960 proposes several new and revised policies to reduce hazards and improve safety, such as for updated geological, seismic and fire-hazard planning. The accompanying maps were similarly updated to reflect current information. In all, a number of safety maps were updated addressing various safety hazards and zones to better coordinate the protection of people and property within Riverside County. These items address safety hazards and protection, and establish limits on growth (due to the mapped hazards) to ensure public safety. Review of the specific policies and map revisions proposed found that none met any of the qualitative or quantitative criteria for growth inducement outlined earlier in this section. Thus, the changes

proposed to this Element under GPA No. 960 would not result in any significant inducement of growth within Riverside County.

19. Air Quality Element Changes

The Air Quality Element was also updated under GPA No. 960. Changes proposed address regulatory updates and the provision of new information. In particular, additions are proposed to address recent California laws and policies related to greenhouse gas (GHG) emission reduction, including GHG reduction targets based on a countywide carbon inventory, as well as goals and policies were developed to achieve these reduction targets in coordination with the Climate Action Plan (CAP) that has also been developed for Riverside County. The CAP includes a program for enacting Implementation Measures to be used to ensure that future development within unincorporated Riverside County achieves Riverside County's greenhouse gas reduction goals. These actions ensure the County of Riverside is consistent with the State of California's overall GHG reduction plans developed to implement AB 32, California's Global Warming Solutions Act of 2006. See Section 4.7 of this EIR for more information.

Because of the need to prevent future GHG emissions, the proposed changes include a number of items directed at reducing emissions (of both GHGs and, incidentally, criteria pollutants) associated with new development. That is, they assume future development will occur and propose ways to mitigate the effects of said new development on air quality and GHGs accordingly. In essence, this means they react to future development proposals rather than inducing or promoting them directly. For this reason, the GPA No. 960 changes proposed for the General Plan's Air Quality Element would not serve to significantly induce growth. For the same reasons, the proposed Riverside County Climate Action Plan would likewise not induce significant growth within Riverside County.

20. Administration Element Changes

The proposed update to the Administration Element of the General Plan was examined and updates are included in GPA No. 960 where needed to ensure its policies and programs continue to reflect current planning practices and provide a clear and concise set of directions for the implementation of the General Plan. Because of the administrative nature of these proposed changes, they tend to either have no effect on growth. In the case of the proposed change to allow more frequent processing of lands *into* the OS-C designation where flood control issues arise, the change would impede future growth, rather than foster it. Thus, collectively, none of the changes proposed to this Element under GPA No. 960 would serve to induce significant growth within Riverside County.

21. Updates to General Plan Appendices

Several of the technical appendices to the General Plan were updated, revised or reissued as necessary to ensure that the General Plan continues to reflect current conditions and growth forecasts for Riverside County. These appendices were developed as part of GPA No. 960 to ensure up-to-date data is provided to support the policy and program directives in the General Plan and to update planning, land use, socioeconomic, potential environmental constraints (such as ambient noise or air quality levels) and other projections and analyses. As such, these appendices merely represent informational items used to inform or elaborate upon the rest of the General Plan. Thus, none of the proposed appendix changes would have the potential to induce growth within Riverside County.

D. Conclusions on Growth Inducement

Based on the above analysis, many of the proposed changes associated with GPA No. 960 would either limit or impede growth (for example, by placing further restrictions on floodplains or wildfire hazard areas) or would induce insignificant amounts of growth (less than 0.1% of the overall growth by Area Plan). The provision of small, scattered incidental rural-commercial retail uses in under-served regions that is expected to result from the proposed incidental rural-commercial policy proposal is an example of this kind of limited, insignificant growth. Only several key specific types of future development actions or projects resulting from GPA No. 960 would, in fact, have the potential to induce significant growth within Riverside County.

As analyzed above, these include three proposals that would foster economic, population and housing growth within a portion of Riverside County: the proposed Meadowbrook and Good Hope Rural Village Land Use Overlays, and the proposed Northeast Business Park Overlay. Changes to sites in the Criteria 2 LUD category would also result in significant growth-inducing effects due to their encroachment into remote or isolated areas. In addition, the proposed changes to the countywide circulation network also have the potential to induce significant growth because of the essential nature of roads in providing access to remote or isolated regions, and in removing impediments to growth by establishing an essential public facility. And, lastly, the proposed circulation LOS changes would be directly and indirectly significantly growth-inducing due to the removal of barriers to growth resulting from decreased the time and expense of transportation-related improvements associated with implementing a proposed project.

This finding of significant growth-inducing effects associated with GPA No. 960 is not unexpected, however, given the programmatic nature of the project, its countywide scope and the nearly 50-year build out period involved. The nature and purpose of a General Plan is inherently growth inducing, in that it represents a plan for ensuring the orderly growth and development of land within unincorporated Riverside County over time. As such, the myriad policies, plans, procedures and standards outlined throughout the Riverside County General Plan, as updated pursuant to GPA No. 960, as well as this EIR and the existing EIR No. 441, certified for the 2003 RCIP General Plan, collectively serve to mitigate and reduce, where possible, the severity of the environmental effects associated with growth and build out of Riverside County. With continued diligence in implementing the General Plan, long-term growth within the County of Riverside can continue while environmental effects are kept to the minimum feasible and the unique biological and other important natural resources of Riverside County are protected for the health and enjoyment of both existing residents and future generations to come.

Section 5.5 Cumulative Impacts

A. Introduction

Section 15130 of the State CEQA Guidelines requires that an EIR include a discussion of the potential cumulative impacts of a proposed project. Cumulative impacts can result from individually minor, but collectively significant, impacts occurring over a period of time. Specifically, cumulative impacts are defined as two or more individual effects that, when considered together, are substantial or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of development when added to other closely related past, present and reasonably foreseeable or probable future developments. The State CEQA Guidelines, CCR Section 15130(b)(1), outlines two ways in which analysis of a project's cumulative impacts may be approached:

The following elements are necessary to an adequate discussion of significant cumulative impacts. Either:

(A) [List Method]: A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) [Regional Growth Projections Method]: A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

Thus, to quantify future development trends for the Riverside County General Plan, current General Plan Amendment (GPA) applications in process with the Riverside County Planning Department were used to represent reasonably foreseeable future projects. In general, GPA cases are often broad enough to capture large planning projects in unincorporated Riverside County, including large specific plans, but narrow enough to allow for cumulative analysis. Also, since all of the GPAs submitted to the County of Riverside must use the same basic land use assumptions (i.e., those of the current General Plan), the GPAs can be quantified and combined in a manner that permits appropriate comparisons. To study the relative cumulative effects of the project, GPA No. 960, in relation to various General Plan build out scenarios, a data set was created of all proposed GPA applications submitted to Riverside County since the issuance of the last collective General Plan in 2003, a total of ~~roughly 140~~ *126* ~~cases, which are described in more detail below~~. *(Of the GPAs included on the list, 18 were omitted due to various actions that had rendered them not applicable, e.g., cases that had been denied by the County, withdrawn or abandoned by the project applicant or vacated by judicial action. A handful of GPAs with no spatial component, e.g., changes to text, such as policy language, only were also omitted since they had no material effect on existing or proposed Land Use Designations or other analyzable spatial elements.)*

The resultant data set was used to assess the reasonably foreseeable future cumulative effects expected to occur within Riverside County as the General Plan guides development over time. These include spatial (land-based) impacts, in which environmental impacts are site-dependent (i.e., based on the resources present at a given location) and socioeconomic effects that arise from demand on resources caused by an increase in population, homes, jobs or other factors. The theoretical (hypothetical) demographic data (jobs, population and housing) used here were derived from the land use capacities indicated by the General Plan land use designations (LUDs) proposed for the various GPAs. Regional data developed by the Southern California Association of Governments (SCAG), which encompasses Riverside County in addition to five other surrounding counties, as well as the hundreds of cities within these counties, was also used to examine effects outside Riverside County boundaries. This particularly applies to population-driven regional impacts that extend beyond Riverside County, traffic in particular.

B. Cumulative Analysis – Methods and Results

To study the cumulative impacts expected for GPA No. 960, a data set was created of all proposed GPA applications submitted to Riverside County since the issuance of the last collective General Plan (i.e., the RCIP General Plan document, which was adopted by the County Board of Supervisors on October 3, 2003) through the end of 2009. In total, this amounted to *115* ~~138~~ GPAs~~, which are described in more detail below~~. This total also includes *11* ~~16~~ GPAs that were approved in 2009 after the initial baseline was set for this EIR, as they had not been incorporated into the "Existing General Plan" document, which only includes GPAs adopted through

the end of 2008. The cases included in this cumulative data set ("CULM" herein) are listed in Table 5.5-A (General Plan Amendments Included in Cumulative Build Out Scenario). See Appendix EIR-*11* ~~10~~ for additional details on the individual GPA cases that contribute.

The resultant cumulative data set, with GPA No. 960 added, was compared to a base plan consisting of the current (*2009* ~~2008~~) General Plan as well as to the existing conditions within Riverside County. By listing all of the GPAs currently in process as the "probable future projects" for cumulative impact analysis, that is, using the "List Method" mentioned above, the incremental contribution of the proposed project, GPA No. 960, *can* ~~could~~ be examined. In certain cases, in order to quantify and compare cumulative project impacts, the "Regional Growth Projections Method" was used instead, for example, for traffic and circulation impacts.

For the cumulative analysis presented here, it should be noted that this EIR does not evaluate the site-specific impacts of the individual GPAs listed. The *104* ~~122~~ GPA applications (i.e., those not yet approved or denied by the Riverside County Board of Supervisors; the other *11* ~~16~~ GPAs in the set are already adopted) must each undergo appropriate CEQA analysis and review in their own right, including any and all separate environmental studies deemed necessary on a case-by-case basis.

In addition, it should also be noted that growth in neighboring counties and cities as a result of build out of the overall cumulative scenario would likely cause secondary cumulative impacts in the County of Riverside. This effect is discussed herein to the extent the proposed project, GPA No. 960, contributes to such impacts, but it is not studied in detail due to geographical and technical limitations. This problem arises because each individual city and county makes a separate set of assumptions, growth predictions and build out projections for their own individual general plans. The widely varying methods and time horizons for build out of these jurisdictions lead to highly subjective results that make an appropriate "apples-to-apples" comparison infeasible.

Table 5.5-A: General Plan Amendments Included in Cumulative Build Out Scenario

Case & Type		Case & Type		Case & Type		Case & Type		Case & Type	
GPA *662* ~~621~~	SP	GPA *870* ~~874~~	EP	GPA 943	F	GPA 996	F	~~GPA 1047*~~	~~EP~~
GPA 686	SP	GPA *874* ~~876*~~	EP	GPA 945	F	GPA 997	F	~~GPA 1048*~~	~~EP~~
~~GPA 692~~	~~SP~~	GPA 879	SP	GPA 948	F	GPA 998	F	GPA 1050	EP
GPA *727* ~~706~~	*SP* ~~EP~~	~~GPA 878*~~	~~EP~~	GPA 949	F	GPA 1000	EP	~~GPA 1051*~~	~~AG~~
GPA 732	EP	~~GPA 881*~~	~~SP~~	GPA 950	F	GPA 1001	F	GPA 1052	F
GPA 736	EP	GPA *888* ~~883~~*	*F* ~~EP~~	GPA 951	SP	GPA 1005	F	~~GPA 1053*~~	~~EP~~
GPA 743	SP	GPA *895* ~~888~~	F	GPA 954	F	GPA 1006	F	GPA 1055	EP
GPA 751	EP	GPA 896	F	GPA 955	F	GPA 1007	F	~~GPA 1056*~~	~~EP~~
GPA 753	EP	GPA *897* ~~900~~	*F* ~~AG~~	GPA 958	F	GPA 1008	F	GPA 1058	EP
GPA 763	AG	GPA 903	F	GPA 959	F	GPA 1009	SP	~~GPA 1061*~~	~~SP~~
~~GPA 774*~~	~~EP~~	~~GPA 905*~~	~~EP~~	GPA 961	AG	GPA 1010	F	GPA 1063	EP
GPA 778	EP	GPA 907	SP	GPA 962	F	*GPA 1013*	*F*	GPA 1064	EP
GPA 780	EP	GPA 909	F	GPA 963	F	*GPA 1014*	*F*	GPA 1065	F
GPA 781	EP	GPA 910	SP	GPA 964	F	GPA 1015	F	GPA 1066	EP
~~GPA 783~~	~~EP~~	GPA 911	F	GPA 965	F	GPA 1016	F	GPA 1067	AG
~~GPA 784*~~	~~AG~~	GPA 914	F	GPA 968	F	GPA 1022	F	GPA 1068	SP
~~GPA 791~~	~~EP~~	GPA 915	F	GPA 973	F	GPA 1025	EP	GPA 1070	EP
GPA 796	EP	GPA 916	F	GPA 974	F	GPA 1028	F	~~GPA 1071~~	~~AG~~
~~GPA 803~~	~~EP~~	GPA 917	F	GPA 975	F	GPA 1030	F	~~GPA 1073*~~	~~EP~~
GPA *815* ~~814~~	SP	GPA 920	F	GPA 976	F	GPA 1032	F	~~GPA 1074~~	~~EP~~
GPA 816	EP	GPA 921	F	GPA 977	F	GPA 1033	SP	~~GPA 1076~~	~~AG~~
GPA 818	EP	GPA 925	F	GPA 978	SP	GPA 1035	F	~~GPA 1078~~	~~EP~~
~~GPA 826*~~	~~SP~~	GPA 926	F	GPA 980	AG	GPA 1036	F	GPA 1079	SP
GPA 835	SP	GPA 927	F	GPA 983	F	GPA 1037	F	GPA 1081	EP
GPA 841	SP	GPA 928	F	GPA 985	SP	GPA 1038	F	GPA 1082	T

Case & Type		Case & Type		Case & Type		Case & Type		Case & Type	
GPA *846* ~~847~~	*SP* ~~T~~	GPA 934	F	GPA 988	F	GPA 1039	F	~~GPA 1086~~	~~EP~~
~~GPA 865~~	~~AG~~	GPA 935	F	GPA 991	F	~~GPA 1042~~	~~F~~	~~GPA 1087~~	~~EP~~
GPA *847* ~~870~~	*T* ~~EP~~	GPA 936	F	GPA 995	F	GPA 1043	EP	GPA 1092	EP

Footnotes:

1. The Administrative Element of the General Plan establishes the Certainty System with four "amendment categories" as listed in Footnote 2. See pages A-11 through A-13 of the General Plan for specifics on each. GPAs ~~marked with an asterisk ("*") are those GPAs~~ adopted as of the end of 2009 *are not included on this list because they were instead included as part of the baseline General Plan ("CURRENT" scenario)*. GPA sub-cases (substantial conformances, etc.) *are also* not shown.
2. Key to types of General Plan Amendment (more than one category may apply):
   T = Technical Amendment F = Foundation Amendment
   EP = Entitlement/Policy Amendment AG = Agriculture Foundation Amendment
3. "SP" denotes GPAs associated with an existing or proposed Specific Plan. Pursuant to General Plan Policy LU 1.11, Certainty System rules apply slightly differently. SP-related GPAs are typically E/P types, but can also include any of the other three categories.
4. All "type" indicators listed above are descriptive, based on LUD changes appearing in the CULM data set and are listed here only to provide an approximate categorization of the GPA. They do not represent any official opinion, commitment or judgment on the part of the County of Riverside with respect to any individual GPAs or its merits. This list has no bearing on any existing or future processing or review of the individual GPAs.

Source: Riverside County Planning Department, data assembled *December 2014* ~~February 2013~~.

Therefore, rather than use the numerous disparate methods and factors of each jurisdiction, the analysis prepared by the Riverside County Center for Demographic Research (RCCDR), in consultation with the Riverside County Planning Department, applied a single set of uniform assumptions to all of the incorporated cities within Riverside County. The growth assumptions applied to the incorporated cities used regional data from SCAG. As discussed in Section 5.6 (Regional Consistency), SCAG is the regional planning entity responsible for working with the numerous cities, counties and other governmental agencies within Southern California to ensure sound, coordinated growth continues for the region. The end result of this effort was the development of a single, unified cumulative data set that enabled the examination of the project's incremental contribution to the various overall cumulative environmental impacts associated with growth in Riverside County.

1. Terms and Assumptions

For the cumulative analyses that follow, the following labeling conventions and assumptions apply:

- Existing, i.e., baseline, conditions within Riverside County are those present as of the date of this EIR's NOP or other date(s) as indicated in the applicable EIR section addressing the resource (i.e., Sections 4.2 through 4.19). These conditions are typically labeled "EXIST."

- The terms "existing General Plan" or "current General Plan" are used to refer to the current (2008) General Plan. *For this analysis, "current" means it incorporates all GPAs adopted through the end of 2009.* "CURR GP," "CURR scenario," etc., refer to the future build out of the current (*through 2009* ~~2008~~) General Plan.

- The term "updated General Plan" (or "GPU") is used to refer to the current (*2009* ~~2008~~) General Plan as it would exist updated pursuant to the proposed project, GPA No. 960, if adopted. Also abbreviated "GPU/960" since it encompasses the revisions proposed by the project.

- The final "cumulative data set" discussed throughout this section *typically encompasses both* ~~consists of a combination of~~ GPA No. 960 and the future GPAs. That is, it is the existing (*2009* ~~2008~~) General Plan with the changes proposed by GPA No. 960, as well as the *115* ~~122~~ individual GPAs included in the "future GPAs," *as well as* ~~plus~~ the *11* ~~16 additional~~ adopted GPAs. It is this overall cumulative General Plan that is referred to as the "cumulative scenario," *"CULM,"* "CULM build out," etc.

- When the proposed project, GPA No. 960, or "project build out" is mentioned, for the purposes of this section only, it is assumed to referred to the build out of the existing (*2009* ~~2008~~) General Plan as

amended pursuant to GPA No. 960. Thus, the labels "GPU," "GPU960" or "GPA 960 scenario" refer to the entire General Plan, not merely the individual components of the plan that are proposed for change under GPA No. 960. ~~Again, it should be noted~~ *Note* that this distinction applies only in Section 5.5.

- Each of the General Plan scenarios assume full (100%) build out of the land uses mapped, even if such development would be historically or economically unlikely or otherwise constrained from ever actually occurring *(for example, due to MSHCP conservation requirements, earthquake fault setback requirements, etc.)*. This is done to ensure the "worst case" is analyzed and appropriate mitigation identified where needed.

- The environmental analyses that follow include conclusions as to the potential for cumulative impacts for the project, GPA No. 960, and also for the CULM scenario. Although oft-times included in the cumulative effects presented, results for the existing (CURR) General Plan are generally not specifically addressed since they were already covered by EIR No. 441.

- A "build out scenario" denotes the level of development that would exist should all potential development be realized as planned for in the applicable document (General Plan, GPA proposal, policy area, etc.) indicated. The assumptions used in modeling each of the build out scenarios used herein are generally as directed in General Plan Appendix E-1, unless noted otherwise. See Section 4.1 for additional details on build out modeling.

The collection of "future GPAs" referenced in this section refer to the *115* ~~122~~ property owner-initiated GPA applications submitted through *the end of* 2009 and in process *(or approved)* with the County of Riverside Planning Department. The only GPAs from this timeframe not included in the data set are those that have been denied by the hearing body, formally withdrawn*,* ~~or~~ abandoned by the applicant *or vacated by judicial decision* ~~are the only GPAs omitted~~. GPAs that were "declined to initiate" during GPIP (General Plan Initiation Process) review were also omitted. Inactive (but not formally abandoned) GPAs *are still* ~~were~~ included in the *CULM* data*set* since they could in theory be reactivated at any time. The "future GPAs" data set includes *67* ~~63~~ active property-owner initiated GPAs submitted within the open "window" for requesting General Plan Foundation changes. (This "window" was opened for the first time in January-February of 2008 after a five-year interval pursuant to the General Plan's Administration Element policies.) Foundation GPA applications denied GPIP "initiation" (i.e., "declined to initiate") by the Board of Supervisors or withdrawn by the applicant were omitted.

Lastly, it should be noted that, notwithstanding the analysis of this section, all of the proposed GPAs in the CULM data set will still have to be processed as individual cases and are *not* included in the scope of this proposed project, GPA No. 960. None of the information or discussion in this EIR is specifically intended as CEQA analysis for these individual GPAs, though future analysis may use this EIR for tiering as allowed by CEQA. Each case will still require individual project-specific CEQA analysis and will be considered separately for approval or denial by the appropriate decision-making body. Inclusion on this list does not imply County endorsement in any way.

The CULM data set was created through the collaboration of three Riverside County departments: Planning, Transportation and GIS *(RCIT)*, as well as the Riverside County Center for Demographic Research (RCCDR). Planning staff collaboratively assembled a database of ~~each of~~ every open GPA application submitted to the County of Riverside. These were sorted to limit the list to applications received through the end of 2009 to correspond to the cut-off point for the EIR. As noted above, this resulted in a total list of *115* ~~138~~ GPAs. *Another 15* ~~The 16~~ GPAs *that were* adopted between the date of the *original 2008* "current" ~~(2008)~~ General Plan and the end-of-2009 EIR cut-off point were ~~also~~ included*, but as part of the CURRENT scenario, rather than the CULM scenario* ~~in the list to ensure consistency amongst the various analyses both within this section and throughout the rest of the EIR's chapters. See Appendix EIR 11 for more details~~.

The data developed for the cumulative data set are based only on "worst-case" scenario build out of all available land uses. This was done to ensure that this EIR analyzes the full spectrum of development/ land use *capacity* identified by the various General Plan scenarios discussed in this section. In reality, the *actual* future demographics of Riverside County (and, hence land use build out) are influenced greatly by a number of subtle and varied demographic, economic and political factors. For example, Riverside County's official demographic forecasts are much more complicated and sophisticated projections than those used in this section. However, adjusting each of the scenarios (including each of the *115* ~~138~~ GPAs) for such myriad details and factors was infeasible within the scope of this cumulative impacts analysis.

For each of the cumulative impacts analyzed herein, the CULM data set was compared against existing conditions (baseline data set*, which represents the current state of development in the county*) and the two other General Plan build out scenarios mentioned above: the existing (*2009* ~~2008~~) General Plan (CURR GP) and the General Plan as it would be if amended by GPA No. 960 (i.e., the GPU build out scenario). For further details on how the spatial analyses were conducted for each of these scenarios, see Subsection 5.5.D.1 (Land Use), below.

2. Cumulative GPA Build Out Scenario - Data and Projections

The work efforts outlined above resulted in the creation of a CULM build out scenario data set that includes both a land use capacity (spatial) component and a set of demographic projections. The total acreages for each LUD associated with the CULM data set are shown in Table 5.5-B (Land Use Summary for Cumulative GPAs Build Out Scenario), below. The demographic results are shown in Table 5.5-C (Demographic Summary for Cumulative GPAs Build Out Scenario). Additional details on each of the data sets used in this section are provided in Appendix EIR-11.

Table 5.5-B: Land Use Summary for Cumulative GPAs Build Out Scenario

Development Categories and Land Use Designations (LUDs)[1]	DATA SET: ADDITIONAL CULM GPAs[2] (acres)	CULM SCENARIO BUILD OUT[3] (acres)	CHANGE FROM EXISTING (BASELINE)[4] TO BUILD OUT (acres)
URBAN / SUBURBAN ***Subtotal***	***+ 12,360***	***117,300***	***+ 39,040***
Residential Uses	***+ 4,770***	***79,500***	***+ 45,300***
LDR-CD (Low Density Residential)	*+ 70*	*9,500*	*- 4,970*
MDR (Medium Density Resi.)	*- 730*	*54,400*	*+ 48,300*
MHDR (Med.-High Density Resi.)	*+ 3,340*	*10,070*	*- 3,120*
HDR (High Density Resi.)	*+ 1,210*	*3,930*	*+ 3,520*
VHDR (Very High Density Resi.)	*+ 720*	*1,410*	*+ 1,410*
HHDR (Highest Density Resi.)	*+ 160*	*190*	*+ 190*
Commercial & Industrial Uses	***+ 7,590***	***37,800***	***+ 6,260***
CR (Commercial-Retail)	*+ 6,320*	*9,790*	*+ 510*
CT (Commercial-Tourist)	*+ 220*	*2,360*	*- 350*
CO (Commercial-Office)	*+ 60*	*300*	*- 15,050*
LI (Light Industrial)	*+ 200*	*18,680*	*+ 6,030*
HI (Heavy Industrial)	*+ 300*	*1,930*	*- 1,690*
BP (Business Park)	*+ 260*	*3,780*	*+ 3,780*
MUPA & CC (Mixed Use LUDs)[5]	*+ 230*	*1,960*	*+ 830*
PUBLIC FACILITIES **Subtotal**	***- 2,320***	***37,250***	***- 5,530***
PF (Public Facilities)	*+ 1,200*	*31,190*	*- 1,190*
FWY (Freeways & Major Roads)[6,8]	*+ 400*	*7,480*	*+ 1,890*
MISC (Misc. Development)[6]	*- 3,920*	*- 1,420*	*- 6,230*

Development Categories and Land Use Designations (LUDs)[1]	DATA SET: ADDITIONAL CULM GPAs[2] (acres)	CULM SCENARIO BUILD OUT[3] (acres)	CHANGE FROM EXISTING (BASELINE)[4] TO BUILD OUT (acres)
RURAL / AGRICULTURE Subtotal	***+ 3,600***	***295,490***	***+ 52,840***
Residential Uses	***+ 7,880***	***93,930***	***+ 90,710***
EDR-CD (Estate Density Resi.)	*+ 260*	*2,770*	*+ 2,770*
EDR-RC (Estate Density Resi., RC)	*+ 6,800*	*35,010*	*+ 34,190*
VLDR-CD (Very Low Density Resi.)	*+ 6,340*	*20,020*	*+ 20,020*
VLDR-RC (V. Low Density Resi, RC)	*- 4,940*	*22,220*	*+ 21,580*
LDR-RC (Low Density Resi., RC)	*- 580*	*13,910*	*+ 12,150*
Economic Land Uses	***- 4,280***	***201,560***	***- 37,870***
AG (Agriculture)	*- 4,130*	*194,000*	*- 35,030*
OS-MIN (Mineral Resources, OS)	*- 150*	*7,560*	*- 2,840*
INTERFACE/WILDLAND Subtotal	***- 29,320***	***2,224,160***	***+ 2,168,270***
Residential Uses	***- 30,250***	***2,209,050***	***+ 2,159,120***
RR-RUR (Rural Residential, RUR)	*- 7,120*	*132,080*	*+ 82,150*
RM-RUR (Rural-Mountains, RUR)	*- 7,200*	*137,710*	*+ 137,710*
RD-RUR (Rural-Desert, RUR)	*- 890*	*21,240*	*+ 21,240*
OS-RUR (Rural Residential, OS)	*- 15,040*	*1,918,020*	*+ 1,918,020*
Economic Land Uses	***+ 930***	***15,110***	***+ 9,150***
OS-REC (Recreation, OS)	*+ 930*	*15,110*	*+ 9,150*
Open Land Uses	***+ 3,650***	***56,310***	***- 575,440***
OS-C (Conservation, OS)	*+ 3,650*	*56,310*	*- 575,440*
VACANT / OPEN SPACE Subtotal	***+ 15,680***	***1,288,610***	***- 2,254,260***
OS-C (Conservation, OS)[7]	*0*	*0*	*0*
OS-CH (Conservation Habitat, OS)[7]	*+ 10,950*	*1,213,640*	*+ 1,209,990*
OS-W (Water, OS)[7]	*+ 960*	*74,970*	*+ 15,520*
VAC (Vacant)[6]	*0*	*0*	*- 2,904,790*
MISC	*0*	*120*	*+ 100*
GRAND TOTAL	**0**	**4,019,240**	**0**

Footnotes:
1. CD = Community Development Foundation; RC = Rural Community Foundation; RUR = Rural Foundation; OS = Open Space Foundation. Foundation is CD if not listed otherwise. For LUD abbreviations, see Table 4.2-D.
2. Change in acreage (+/-) attributed to the CULM GPAs data set. (TOT-CULM Δ scenario in Appendix EIR-11.)
3. TOT-CULM scenario build out = build out of Current (*2009* ~~2008~~) General Plan as amended per CULM GPA data set plus GPA No. 960 changes. See Table 5.5-A for list of GPAs encompassed by CULM GPAs DATA SET. (Labeled "TOT-CULM" in Appendix EIR-11 tables.)
4. TOT-CULM SCENARIO BUILD OUT minus EXISTING (baseline existing uses of land). (ENVI-TOTCULM Δ scenario in Appendix EIR-11.)
5. MUPA = Mixed Use Planning Area; CC = Community Center.
6. Not an LUD in the General Plan; category used for existing uses of land and/or GIS mapping only.
7. Existing "Natural Open Space" and undeveloped public/quasi-public parklands categorized as "OS-C." Existing "Natural (Reserve)" categorized as "OS-CH." Existing land uses under OS-W include "Water (Colorado River)."
8. For built uses, LUDs generally include roadway acreages (i.e., those totals not included in "roadways").

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013.

Table 5.5-C: Demographic Summary for Cumulative GPAs Build Out Scenario

Development Categories and Land Use Designations (LUDs)	DATA SET: ADDITIONAL CULM GPAs[2]	TOT-CULM SCENARIO BUILD OUT[3]	CHANGE FROM EXISTING (BASELINE) TO BUILD OUT[4]
URBAN / SUBURBAN			
Residential Uses (acres)[4]	***+ 2,150 ac***	***79,500 ac***	***+ 45,300 ac***
Dwelling Units (du)	*+ 11,090 du*	*370,700 du*	*+ 178,530 du*
Population (persons)	*+ 42,410 pers*	*1,221,540 pers*	*+ 706,590 pers*
Average Residential Density (du/ac)	*+ 0.01 pers*	*4.7 du/ac*	*- 0.96 du/ac*
Commercial & Industrial Uses (acres)[5]	***+ 7,160 ac***	***37,800 ac***	***- 6,260 ac***

Development Categories and Land Use Designations (LUDs)	DATA SET: ADDITIONAL CULM GPAs[2]	TOT-CULM SCENARIO BUILD OUT[3]	CHANGE FROM EXISTING (BASELINE) TO BUILD OUT[4]
Employment Generated (jobs)	+ 87,830 jobs	540,380 jobs	+ 444,310 jobs
Subtotal	***+ 9,310 ac***	***117,300 ac***	***+ 39,040 ac***
PUBLIC FACILITIES			
Public Facilities & Infrastructure (acres)[6]	***- 1,750 ac***	***37,250 ac***	***- 5,530 ac***
Employment Generated (jobs)	- 200 jobs	3,250 jobs	+ 2,920 jobs
Subtotal	***- 1,750 ac***	***37,250 ac***	***- 5,530 ac***
RURAL / AGRICULTURE			
Residential Uses (acres)[4]	***+ 6,960 ac***	***93,930 ac***	***+ 90,710 ac***
Dwelling Units (du)	- 2,000 du	69,370 du	+ 64,480 du
Population (persons)	- 5,110 pers	228,220 pers	+ 215,150 pers
Average Residential Density (du/ac)	- 0.09 du/ac	0.74 du/ac	- 0.78 du/ac
Natural Resource Uses (acres)[7]	***- 3,040 ac***	***201,560 ac***	***- 37,870 ac***
Employment Generated (jobs)	- 8,860 jobs	98,800 jobs	+ 87,400 jobs
Open Space Uses (acres)[7]	***+ 120 ac***	***120 ac***	***- 109,170 ac***
Subtotal	***- 3,040 ac***	***295,610 ac***	***- 56,330 ac***
INTERFACE / WILDLAND			
Residential Uses (acres)[4]	***- 16,910 ac***	***2,209,050 ac***	***+ 2,159,120 ac***
Dwelling Units (du)	- 6,370 du	79,510 du	+ 68,780 du
Population (persons)	- 19,030 pers	261,680 pers	+ 232,970 pers
Average Residential Density (du/ac)	- 0.003 du/ac	0.036 du/ac	- 0.18 du/ac
Natural Resource Uses (acres)[7]	***+ 1,200 ac***	***15,110 ac***	***+ 9,150 ac***
Employment Generated (jobs)	+ 40 jobs	2,320 jobs	+ 2,230 jobs
Open Space (acres)[7]	***+ 2,870 ac***	***56,310 ac***	***- 575,440 ac***
Subtotal	***- 12,840 ac***	***2,280,470 ac***	***+ 1,592,830 ac***
VACANT / OPEN SPACE			
Open Space (acres)[8]	+ 1,240 ac	1,288,610 ac	- 1,570,010 ac
Subtotal	***+ 1,240 ac***	***1,288,610 ac***	***- 1,570,010 ac***
GRAND TOTALS acres	***0 ac***	***4,019,240 ac***	***0 ac***
dwelling units	***+ 10,530 du***	***519,580 du***	***+ 311,790 du***
population	***+ 32,760 pers***	***1,711,440 pers***	***+ 1,154,710 pers***
employment	***+ 113,170 jobs***	***644,750 jobs***	***+ 536,860 jobs***
gross average density	***---***	***0.13 du/ac***	***---***
jobs:housing ratio	***+ 0.19***	***1.24 jobs/du***	***+ 1.72***

Footnotes:

1. CURRENT GP = Current (*2009* ~~2008~~) General Plan; OVERALL CULM BUILD OUT = the current (*2009* ~~2008~~) General Plan, plus the GPA No. 960 changes, as well as the changes proposed by the existing GPAs approved or applied for through the end of 2009 (see Table 5.5-A). Also see Table 5.5.B footnotes for additional land use notes.
2. Change in acreage (+/-) attributed to the CULM GPAs data set. ("CULM Δ" scenario in Appendix EIR-11.)
3. TOT-CULM SCENARIO BUILD OUT = Build out of Current (*2009* ~~2008~~) General Plan as amended per CULM GPA data set plus GPA No. 960 changes. See Table 5.5-A for list of GPAs encompassed by CULM GPAs DATA SET. ("TOT-CULM" scenario in Appendix EIR-11.)
4. Residential Uses encompass: Urban/Suburban: LDR, MDR, MHDR, HDR, VHDR and HHDR (all CD Foundation); Rural/Agricultural: EDR, RC-EDR, VLDR, RC-VLDR and RC-LDR; Interface/Wildland: RR, RD, RM and OS-RUR. ("ENVI-TOTCULM Δ" scenario in Appendix EIR-11.)
5. Commercial & Industrial Uses encompass: CR, CT, CO, LI, HI, BP, CC and MUPA.
6. Public Facilities & Infrastructure Uses encompass: PF, FWY and MISC. (FWY and MISC are not LUDs, rather they denote existing uses of land and/or GIS mapping categories only.)
7. Natural Resource Uses encompass: Rural/Agricultural: AG and OS-MIN; Interface/Wildland: OS-REC.
8. Open Space encompasses: OS-C, OS-CH, OS-W and VAC (VAC is an existing use of land designation, not a General Plan LUD).

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013.

3. Environmental Assumptions

The specific methods used for modeling environmental effects are as outlined in the corresponding parts of Section 4.0. The modeling in the cumulative effects subsections uses *theoretical* projections because specific area-by-area calculations for each resource, using each independent area or agency's own variables and procedures (for

example, each of the 23 individual water districts or each school district) were beyond the scope of this programmatic analysis. In addition, controlling these variables in the modeling process by using standardized factors countywide enables valid comparisons amongst the various scenarios and regions for the given resource. Notwithstanding any of the modeling used herein, the ultimate methods and timing for meeting the resource needs discussed in this section will always be at the discretion of the responsible agency. For example, each individual school district determines where, when and what type of schools are built within its district, regardless of any land use designations in the Riverside County General Plan. This also applies to water agencies, park districts, municipalities, etc. Thus, the cumulative data herein should not be construed as the *actual* specific needs, demands or effects that would arise for a given location *(which are generally population, not capacity, based)*. Such determinations will be made on a project-by-project basis as development occurs and may vary based on the surrounding area.

The theoretical projections herein are also based on the assumption that all the land uses proposed under each scenario *will* develop fully and as mapped/planned. As such, each represents the theoretical, worst-case scenario and likely over-states the actual real-world development potential likely to result*, even though in real life, 100-percent build out of all areas throughout the County is highly unlikely based on historical development patterns*. Actual future development of individual parcels and areas mapped in the various build out scenarios, including those of GPA No. 960, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities. The County of Riverside has little to no control over the decision to propose development (new or redeveloped) on a given site although the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County. Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply, infrastructure availability, costs, etc.

C. Cumulative Effects

In this subsection, each of the individual areas of environmental analysis previously covered in Section 4.0 (i.e., Sections 4.1 through 4.19) are addressed here for the CULM scenario and the project's incremental contributions to the cumulative effects of Riverside County build out. According to the State CEQA Guidelines, CCR Section 15130 (b):

> *"The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other project which do not contribute to the cumulative impact."*

Accordingly, in the subsections that follow, each environmental topic is described relative to its existing setting and future conditions, as they apply to the cumulative scenarios developed for this EIR. The existing setting, project-specific effects, impacts and mitigation for each environmental topic have already been provided in Sections 4.1 through 4.19. Thus, to avoid repetition, the discussions below refer back to those sections where ever possible. Also, see those sections for information on the specific sources and data development methods employed for each environmental resource or topic. The discussions below focus on the cumulative impacts that are significant and, in particular, those areas where the project's contribution to such cumulative impacts would be considerable. Lastly, *at the end of this subsection* ~~following these discussions is~~ a table summarizing the project's overall cumulatively substantial impacts *is presented*.

1. Cumulative Effects on Land Use

Section 4.2 (Land Use) of this EIR discusses in great detail the existing uses of land within Riverside County, as well as the land use data sources used. The section also analyzes the impacts that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the regulatory mitigation measures that would ensure impacts are less than significant. Thus, to avoid repetition, information already covered in Section 4.2 is not repeated here. The reader is encouraged to refer back to Section 4.2 directly for additional details on land use.

a. Existing and Future Conditions

Within Riverside County are 26 incorporated cities, which are not included in the scope of the Riverside County General Plan other than for planning and coordination purposes. The General Plan and the proposed project's land use data were updated to reflect the transfer of the cities of Wildomar and Menifee from County land use jurisdiction. Two other new cities, Eastvale and Jurupa Valley, are included in *most of the analyses in* this EIR, as their incorporations occurred well after the April 13, 2009, release of the NOP for this project. This means that impacts to northwestern Riverside County are addressed by this programmatic EIR, even though they now represent impacts to cities (and hence are not subject to County of Riverside jurisdiction). *Since they were prepared later, the cumulative analyses in this section do, however, exclude from all scenarios any proposed GPAs that fall into lands now part of any incorporated city.*

Existing development and uses of land within Riverside County are a mosaic of varying types of uses, ownerships, character and intensity. Table 5.5-D (Cumulative Land Use Effects) shows the generalized existing (*as of* 2008) land use throughout Riverside County based on raw data provided by SCAG and developed by RCCDR. This table defines land uses into *five* ~~four~~ broad categories (Urban/Suburban, Rural/Agricultural, Interface/Wildland*, Public Facilities* and Vacant/Open Space) based on the associated level of development density and intensity.

The table also shows three scenarios for General Plan build out which were developed from the three land use scenarios described in the introduction to this section: build out of the current (*2009* ~~2008~~) General Plan ("CURR GP"), the updated General Plan as amended per GPA No. 960 ("GPU") and the General Plan as amended per the cumulative GPA set ("CULM" or "CULM GP"). These four land use build out scenarios were analyzed against various GIS data *maintained by the County of Riverside* ~~in RCLIS~~.

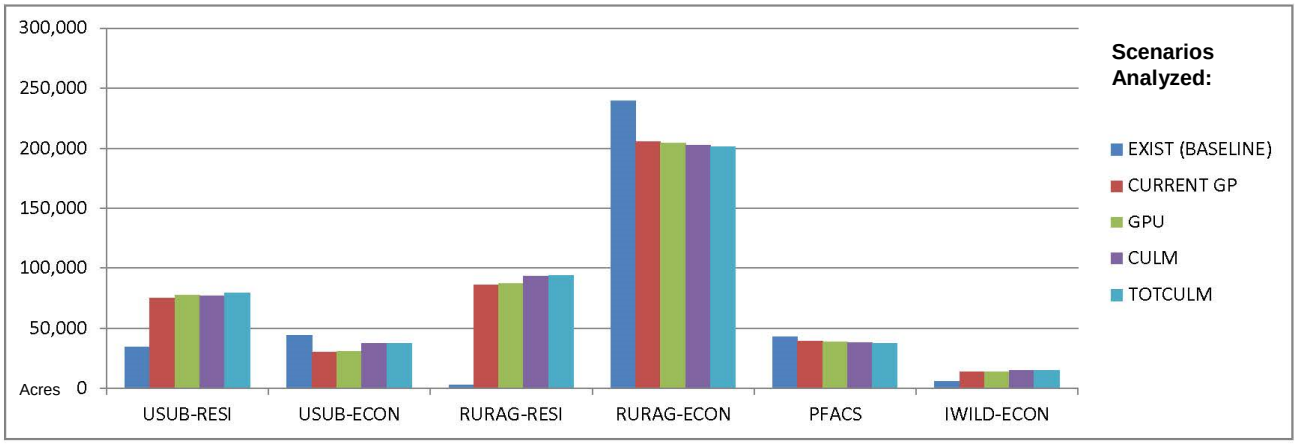
As shown in the table below, at present the majority of land within unincorporated Riverside County (just over 90%) is not developed. In particular, vacant and open lands *dominate* ~~predominant in~~ the eastern desert areas outside the Coachella Valley. Of the existing types of residential uses within the unincorporated county, 61% are of the rural or interface/wildland type and only 38% are within areas considered urban or suburban (e.g., lots under a half-acre). Of the developed areas, most are located in western Riverside County (i.e., roughly the third of the county located west of the San Jacinto Mountains) and the Coachella Valley. Large tracts of federal lands, including National Forests, account for open space areas in southern Riverside County, much of the San Jacinto Mountains and parts of the eastern desert as well. See Section 4.2 for additional details on the land use patterns existing within Riverside County and its cities.

In regards to land use-related cumulative impacts, Table 5.5-D reveals a number of trends *expected* as Riverside County develops over time. *These trends can be seen graphically in Figures 5.5-A and 5.5-B, below.* First, in the long run Riverside County will still be facing large growth pressures. Even with the slower pace of growth following the collapse of the housing market in the late 2000s, a substantial increase in growth is still anticipated to result in the implementation of future GPAs over the next 50 years if all of the changes proposed by GPA No. 960 and the cumulative General Plan scenario occur. *The slow-but-steady ongoing economic recovery shows growth continuing within*

Southern California, including Riverside County. These changes and growth pressures will have a direct bearing on land uses within Riverside County.

In terms of urban/suburban residential development, build out of the existing General Plan (CURR GP) will increase the amount of land devoted to residential uses by more than double (120%). In particular, nearly 50,000 additional acres of Medium Density Residential (MDR) are planned, which alone would accommodate nearly 180,000 additional homes. In Riverside County, this substantial increase will occur mainly through the development of vacant lands, with infill providing opportunities for densification and urbanization as communities mature. These effects were originally addressed by the EIR for the current General Plan (EIR No. 441).

Figure 5.5-A: Comparison of Land Use Groups by General Plan Build Out Scenario

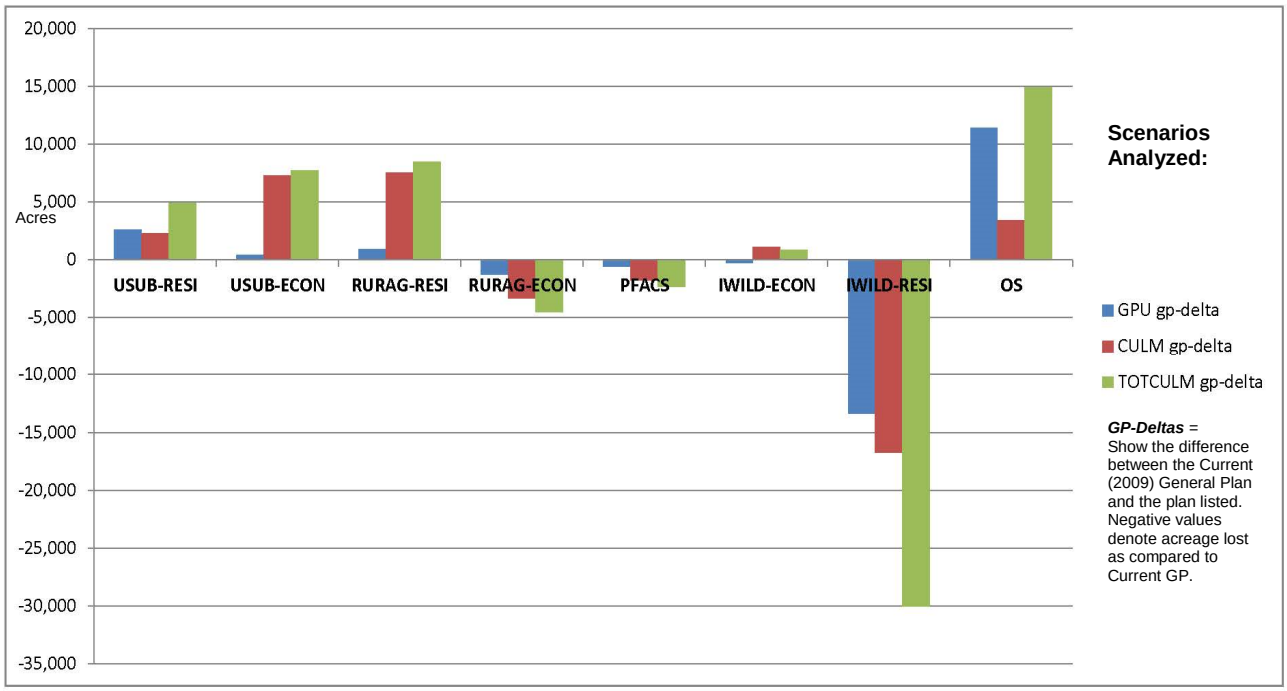


Footnotes:

1. *Land Use Groups abbreviations: USUB = Urban/Suburban; RURAG = Rural/Agriculture; PFACS = Public Facilities; IWILD = Interface/Wildlands.*
2. *Other abbreviations: RESI = encompasses all residential land uses of the LU Group; ECON = encompasses all economic land uses in the LU Group (both commercial and industrial). See Appendix EIR-11 for more information on these Land Use Groups and the aggregation methods used.*

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013. RCIT GIS analysis, 2013 and 2014.

Figure 5.5-B: Change in Land Use Groups by General Plan Build Out Scenario



Footnotes:

1. *Land Use Group abbreviations: USUB = Urban/Suburban; RURAG = Rural/Agriculture; PFACS = Public Facilities; IWILD = Interface/Wildlands.*
2. *Other abbreviations: RESI = encompasses all residential land uses of the LU Group; ECON = encompasses all economic land uses in the LU Group (both commercial and industrial). See Appendix EIR-11 for more information on these Land Use Groups and the aggregation methods used.*

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013. RCIT GIS analysis, 2013 and 2014.

The proposed project, GPA No. 960, would increase the amount of urban/suburban residential units planned by roughly 2,600 acres. *(See Table 1.6 in Appendix EIR-11.)* Incrementally, this contribution is not substantial, as it represents only 2% of the total urban/suburban residential area planned. Similarly, the cumulative General Plan scenario (CULM GP) would further add *2,150*~~2,300~~ acres to the urban/suburban residential total. *(See Table 1.7 in Appendix EIR-11.)* Proportionally, this increase is also only a 2% increment and also not substantial.

Given the nature of Riverside County, the vast majority of land planned for residential development (e.g., per the current General Plan) is located in rural areas. Specifically, the existing General Plan *(CURR)* calls for *nearly 2.24* ~~over 2.32~~ million acres of rural residential uses, particularly in the Interface/Wildlands category (i.e., lots 5 acres and larger). This is a substantial increase addressed under EIR No. 441. It should be noted, however, that this increase represents all of the lands designated for rural residential land uses within Riverside County, including vast portions of the far eastern desert (beyond the Coachella Valley) that are designated OS-RUR (open space-rural) by default. The OS-RUR designation is frequently used in the remote and least-developed portions of Riverside County to provide the minimal level of development potential necessary for private lands. It is unlikely that all of the lands so-designated would actually see development based on historic and economic data and trends. However, this EIR and this cumulative analysis nevertheless assume full development in order to ensure a "worst case" scenario.

Table 5.5-D: Cumulative Land Use Effects

Development Categories and Land Use Designations (LUDs)[1]	EXISTING USES of LAND (acres)	FUTURE (GP BUILD OUT)[2]		
		CURRENT GP (acres)	GPU / GPA960 (acres)	TOT CULM GP (acres)
URBAN / SUBURBAN ***Subtotal***	**78,260**	***105,940***	***107,990***	***117,300***
Residential Uses	**34,200**	***74,730***	***77,350***	***79,500***
LDR-CD (Low Density Residential)	14,470	*9,430*	*8,880*	*9,500*
MDR (Medium Density Resi.)	6,100	*55,130*	*56,180*	*54,400*
MHDR (Med.-High Density Resi.)	13,220	*6,730*	*8,260*	*10,070*
HDR (High Density Resi.)	410	*2,730*	*3,170*	*3,930*
VHDR (Very High Density Resi.)	0	*690*	*830*	*1,410*
HHDR (Highest Density Resi.)	0	*30*	*30*	*190*
Commercial & Industrial Uses	**44,060**	***30,210***	***30,640***	***37,800***
CR (Commercial-Retail)	10,300	*3,470*	*3,470*	*9,790*
CT (Commercial-Tourist)	2,010	*2,140*	*2,150*	*2,360*
CO (Commercial-Office)	15,350	*240*	*240*	*300*
LI (Light Industrial)	12,650	*18,480*	*18,590*	*18,680*
HI (Heavy Industrial)	3,620	*1,630*	*1,630*	*1,930*
BP (Business Park)	0	*3,520*	*3,500*	*3,780*
MUPA & CC (Mixed Use LUDs)[3]	130	*730*	*1,060*	*960*
PUBLIC FACILITIES & INFRA. **Subtotal**	**42,780**	***39,570***	***39,000***	***37,250***
PF (Public Facilities)	32,380	*29,990*	*30,860*	*31,190*
FWY (Freeways & Major Roads)[4, 5]	5,590	*7,080*	*7,060*	*7,480*
MISC (Misc. Development)[4]	4,810	*2,500*	*1,080*	*- 1,420*
RURAL / AGRICULTURE **Subtotal**	**351,940**	***291,890***	***291,570***	***295,490***
Residential Uses	**3,220**	***86,050***	***86,970***	***93,930***
EDR-CD (Estate Density Resi.)	0	*2,510*	*2,680*	*2,770*
EDR-RC (Estate Density Resi., RC)	820	*28,210*	*28,040*	*35,010*
VLDR-CD (Very Low Density Resi.)	0	*13,680*	*19,700*	*20,020*
VLDR-RC (V Low Density Resi, RC)	640	*27,160*	*22,530*	*22,220*
LDR-RC (Low Density Resi., RC)	1,760	*14,490*	*14,020*	*13,910*
Non-Residential Uses	**239,430**	***205,840***	***204,600***	***201,560***
AG (Agriculture)	229,030	*198,130*	*196,890*	*194,000*
OS-MIN (Mineral Resources, OS)	10,400	*7,710*	*7,710*	*7,560*
Open Land Uses	**109,290**	***0***	***0***	***0***
VAC (Vacant)[4]	109,290	*0*	*0*	*0*
INTERFACE/WILDLAND **Subtotal**	**687,640**	***2,253,480***	***2,293,870***	***2,224,160***
Residential Uses	**49,930**	***2,239,300***	***2,225,960***	***2,229,050***
RR-RUR (Rural Residential, RUR)	49,930	*139,200*	*133,400*	*132,080*
RM-RUR (Rural-Mountains, RUR)	0	*144,910*	*140,040*	*137,710*
RD-RUR (Rural-Desert, RUR)	0	*22,130*	*21,240*	*21,240*
OS-RUR (Rural Residential, OS)	0	*1,933,060*	*1,931,280*	*1,918,020*
Non-Residential Land Uses	**5,960**	***14,180***	***13,910***	***15,110***
OS-REC (Recreation, OS)	5,960	*14,180*	*13,910*	*15,110*

Development Categories and Land Use Designations (LUDs)[1]	EXISTING USES of LAND (acres)	FUTURE (GP BUILD OUT)[2]		
		CURRENT GP (acres)	GPU / GPA960 (acres)	TOT CULM GP (acres)
Open Land Uses	**631,750**	***52,660***	***53,440***	***56,310***
OS-C (Conservation, OS)	631,750	*52,660*	*53,440*	*56,310*
VACANT / OPEN SPACE Subtotal	**2,858,620**	***1,276,700***	***1,287,370***	***1,345,040***
OS-C (Conservation, OS)[6]	0	*0*	*0*	*0*
OS-CH(Conservation Habitat, OS)[6]	3,630	*1,202,690*	*1,212,990*	*1,213,640*
OS-W (Water, OS)[6]	59,470	*74,010*	*74,380*	*74,970*
VAC (Vacant)[4]	2,795,500	---	---	---
MISC	*0*	---	---	*120*
GRAND TOTAL	**4,019,240**	***4,019,240***	***4,019,240***	***4,019,240***

Footnotes:
1. CD = Community Development Foundation; RC = Rural Community Foundation; RUR = Rural Foundation; OS = Open Space Foundation. Foundation is CD if not listed otherwise. For LUD abbreviations, see Table 4.2-D.
2. Build out scenarios: CURR GP = Current (*2009* ~~2008~~) General Plan; GP/GPA960 = Current (*2009* ~~2008~~) General Plan with changes proposed by GPA No. 960; TOT CULM GP = Current (*2009* ~~2008~~) General Plan, plus GPA No. 960, as well as changes proposed by existing GPAs approved or applied for through the end of 2009 (see Table 5.5-A). *See Appendix EIR-11, Tables 1.1, 1.2, 1.3 and 1.5 for full data sets.*
3. MUPA = Mixed Use Planning Area; CC = Community Center.
4. Not an LUD in the General Plan; category used for existing uses of land and/or GIS mapping only.
5. For built uses, LUDs generally include roadway acreages (i.e., no separate totals for "roadways").
6. Existing "Natural Open Space" and undeveloped public/quasi-public parklands categorized as "OS-C." Existing "Natural (Reserve)" categorized as "OS-CH." Existing land uses under OS-W include "Water (Colorado River)."

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013. *RCIT GIS analysis, 2013 and 2014.*

With its reduced or eliminated footprints for several rural villages and other rural areas, GPA No. 960 would lessen the severity of land use effects by reducing the amount of residential acreage planned in outlying rural areas (i.e., wildlands and interface). In total, the project *(GPU scenario)* calls for *13,300 fewer* ~~over 12,400~~ acres *of* ~~less~~ rural residential uses. *(See Table 1.6 in Appendix EIR-11.)* Similarly, the cumulative General Plan scenario would further reduce interface/wildland residential uses by *nearly 17,000* ~~an~~ additional ~~16,720~~ acres. Even after accounting for the *nearly 7,000* ~~7,570~~-acre increase in the rural/agricultural category, this still yields an overall net decrease of *roughly 10,000* ~~9,150~~ acres for net non-urban residential. Thus, in total, either of these General Plan scenarios would have a net beneficial cumulative effect by slightly offsetting the existing General Plan's proposed increases in rural and interface residential acreage.

The need to extend infrastructure further into rural portions of Riverside County, particularly remote areas not currently served, however, would trigger additional environmental impacts associated with their construction and operation. For details on environmental effects associated with specific types of infrastructure see the relevant parts of Section 4.0: Section 4.10 for energy resources (including electricity and natural gas), Section 4.18 for roads and other circulation infrastructure, Section 4.17 for public facilities and Section 4.19 for water resources, including potable water, sewer and storm drainage. No new highways or major infrastructure that would divide a community (e.g., dams, canals or rail lines) are planned or proposed under GPA No. 960 or the cumulative General Plan scenarios. Environmental impacts associated with new major county highways were addressed initially in EIR No. 441 for the current General Plan and additionally through CETAP (Community Environmental Transportation Accountability Process) also undertaken (along with the MSHCPs) as part of the overall Riverside County Integrated Plan (RCIP).

In terms of non-residential uses, existing land use patterns show large amounts of land devoted to commercial, industrial and public facility uses. This includes areas buffering landfills, surrounding reservoirs, canals, public airports and other facilities. Table 5.5-D indicates build out of the current General Plan would result in a reduction of developed commercial and industrial uses by a third. Rural lands devoted to large-scale public facilities

(e.g., landfills, jails, canals, schools, highways, etc.) would decrease slightly after taking into account excess lands left vacant by base closures and other changes in proposed public uses. Under GPA No. 960, the amount of commercial and industrial uses would increase slightly (by 430 acres), but the amount of public facilities would decrease by 570 acres. Thus, the project would contribute to a net benefit environmentally by reducing the potential public facilities footprint within Riverside County.

Under the cumulative General Plan scenario *(CULM)*, land devoted to public facilities would be further reduced by another 1,750 acres, a beneficial effect. Uses specifically proposed for Commercial-Retail (CR), however, would increase by *over* ~~nearly~~ 6,300 acres. In total, the cumulative scenario would result in an increase of *nearly 7,200* ~~7,300~~ acres of developed commercial and industrial uses. This is an increase of more than 25% and would be cumulatively substantial if the effects of such development are not mitigated. Individual future implementing projects would be required to mitigate significant adverse environmental impacts through compliance with the General Plan EIR (No. 441), this EIR (if applicable), the MSHCPs, the proposed Riverside County Climate Action Plan and other applicable environmental programs, as well as individual CEQA compliance.

In terms of agricultural uses, build out of the current General Plan would result in the loss of roughly 31,000 acres of existing agriculture (the largest single-category loss for a developed use). Both the project (GPA No. 960) and the cumulative General Plan scenario would add further to these losses by slightly increasing the amount of agricultural lands allowed to convert to developed non-agricultural uses. GPA No. 960 would decrease the amount of land designated agricultural ("AG" LUD) by 1,240 acres; the cumulative scenario would subtract another *2,900* ~~3,130~~ acres from this amount. Thus, each of these scenarios would contribute incrementally (0.6% and 1.6%, respectively), but not substantially, to the loss of agricultural land uses.

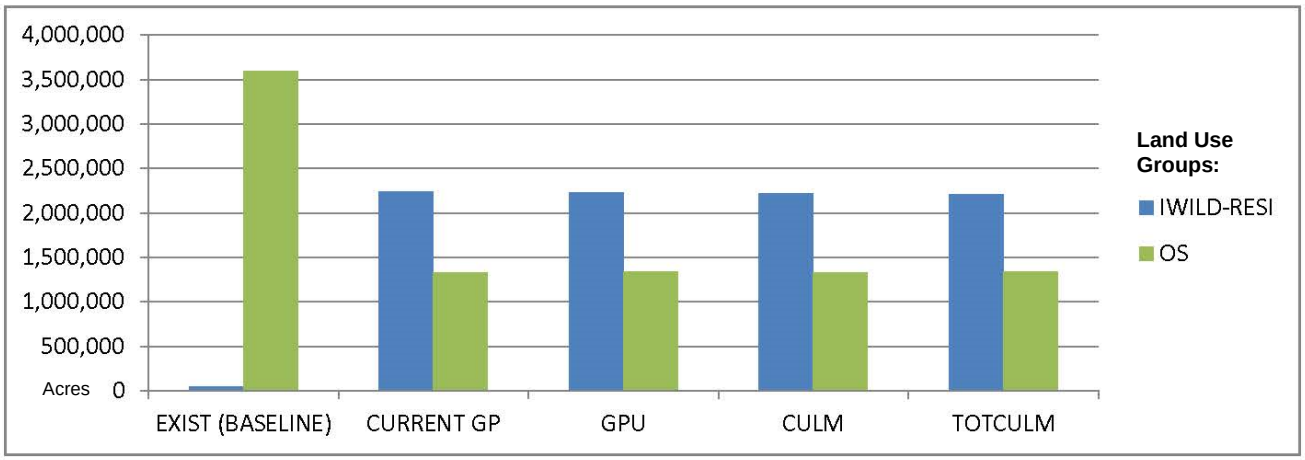
Lastly, the General Plan build out scenarios were analyzed relative to their effects on open space and vacant (undeveloped) lands. This issue was complicated by the difference between how SCAG classifies lands (i.e., as outlined for the Existing Uses of Land scenario in Table 5.5-B) and how the General Plan designates land uses. When developing a land use inventory, SCAG identified lands with no structures or other disturbances as "vacant." While descriptive, this term only reflects what is currently on a parcel, not what is *planned* for the land. Conversely, the land use mapping (LUDs) in the General Plan (and each of the build out scenarios analyzed here), do the exact opposite. They indicate what use(s) a parcel of land *may* someday develop, without regard for what is actually on the land at present. Also, they do not reflect the *likelihood* of the mapped use actually being realized, nor do they reflect when such development might occur. Accordingly, Table 5.5-D reflects this schism with existing lands labeled as "vacant." At build out, all unincorporated lands are assigned a specific use, even if that use is one that preserves the land in its vacant, undeveloped state, for example "OS-CH."

Despite these challenges, several trends were noted. *These trends can be seen in graphic form in Figure 5.5-C, below.* Under the current General Plan, vacant lands, including open space, would be reduced by over half (63%). EIR No. 441 found this loss of open space a significant impact, although the environmental effects of this loss are offset (though not reduced to less-than-significant) through a variety of means, including habitat conservation pursuant to the two MSHCPs covering parts of Riverside County. See Section 4.8 (Biological Resources) for specifics on this issue. The overall trend for the current General Plan is loss of "vacant" lands due to development of *roughly 2.2* ~~nearly 1.5~~ million acres of rural uses (particularly within interface and wildland areas). This is in addition to the offsetting effect of over preserving roughly 1.2 million acres as conservation lands (OS-CH, in particular) in the General Plan. (Note, the specific assembly of these OS-CH lands would be accomplished pursuant to the two MSHCPs; see Section 4.8 for specifics.)

Under GPA No. 960, the amount of land specifically preserved as open space (i.e., OS-C, OS-CH or OS-W) would further increase by *10,300* ~~nearly 11,500~~ acres, resulting in a net beneficial effect on the preservation of open space within Riverside County. The cumulative scenario would contribute *another* ~~nearly~~ 3,500 additional

acres as well. Thus, either scenario would contribute a net beneficial effect to the cumulatively adverse impacts associated with build out of the existing General Plan.

Figure 5.5-C: Wildland and Open Space Land Use Groups by General Plan Build Out Scenario



Footnotes:

1. *General Plan build out scenarios: EXIST = existing state of land development (as per SCAG aerial data), constitutes environmental baseline conditions; CURRENT GP = 2009 General Plan; GPU = Current (2009) General Plan as amended per proposed project, GPA No. 960; CULM = Current General Plan as amended per proposed GPAs used for this cumulative analysis; TOTCULM = General Plan build out with GPA No. 960 and all cumulative GPAs.*
2. *Land Use Group abbreviations: IWILD-RESI = Interface/Wildlands, all vacant/undeveloped, Rural Foundation and OS-Rural land uses. OS = All other vacant lands and open space land uses.*
3. *See Appendix EIR-11 for more information on these Land Use Groups and the aggregation methods used.*

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013. RCIT GIS analysis, 2013 and 2014.

b. Impacts

Future development accommodated by the project will contribute incrementally to cumulative land use impacts as Riverside County builds out (develops) over time pursuant to the Riverside County General Plan (regardless of scenario). Specific land use impacts of the severities indicated will include:

(1) Cumulatively Considerable Impacts

- Increase the number, density and intensity of residential and non-residential development within Riverside County, including both infill development and conversion of vacant land to developed uses.

- Increase the amount of roadways, storm drains, water reservoirs and storage tanks, pipelines, transmission lines and other infrastructure within Riverside County, including both as infill and through conversion of vacant land.

(2) Non-Substantial Incremental Impacts

- Physically divide an established community through development of intervening residential tracts, economic uses and, in particular, highways. (Though no new major highways or other circulation routes are planned in GPA No. 960. See the circulation discussion below for more details.)
- Conflict with land use plans, policies or regulations for avoiding or mitigating and environmental effect, in particular an Airport Land Use Plan (ALUP) or the proposed Climate Action Plan for reducing greenhouse gas emissions. (See the greenhouse gas and safety discussions, respectively, later in Section 5.5 for more on these.)
- Conflict with an HCP or MSHCP. (See biology discussion later in Section 5.5.)

c. Mitigation

As described in detail in Section 4.2.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative land use impacts. These include the following:

Key Regulations and Program: See Section 4.2.3 for details on each regulation.

- Federal Water Pollution Control Act of 1972 (Clean Water Act)
- Subdivision Map Act - California Government Code (CGC) section 66410, *et seq.*
- California Planning and Zoning Law - CGC sections 65000-66499.58
- State Aeronautics Acts - Public Utilities Code (PUC) section 21001 *et seq.*
- Ordinance No. 348 - Zoning and Land Use
- Ordinance No. 448 - Airport Approaches Zoning
- Ordinance No. 460 - Subdivision Regulations
- Ordinance No. 461 - Road Improvement Standards and Specifications
- Ordinance No. 509 - Agricultural Preserves
- Ordinance No. 576 - Regulating County Airports
- Ordinance No. 659 - Development Mitigation Fee for Residential Development
- Ordinance No. 671 - Consolidated Fees for Land Use and Related Functions
- Ordinance No. 673 - Establishing the Coachella Valley Transportation Uniform Mitigation Fee
- Ordinance No. 726 - Transportation Management Requirements for New Development
- Ordinance No. 748 - Traffic Signal Mitigation Program

- Ordinance No. 824 - Western Riverside County Transportation Uniform Mitigation Fee Program
- Ordinance No. 875 - Local Development Mitigation Fee for Funding the Preservation of Natural Ecosystems Under the Coachella Valley MSHCP
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
- Coachella Valley MSHCP
- Riverside County Climate Action Plan (proposed in conjunction with GPA No. 960). See Section 4.7.3 for full details.

Key General Plan Policies: See Section 4.2.3 for the text of each policy.

- Land Use Element Policies: LU 1.1, 1.3, 1.5, 1.6, 1.8, 2.1, 3.1, 5.4, 7.6, 9.1, 9.4, 15.2, 15.3, 15.8, 19.1, 25.2, 28.6, 28.9, 30.3, 30.4, 30.6, 31.1-31.3 and 36.1
- Open Space Element Policies: OS 8.1, 17.1-17.3 and 18.1
- Circulation Element Policies: C 1.1, 1.2, 1.3, 1.4, 1.7, 3.7, 3.11, 3.12, 3.21, 3.30, 3.31, 4.1, 4.3, 4.6, 4.8, 4.9, 6.1-6.3, 7.1-7.4, 7.6, 7.8, 8.5, 8.7, 15.3, 15.4, 20.9 and 20.10

d. Significance

The analysis presented above indicates that future development consistent with the proposed project, GPA No. 960, would contribute less than significant incremental impacts on land use-related environmental issues, including physical division of an established community, consistency with land use plans, policies and regulations adopted to avoid or mitigate environmental effects, and consistency with habitat conservation plans. Moreover, implementation of, and compliance with, the above regulations, Riverside County ordinances and General Plan policies would ensure that cumulative impacts on land use are either avoided or minimized to less than significant.

2. Cumulative Effects on Population and Housing

Section 4.3 (Population and Housing) of this EIR discusses population and housing in detail, including future population growth and housing needs within Riverside County. It also analyzes impacts on population and housing from future development accommodated by the changes proposed by the project, GPA No. 960, and discusses individual project mitigation measures. Areas already covered in Section 4.3 are not repeated here.

The cumulative population, jobs and housing data presented in this subsection were developed pursuant to proposed General Plan Appendices E-1 and F-1. The land use-based data and associated build out projections are as outlined in Section 5.5.B. Data presented in Section 4.3 includes Table 4.3-A (Population Growth Trends, 1997-2007), Table 4.3-B (Housing Growth Trends, 1990-2007), Table 4.3-C (Housing Unit Building Permits Issued, 1990-2007), Table 4.3-D (Regional Housing Needs Assessment, 2006-2014), Table 4.3-E (Annual Average Payroll Employment by Industry, Riverside County 1999-2007), Table 4.3-F (Theoretical Build Out Projections (Land Use-Based Capacities) and Table 4.3-G (Comparison of Regional Projections).

a. Existing Conditions

Population growth in Riverside County as a whole has been quite rapid over the past two decades. As reported in proposed General Plan Appendix F-1, the population grew from approximately 1.2 million *in* 1990 to nearly 2.1 million as of January 1, 2008. In 2007, the unincorporated portion of Riverside County had a population of 537,600 people. Between 1997 and 2007, the population of unincorporated Riverside County increased by 26.7%.

Housing was the major driver of growth in Riverside County between 2000 and 2009. As indicated in Table 2 of proposed *General Plan* Appendix F-1, during this period Riverside County's housing stock grew by more than 34% (roughly 199,700 units). Average household size also increased steadily during that time, from 2.49 persons per household in 1990 to a peak of 3.09 persons per household in 2004. Since then, the average household size has declined slightly to 3.06 persons per household as of 2009. Since 2006, however, housing demand and home values have been greatly affected by changes in the national and local economies, as well as mortgage and banking industry changes. Housing starts have slowed markedly and this downturn has also affected employment in the region, as many construction jobs were lost.

b. Future Conditions

To provide a consistent set of projections across the various build out scenarios analyzed for cumulative impacts, the land use data (acreages) developed as outlined in subsection 5.5.B was used to model a series of *theoretical* socioeconomic data (SED) encompassing housing (dwelling units, du), population (based on the countywide standard of 3.06 persons per du) and jobs (based on the employment-generating factors associated with each economic land use). See Section 4.17 for specifics on the methodology used. The resultant SED data is presented in Table 5.5-E (Cumulative Socioeconomic Effects), below.

As Table 5.5-E shows, the overall residential density increases with each build out scenario as vacant lands infill. The urban *(USUB)* population would more than double by build out of the current General Plan; a cumulatively substantial increase. GPA No. 960 would incrementally add roughly 7% more people than already planned; a small fraction overall, but cumulatively substantial given the significance of the increase over existing conditions.

The development growth patterns are more noticeable within the rural/agriculture and interface/wildland areas of Riverside County. Demographic data indicate that as of *2009* ~~2008~~, roughly 15,600 homes occurred in these two categories on over 53,000 acres, housing nearly 42,000 people. Under the current General Plan, nearly *1,600,000* ~~2,300,000~~ additional acres of land would be subject to development potential, mainly in the form of Open Space-Rural Residential (OS-RUR), which allocates residential lots of 20 acres minimum. Based on historical trends and development patterns, it is unlikely that all of the OS-RUR lots within Riverside County would actually achieve full build out. Nevertheless, even if only 50% of the lots build out, the total area converted from vacant and open lands to rural residential would still be increasing 20-fold and the number of homes, particularly within the interface and wildland areas, would increase more than 10-fold. This increase would also result in a variety of related growth effects, such as the need for additional public services, energy resources (gas, electricity) and potable water. Under the GPU/GPA 960 scenario, 12,400 fewer acres of rural, interface and wildland development capacity would be allowed; resulting in over 11,000 dwelling units and over 33,000 fewer people being added to the region. The CULM scenario would decrease capacity by an additional *10,000* ~~3,200~~ acres, 8,000 homes and roughly 24,000 people.

Thus, overall build out of the current General Plan would increase residential units by *317,000* ~~250,000~~ and the number of people by *1.2 million* ~~765,000~~. The addition of the project's changes would add roughly 24,000 more homes and 72,000 more people (6% more). The addition of the cumulative build out scenario would add another 8% more people and homes on top of this (i.e., *10,500* ~~30,400~~ du and *33,000* ~~93,000~~ people). With the large

(176%) increase over existing conditions already associated with build out of the current General Plan, the incremental contributions of the proposed project and cumulative scenarios would be cumulatively significant. The extensive housing inventory that would result, however, would ensure that no people or homes are displaced by future development without replacement available.

Table 5.5-E: Cumulative Socioeconomic Effects

Development Categories & Land Use Designations (LUDs)	EXISTING USES of LAND	FUTURE (GP BUILD OUT)[1]		
		CURRENT GP	GPU / GPA960	TOT CULM GP
URBAN / SUBURBAN				
Residential Uses (acres)[2]	***34,200 ac***	***74,730 ac***	***77,350 ac***	***79,500 ac***
Dwelling Units (du)	*192,170 du*	*356,120 du*	*359,540 du*	*370,700 du*
Population (persons)	*514,950 pers*	*1,160,140 pers*	*1,179,130 pers*	*1,221,540 pers*
Average Residential Density (du/ac)	*5.6 du/ac*	*4.8 du/ac*	*4.6 du/ac*	*4.7 du/ac*
Commercial & Industrial Uses (acres)[3]	***44,060 ac***	***30,210 ac***	***30,640 ac***	***37,800 ac***
Employment Generated (jobs)	*96,070 jobs*	*478,600 jobs*	*452,550 jobs*	*540,380 jobs*
Urban / Suburban Subtotal	***78,060 ac***	***104,490 ac***	***107,990 ac***	***117,300 ac***
PUBLIC FACILITIES & INFRASTRUCTURE				
Public Facilities & Infrastructure (acres)[3]	***42,780 ac***	***39,570 ac***	***39,000 ac***	***37,250 ac***
Employment Generated (jobs)	*330 jobs*	*3,600 jobs*	*3,450 jobs*	*3,250 jobs*
Public Facilities Subtotal	***42,780 ac***	***39,570 ac***	***39,000 ac***	***37,250 ac***
RURAL / AGRICULTURE				
Residential Uses (acres)[2]	***3,220 ac***	***86,050 ac***	***86,970 ac***	***93,930 ac***
Dwelling Units (du)	*4,890 du*	*75,590 du*	*71,370 du*	*69,370 du*
Population (persons)	*13,070 pers*	*245,670 pers*	*233,330 pers*	*228,220 pers*
Average Residential Density (du/ac)	*1.50 du/ac*	*0.88 du/ac*	*0.82 du/ac*	*0.74 du/ac*
Natural Resource Uses (acres)[4]	***239,430 ac***	***205,840 ac***	***204,600 ac***	***201,560 ac***
Employment Generated (jobs)	*11,400 jobs*	*115,620 jobs*	*107,660 jobs*	*98,800 jobs*
Open Space (acres)[4]	***109,290 ac***	***0 ac***	***0 ac***	***120 ac***
Subtotal	***351,940 ac***	***291,890 ac***	***291,570 ac***	***295,610 ac***
INTERFACE/WILDLAND				
Residential Uses (acres)[2]	***49,930 ac***	***2,239,300 ac***	***2,225,960 ac***	***2,209,050 ac***
Dwelling Units (du)	*10,730 du*	*92,890 du*	*85,880 du*	*79,510 du*
Population (persons)	*28,710 pers*	*301,850 pers*	*280,710 pers*	*261,680 pers*
Average Residential Density (du/ac)	*0.21 du/ac*	*0.04 du/ac*	*0.04 du/ac*	*0.04 du/ac*
Natural Resource Uses (acres)[4]	***5,960 ac***	***14,180 ac***	***13,910 ac***	***15,110 ac***
Employment Generated (jobs)	*90 jobs*	*2,480 jobs*	*2,280 jobs*	*2,320 jobs*
Open Space Uses (acres)[4]	***631,750 ac***	***52,660 ac***	***53,440 ac***	***56,310 ac***
Subtotal	***631,750 ac***	***2,306,140 ac***	***2,293,310 ac***	***2,280,470 ac***
VACANT / OPEN SPACE				
Open Space (acres)[5]	*2,858,620 ac*	*1,276,700 ac*	*1,287,370 ac*	*1,288,610 ac*
Subtotal	***2,858,620 ac***	***1,276,700 ac***	***1,287,370 ac***	***1,288,610 ac***
GRAND TOTALS acres	***4,019,240 ac***	***4,019,240 ac***	***4,019,240 ac***	***4,019,240 ac***
dwelling units	***207,790 du***	***524,600 du***	***516,790 du***	***519,580 du***
population	***556,730 pers***	***1,707,660 pers***	***1,693,170 pers***	***1,711,440 pers***
employment	***107,890 jobs***	***600,300 jobs***	***516,790 jobs***	***644,750 jobs***
jobs:housing ratio[6]	***0.52 jobs/du***	***1.14 jobs/du***	***1.10 jobs/du***	***1.24 jobs/du***

Footnotes:

1. CURRENT GP = Current (*2009* ~~2008~~) General Plan; GP/GPA960 = the current (*2009* ~~2008~~) General Plan with the changes proposed under GPA No. 960 made to it; and, TOT CULM GP = the current (*2009* ~~2008~~) General Plan, plus the GPA No. 960 changes, as well as the changes proposed by the existing GPAs approved or applied for through the end of 2009 (see Table 5.5-A). Also see footnotes to Table 5.5.B for additional notes on land use descriptors.
2. Residential Uses encompass: Urban/Suburban: LDR, MDR, MHDR, HDR, VHDR and HHDR (all CD Foundation); Rural/Agricultural: EDR, RC-EDR, VLDR, RC-VLDR and RC-LDR; Interface/Wildland: RR, RD, RM and OS-RUR.
3. Commercial & Industrial Uses encompass: CR, CT, CO, LI, HI, BP, CC and MUPA. Public Facilities & Infrastructure Uses encompass: PF, FWY and MISC. (FWY and MISC are not LUDs, rather they denote existing uses of land and/or GIS mapping categories only.)
4. Natural Resource Uses encompass: Rural/Agricultural: AG and OS-MIN; Interface/Wildland: OS-REC.
5. Open Space encompasses: OS-C, OS-CH, OS-W and VAC (VAC is an existing use of land designation, not a General Plan LUD).

6. Jobs/housing balance value from proposed Appendix F-1 and calibrated off the Board-approved RCP-10 SED data set used throughout the rest of this EIR for demographic values.

Source: SCAG, 2008. County Center for Demographic Research, 2010. Riverside County Planning Dept., Project application materials, 2013.

In terms of employment, build out of the current General Plan would also result in a roughly six-fold increase in the number of jobs available within Riverside County (from over 100,000 to nearly 600,000). This increase is cumulatively significant and was addressed under EIR No. 441 certified for the 2003 RCIP General Plan. Under the LUD changes proposed for GPA No. 960, the total number of jobs at build out would actually decrease slightly (to *566,000* ~~562,000~~). Thus, the project's incremental contribution to employment would be insubstantial. Under the cumulative build out scenario, the total number of jobs available from non-residential land uses (commercial, industrial, public facilities and natural resources) would also be slightly less (1.3%) than that of the current General Plan. When compared to the reduced growth potential of GPA No. 960, the cumulative scenario proposes greater growth and economic development from non-residential land uses through 25,000 additional jobs.

Overall, the land use reductions associated with either the project or the cumulative scenario would each contribute to fewer employment opportunities within Riverside County. This would worsen the jobs-to-housing imbalance, causing more people to leave Riverside County on a daily basis for employment. These commuters would increase in daily traffic, resulting in increased circulation impacts and contributing to air pollution in the region.

Compared to existing levels, the additional homes and population accommodated by the project, GPA No. 960, as well as those proposed under the cumulative build out scenario, would each contribute substantially to cumulatively significant direct and indirect population growth. In addition, the reduced numbers of jobs proposed under each of these two scenarios, particularly in relation to the large numbers of homes proposed, would also contribute substantially to the jobs/housing imbalance within Riverside County.

c. Impacts

Future development accommodated by the project will contribute incrementally to cumulative population and housing impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Substantial Impacts

- Induce substantial population growth within Riverside County, both directly (e.g., by proposing new homes and businesses) and indirectly (e.g., through the extension of roads and other infrastructure). This is particularly true of the new homes that would be constructed within previously vacant portions of Riverside County.

- Increase in the jobs-housing imbalance due to the construction of additional homes in excess of an equivalent number of employment-generating land uses (commercial, industrial, public facilities, etc.)

(2) Non-Substantial Incremental Impacts

- Small number of homes and their residents will be displaced where new development, particularly new highways and major roadways, is constructed on previously developed lands. Such displacements would be insubstantial, however, because of the existing and future housing inventories available within Riverside County for replacement. Displacement would not necessitate the construction of additional replacement housing elsewhere.

- As a result of population growth and new homes, in particular, the amount of roadways, storm drains, water reservoirs and storage tanks, pipelines, transmission lines and other infrastructure needed within Riverside County would also increase.

d. Mitigation

As described in detail in Section 4.3.4, a variety of existing regulations and policies would be implemented to avoid, reduce and minimize adverse impacts to population and housing. These include the following:

- General Plan Policies: LU 5.1, 5.2, 8.1, 9.4; C 1.1, 1.4, 1.5, 2.4, 3.16 and 7.9. See Section 4.3.4 for text of each.

- Riverside County Climate Action Plan: Proposed in conjunction with GPA No. 960. See Section 4.7.3 for full details.

e. Significance

The analysis above indicates that future development consistent with any of the General Plan build out analyzed, including the proposed project (GPA No. 960), would contribute mostly non-substantially to incremental impacts related to population and housing issues. However, even with mitigation, the project would contribute substantially to significant cumulative impacts stemming from the inducement of substantial population growth directly and indirectly. Build out of the cumulative General Plan scenario would do likewise. Due to the inherently growth-inducing and growth-accommodating nature of a General Plan, there is no feasible mitigation to fully reduce these cumulative impacts to below the level of significance. Thus, even though project effects would be individually limited, GPA No. 960's incremental contribution to cumulative housing and population impacts would be significant and unavoidable. Build out of the cumulative General Plan scenario would also result in significant and unavoidable cumulative impacts to population and housing within Riverside County.

3. Cumulative Effects on Aesthetics and Visual Resources

Section 4.4 (Aesthetics and Visual Resources) details the existing aesthetic and visual resources within Riverside County. It also analyzes aesthetic impacts that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation necessary to ensure impacts are less than significant. As a result, areas already covered in Section 4.4 are not repeated here.

As noted in Section 4.4, aesthetic and visual resources include scenic vistas and viewsheds, scenic highways and scenic/visual resources, such as trees, rock outcroppings and elements of the built environment like historic buildings. It also addresses light and glare, which can adversely affect visual resources, ecosystems and the night-time use of the Palomar Astronomical Observatory (which relies on dark skies for scientific purposes). Section 4.4 includes a summary of Riverside County's aesthetic resources by "visual analysis area" (in Table 4.4-A), it also discusses glare, nighttime light and (in Table 4.4-B) scenic highways throughout Riverside County.

a. Existing Conditions

Visual Character: Because of its large size, Riverside County offers a great variety of visual resources, including scenic vistas, viewsheds and panoramic natural landscapes, as well as built environments, old and new, including numerous architectural features. Since 1999, when the Existing Setting Report was prepared for EIR No. 441

(for the 2003 RCIP General Plan), Riverside County's visual character has undergone substantial changes, particularly in the urban/suburban fringes, as growth fueled the urbanization of existing suburban areas and the conversion of open, vacant lands to developed uses. According to the State of California, Riverside County and its cities accounted for nearly a quarter of all new urban areas within California between 2006 and 2008. Between 2000 and 2008, the California Department of Conservation estimates that "developed or built-up land" in Riverside County increased by nearly 61,000 acres, much of it concentrated around existing city centers and other urban centers. Areas that have had considerable amount of visual changes associated with growth are noted in Table 4.4-A.

Nighttime Light, Glare and Palomar Observatory: Light pollution, i.e., the alteration of natural light levels in the outdoor environment due to artificial light sources, is most commonly taken to mean excessive or obtrusive artificial light. Artificial light pollution also includes "sky glow, glare, light trespass, light clutter, decreased visibility at night and energy waste," as well as incidental or obtrusive outdoor lighting, such as glare (visual impairment), trespass into areas not needing lighting, use when or where lighting is not needed and disturbance of the natural nighttime landscape. As a result, the visibility of stars and other natural night sky phenomena is decreased. Night lighting and glare can affect human vision, navigation and other activities. It also can lead to skyglow, which interferes with the operation of astronomical observatories, as well as with nocturnal wildlife, particularly night-hunting or foraging animals, such as owls and rodents.

A major scientific resource, the Palomar Observatory is located in San Diego County approximately 5.5 miles south of the Riverside County border. In order to minimize effects of nighttime light pollution within the region surrounding the observatory, the County of Riverside enforces Ordinance No. 655 (Regulating Light Pollution). This ordinance establishes two zones for specific lighting controls based on distance from the observatory: a 15-mile-radius sphere is denoted as "Zone A" and a "Zone B" encompasses a 15- to 45-mile radius from the observatory (see Figure 4.4.1 in Section 4.4). Special lighting restrictions apply within these zones.

Scenic Vistas, Highways and Roadways: Scenic vistas and natural features, including low-lying valleys, mountain ranges, ridgelines, rock formations, rivers and lakes are often enjoyed via Riverside County's many roadways. Due to the visual significance of many of these areas, certain roadways within Riverside County have been officially recognized as either "eligible" or "designated" State or County scenic highways. Section 4.4 includes Table 4.4-B and Figure 4.4.2 describing these highways. Development along designated scenic highways and roadways is managed to preserve the areas' scenic qualities.

b. Future Conditions

Light and Glare: Table 5.5-F (Cumulative Palomar Lighting Zone Effects), below, shows how each of the General Plan build out scenarios, including cumulative, would incrementally affect light and glare levels within Riverside County relative to the Palomar Special Lighting Zones established under Riverside County Ordinance No. 655. Due to its proximity, excessive lighting from future development occurring within Zone A in particular has the greatest potential to incrementally affect observatory operations. Because of the additive nature of light, such incremental contributions would be cumulatively significant.

As shown in the table, the main changes to the General Plan as a result of the project, GPA No. 960, would spare roughly 6,200 acres of land in Zone A, the most light-sensitive zone, by preserving this land as vacant or open space and reducing development potential in interface/wildlands by an equivalent amount. Within Zone B, the project's changes would add *over* ~~nearly~~ 4,000 acres of development potential within built areas (urban/suburban, rural/agriculture and public facilities). This increase, however, is offset by a reduction of nearly 8,000 acres in interface/wildlands development potential and an increase of over 4,000 acres of vacant/open space areas.

Nevertheless, overall the project's incremental contribution to cumulative light and glare impacts would be considerable.

Table 5.5-F: Cumulative Palomar Lighting Zone Effects

Ordinance No. 655 (Palomar Observatory) Lighting Zones[1]	Urban/ Suburban (acres)	Rural/ Agriculture (acres)	Interface/ Wildlands (acres)	Vacant / Open Space (acres)	Public Facilities (acres)	Totals[3] (acres)
Zone A (0 to 15-mile radius)						
Existing Total	**3,250**	**6,700**	**6,860**	**112,500**	**760**	**130,070**
CURR GP Total	1,300	7,610	91,790	16,940	0	117,640
GPU / GPA 960 Δ (Change)[2]	0	0	- 6,250	+ 6,250	0	0
CULM GP Δ (Change)[2]	+ 60	+ 6,840	- 6,900	0	0	0
Zone B (15 to 45-mile radius)						
Existing Total	**43,270**	**101,340**	**60,990**	**855,500**	**19,750**	**1,080,850**
CURR GP Total	*64,110*	*115,900*	*375,510*	*455,630*	*13,080*	*1,024,230*
GPU / GPA 960 Δ (Change)[2]	*+ 2,290*	*+ 1,010*	*- 7,860*	*+ 4,040*	*+ 680*	*+ 160*
CULM GP Δ (Change)[2]	*+ 3,610*	*- 810*	*- 3,500*	*+ 810*	*- 40*	*+ 70*
No Zone						
Existing Total	**32,460**	**131,390**	**682,240**	**1,827,620**	**134,610**	**2,808,320**
CURR GP Total	*40,070*	*167,570*	*1,785,660*	*859,920*	*24,150*	*2,877,370*
GPU / GPA 960 Δ (Change)[2]	*+ 760*	*- 1,330*	*+ 500*	*- 260*	*+ 170*	*- 160*
CULM GP Δ (Change)[2]	*+ 5,930*	*- 1,740*	*- 5,190*	*+ 140*	*+ 790*	*- 70*
TOTAL AREA						
Existing Total	**78,980**	**239,430**	**750,090**	**2,795,620**	**155,120**	**4,019,240**
CURR GP Total	105,480	291,080	2,252,960	1,332,490	37,230	4,019,240
GPU / GPA 960 Δ (Change)[2]	+ 3,050	- 320	- 13,610	+ 10,030	+ 850	0
CULM GP Δ (Change)[2]	+ 9,600	+ 4,290	- 15,590	+ 950	+ 750	0

Footnotes:
1. The Palomar Astronomical Observatory is located in San Diego County, approximately 5.5 miles south of the Riverside County border.
2. These are the acreages that indicated scenario would contribute to build out impacts, *in addition* to those associated with build out of the current (*2009* ~~2008~~) General Plan (which are shown under "CURR GP Total"). *Also see Tables 2.1, 2.2 and 2.3 in Appendix EIR-11 for more detailed data.*
3. For details on the specifics of each scenario, see Table 5.5-D. All values rounded to nearest 10 acres.

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Palomar Special Lighting Zones) and Project Application Data, 2013 *and 2014*.

Under the Cumulative scenario, General Plan build out would result in nearly an additional 7,000 acres of development within Rural/Agricultural areas in Zone A and roughly 3,600 acres of Urban/Suburban in Zone B, with corresponding decreases in development in Interface/Wildland areas. Lastly, for all of the build out scenarios, the largest amount of vacant lands lost would be in Zone B, particularly due to the roughly 300,000-acre increase in Interface/Wildland areas that would result under the current General Plan, as well as the other two build out scenarios. For these reasons, all of the build out scenarios would have cumulatively considerable impacts on light and glare effects.

Scenic Vistas, Highways and Roadways: Growth pressures within Riverside County will result in development that causes the incremental loss, fragmentation and degeneration of the natural viewsheds and vistas within Riverside County, regardless of the General Plan build out scenario. To examine the potential effects of General Plan build out on scenic highways, spatial analysis was performed to determine the amount of future development that could occur within proximity of these resources under each of the scenarios examined. As shown in Table 5.5-G (Cumulative Scenic Highway Effects), growth within Riverside County would result in encroachment of developed uses into areas within the viewsheds of a variety of State- and County-designated and eligible scenic highways and related scenic vistas.

Per Table 5.5-G, build out of the existing General Plan will contribute incrementally to the loss of natural scenic resources and viewsheds along scenic highways and vistas within Riverside County and result in varying degrees

of incremental impacts, depending on the size, scope and location of the incremental development proposed. Within proximity to State-designated scenic highways, interface/wildland areas would see the greatest increase in development potential (roughly 10,000 acres); rural/agricultural areas would also see a roughly three-fold increase as well. The amount of land devoted to public facilities would decrease slightly, but the increased development would occur mainly at the expense of available vacant and open space lands. Since much more land is in proxymity to State-eligible and County-eligible scenic highways, this pattern of development potential increasing in urban/suburban and rural/agricultural areas at the expense of vacant and open space lands is even more pronounced. In particular, development potential within interface/wildland areas greatly increases under the existing General Plan. Proposed changes from both the project and for the cumulative scenario slightly lessen these increases, but the overall impact on scenic resources is still significant. Similar trends occur for both the project and cumulative General Plan build out scenarios. In areas with scenic resources, development potential for urban/suburban uses would increase by roughly 9% and 6%, respectively. For these reasons, even without the proposed project, build out of the General Plan would result in cumulatively significant impacts to scenic highways and vistas. Overall, however, both the project and cumulative General Plan build out scenarios would also contribute significantly to cumulative impacts to scenic vistas, viewsheds and scenic highway views.

c. Impacts

Future development accommodated by the project will contribute incrementally to cumulative aesthetic impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

Table 5.5-G: Cumulative Scenic Highway Effects

Land Uses in Proximity[1] to	Urban/ Suburban (acres)	Rural/ Agriculture (acres)	Interface/ Wildlands (acres)	Vacant / Open Space (acres)	Public Facilities (acres)	Totals[3,4] (acres)
State Designated Scenic Highways[2]						
Existing Total	**1,840**	**920**	**2,860**	**31,670**	**1,030**	**38,320**
CURR GP Total	1,090	3,290	10,400	21,330	650	36,760
GP*U* / *GPA* 960 Δ (Change)[3]	0	0	+ 30	- 40	0	- 10
CULM GP Δ (Change)[3]	0	+ 170	- 170	0	0	0
State Eligible Scenic Highways[2]						
Existing Total	**6,570**	**7,640**	**2,940**	**21,570**	**2,000**	**40,720**
CURR GP Total	10,720	11,730	12,400	8,020	110	42,980
GP*U* / *GPA* 960 Δ (Change)[3]	+ 700	- 620	- 140	- 40	+ 120	+ 20
CULM GP Δ (Change)[3]	*+ 240*	*- 210*	*- 140*	*+ 110*	0	0
County Eligible Scenic Highways[2]						
Existing Total	**4,870**	**17,460**	**2,700**	**86,400**	**3,050**	**114,480**
CURR GP Total	8,820	17,870	74,040	16,600	2,590	119,920
GP*U* / *GPA* 960 Δ (Change)[3]	+ 1,160	- 1,490	- 750	+ 900	+ 170	- 10
CULM GP Δ (Change)[3]	+ 880	+ 1,370	- 2,560	+ 50	+ 170	- 90
Not in Scenic Highway Proximity						
Existing Total	**65,700**	**213,410**	**741,590**	**2,655,980**	**149,040**	**3,825,720**
CURR GP Total	84,850	258,190	2,156,120	1,286,540	33,880	3,819,580
GP*U* / *GPA* 960 Δ (Change)[3]	+ 1,190	+ 1,790	- 12,750	+ 9,210	+ 560	0
CULM GP Δ (Change)[3]	*+ 8,480*	*+ 2,960*	*- 12,720*	*+ 790*	+ 580	+ 90
TOTAL AREA						
Existing Total	**78,980**	**239,430**	**750,090**	**2,795,620**	**155,120**	**4,019,240**
CURR GP Total	105,480	291,080	2,252,960	1,332,490	37,230	4,019,240
GP*U* / *GPA* 960 Δ (Change)[3]	+ 3,050	- 320	- 13,610	+ 10,030	+ 850	0
CULM GP Δ (Change)[3]	+ 9,600	+ 4,290	- 15,590	+ 950	+ 750	0

Footnotes:

1. Within 2,500 feet (roughly one-half mile).
2. Encompass the following roadways; see Table 4.4-B (section 4.4) for descriptions of the specific segments.
   State Designated Scenic Highways: Portions of State Routes 62, 74 and 243.
   State Eligible Scenic Highways: Portions of Interstates 10 and 15, and State Routes 71, 74, 79, 91 and 111.
   County Eligible Scenic Highways: Portions of Interstates 10 and 215, U.S. Highway 95, State Route 79, and portions of Dillon Rd., Oak Glen Rd., Beaumont Ave., San Timoteo Canyon Rd., Redlands Blvd., Gilman Springs Rd., Ramona Expressway, Cajalco Rd., El Sobrante Rd., Mockingbird Canyon Rd. and La Sierra Ave.
3. These are the acreages that indicated scenario would contribute to build out impacts, *in addition* to those associated with build out of the current (*2009* ~~2008~~) General Plan (which are shown under "CURR GP Total"). *Also see Tables 4.1, 4.2 and 4.3 in Appendix EIR-11 for more detailed data.*
4. For details on the specifics of each scenario, see Table 5.5-D. All values rounded to nearest 10 acres.

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Scenic Highways) and Project Application Data, 2013 *and 2014*.

(1) Cumulatively Considerable Impacts

- In addition to infill, future development would result in the physical conversion of open space, vacant and agricultural lands to more urban types of uses, incrementally affecting scenic vistas and leading to cumulatively substantial impacts to these resources. See similar discussion under Impact 4.4.A.

- The extension of roadways and infrastructure into previously undeveloped areas, particularly into undisturbed wildlands, would add incrementally to visual impacts. Long, linear improvements, such as roads and powerlines, can be particularly noticeable in open vistas. Where located in, or immediately adjacent to, large expanses of scenic open space, future development could have major visible aesthetic effects, particularly for sites with limited or no existing access ways that would require road construction, leading to cumulatively considerable impacts.

- Development would incrementally damage scenic resources, including, but not limited to, trees, rock outcroppings and historical buildings within a State scenic highway. Where located along a designated or eligible scenic highway, scenic vista or other scenic resource, these incremental impacts could substantially impair the aesthetics of the resource. See similar discussion under Impact 4.4.B.

- Future development would create new sources of light and glare that would adversely affect day or nighttime views in the areas. Lighting associated with higher intensity and density uses will increase nighttime light levels and daylight glare effects on sensitive areas, such as residences and natural habitat areas. See similar discussion under Impact 4.4.D.

(2) Non-Substantial Incremental Impacts

- Future development per any of the build out scenarios would contribute incrementally to changing the visual character of Riverside County over time.

- Development would also contribute to the overall increase in light levels and skyglow within the county. Where development occurs in Special Lighting Zone A or B, additional light sources would contribute incrementally to interference with the nighttime use of Palomar Observatory.

d. Mitigation

As described in detail in Section 4.4.6, a variety of existing regulatory compliance and specific mitigation measures would be implemented to avoid, reduce and minimize adverse cumulative impacts to aesthetics and visual resources within Riverside County. These include the following items:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.4.6 for detailed information on how each of the following items contributes to avoiding, reducing or minimizing cumulative impacts.

- California Scenic Highway Program (CalTrans)
- Ordinance No. 655 - Regulating Light Pollution
- Ordinance No. 460 - Regulating the Division of Land
- Ordinance No. 461 - Road Improvement Standards and Specifications
- Ordinance No. 655 - Regulating Light Pollution
- Ordinance No. 915 - Regulating Outdoor Lighting
- Riverside County Design Guidelines

Key General Plan Policies: See Section 4.4.3 for text of each policy.

- Land Use Policies: LU 4.1, 4.5, 14.3 - 14.8, 16.4, 16.5, 16.12, 19.1, 28.6, 28.10, 29.9, 30.8 and 31.5.
- Circulation Policies: C 5.3, 19.1 and 20.1.
- Open Space Policies: OS 9.3 and 9.4.

(2) CEQA Mitigation

Existing Mitigation Measures: As part of EIR No. 441 certified for the RCIP General Plan adopted in October 2003, the following mitigation measures (MMs) would apply for future development.

- **Existing MM 4.4.1A:** Development projects shall be subject to the requirements of all relevant guidelines, including the community center guidelines, Riverside County supervisorial district guidelines and all applicable standards, policies and/ or regulations of the County of Riverside or other affected entities pertaining to scenic vistas and aesthetic resources. Factors considered in these guidelines include the scale, extent, height, bulk or intensity of development; the location of development; the type, style and intensity of adjacent land uses; the manner and method of construction, including materials, coatings and landscaping; the interim and/or final use of the development; the type, location and manner of illumination and signage; the nature and extent of terrain modification required; and the potential effects to the established visual characteristic of the project site and identified scenic vista or aesthetic resource.
- **Existing MM 4.4.2A:** Riverside County shall require that sources of lighting within the General Plan area be limited to the minimum standard required to ensure safe circulation and visibility.
- **Existing MM 4.4.2B:** Riverside County shall require street lighting to be limited to intersections and other locations that are needed to maintain safe access (e.g., sharp curves).

- **Existing MM 4.4.2C:** Riverside County shall require exterior lighting for buildings to be of a low profile and intensity.
- **Existing MM 4.4.2D:** The County [of Riverside] shall establish a liaison with California Institute of Technology [which operates the Palomar Observatory] to ensure "dark skies" preservation procedures are incorporated, as necessary, in future [Riverside] County ordinances.
- **Existing MM 4.4.2E:** The County [of Riverside] shall participate in Mount Palomar [*sic*] Observatory's "dark sky" conservation area.

New Mitigation Measures: As part of EIR No. 521, the following new mitigation measure (MM) is proposed to reduce aesthetic impacts.

- **New MM 4.4.A-N1:** No development shall be approved for parcels without adequate legal access and adequate physical access. Adequate and accessible circulation facilities must also exist to meet the demand of the proposed land use.

e. Significance

Implementation of all of the above regulations, General Plan policies and mitigation measures, would be sufficient to ensure that all of the incremental (non-substantial) cumulative impacts listed above would be less than significant. For the substantial impacts listed above, however, even with the existing and additional mitigation indicated, the cumulative impacts associated with build out of any of the above General Plan scenarios would be significant and unavoidable.

4. Cumulative Effects on Agriculture and Forestry Resources

Section 4.5 (Agricultural and Forestry Resources) of this EIR discusses existing agricultural and forestry resources within Riverside County, as well as the sources used (and any updates made to them) for this data. The section also analyzes the agricultural impacts that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both through regulatory compliance and CEQA-specific mitigation) necessary to ensure impacts are less than significant. As a result, areas already covered in Section 4.5 are not repeated here; see that section directly for additional resource details.

Included in Section 4.5 are data and statistics on cultivated crops, State-designated farmlands and forestry areas, specifically: Table 4.5-A **(**Cultivated Crop Production Statistics), Table 4.5-B **(**Other Agricultural Product Valuation Data), Table 4.5-C **(**Crop Valuation by Agricultural District), Table 4.5-D (State-Designated Farmland Data for Riverside County), Table 4.5-E (Project Effects on Agriculture Land Use Designations in the General Plan), Table 4.5-F (Project Effects on Lands in Agricultural Use), Table 4.5-G (Effects on State-Designated Farmlands) and Table 4.5-H (Project Relationship to Existing Agricultural Preserves). It also includes Figure 4.5.1 (Agricultural Resources Map) and Figures 4.5.2 and 4.5.3 (High-Elevation Forestry Resources for Western and Eastern Riverside County, respectively).

a. Existing Conditions

Agriculture: The wide variety of climates and soil types within Riverside County allows a diverse array of crops to be grown. Agricultural resources include lands cultivated for crops for both human and animal use, providing livestock forage or as a source of fiber or other raw materials, as well as non-cultivation (ranch) activities, such as

livestock for meat, milk and dairy products, and fiber and other non-edible products (wool, leather, etc.). Also in this category are aquaculture (fish farms) and poultry (producing poultry meat, eggs, chicks) and other products. Historically, agricultural production has occurred in western Riverside County along Temescal and Perris valleys, though both areas have been under increasing urbanization pressures in recent years. Agriculture still thrives in southwestern Riverside County, particularly in the wine country of Temecula Valley. It is even more prominent in eastern Riverside County in areas such as the Coachella Valley and, in particular, the Palo Verde Valley area. Although there are state-designated Farmlands (i.e., Prime Farmland, Unique Farmland and Farmland of Statewide Importance) throughout Riverside County, agricultural activities are not limited to these areas.

Forestry: There is no commercial forestry or timber production industry within Riverside County other than Christmas tree farms of nursery stock production (that is, cultivated rather than wild-harvested plants). Riverside County's forestry resources do, however, play a vital role in establishing the character of Riverside County. The Cleveland National Forest frames southwestern Riverside County and the San Bernardino National Forest frames edges of eastern Riverside County; both forests fall within the Sierran montane range. These ranges are characterized by winter snows and summer fires, large conifers (pine and fir trees) and a great diversity of animal species. Per the State of California, no "California forest land" ownership, either public or private, is mapped for Riverside County, although some coniferous forests do occur within Riverside County. At lower elevations (generally below 5,000 feet), these forests commonly border mixed evergreen forest, oak woodland and chaparral. According to Cal Fire (2003), there are no fixed commercial timber operations subject to a Timber Harvesting Plan in Riverside County. The County of Riverside does, however, participate in a "woody biomass utilization program" funded by the U.S. Forest Service and run by CalFire (Riverside Unit).

b. Future Conditions

Spatial analysis was performed to examine the cumulative results of General Plan build out on agricultural and forestry resources. To encapsulate the scope of impacts resulting from build out of the Riverside County General Plan, the various General Plan cumulative build out scenarios were analyzed against the state-mapped farmlands (i.e., Figure 4.5.1) and mature forests within Riverside County (i.e., Figures 4.5.2 and 4.5.3). Table 5.5-H (Cumulative Farmland Effects) shows the cumulative conditions for impacts to farmlands for the three General Plan build out scenarios examined in this section (CURR GP, GPU/GPA960 and CULM GP, see Section 5.5.1 for specifics on each).

Cumulative effects of General Plan build out were compared to the farmland mapping data from the State Department of Conservation and several trends were noted. The amount of Prime Farmland lost to urban/suburban development would increase nearly 250% under the existing General Plan. For both the project (GPU/GPA960) and cumulative (CULM) General Plan build out scenarios, Prime Farmlands lost to urban/suburban development would increase by roughly 12% and *20%* ~~23%~~, respectively. Both these losses are cumulatively considerable. Rural/agricultural lands designated as Prime Farmland would also be lost *as the County develops over time*, though in incrementally insignificant amounts ~~(1.4% and 2.1%, respectively)~~. *However, compared to the existing General Plan, both the project and cumulative General Plan scenarios would affect slightly (1-2%) less Prime Farmland.* The amount of vacant/open land would decrease roughly 80% under the existing General Plan, but *either* the project *or* ~~and~~ cumulative scenario~~s~~ would lessen these losses by roughly 10% ~~each~~. The other types of designated farmlands show similar trends. These development trends would have similar incremental effects on existing agricultural preserves and result in incremental land use conflicts between agricultural and non-agricultural uses.

For forestry resources, see Table 5.5-M (Cumulative Biological Effects) for data on cumulative effects to woodland and forest acreage throughout Riverside County. Since forestry resources within Riverside County are tracked according to these habitat types, the table is not repeated here. Data in Table 5.5-M indicate that land use changes occurring as the General Plan builds out (regardless of scenario) will affect only sporadic or occasional

stands of forest vegetation at altitudes above 5,000 feet sea level. This includes stands of "Montane Hardwood" and "Montane Hardwood-Conifer Forest," primarily in the San Jacinto Mountains of central Riverside County. None of these forest resources, however, supports industrial or commercial timber production. Overall, neither the project (GPU/GPA960) nor the cumulative (CULM) build out scenarios would result in significant cumulative forestry impacts.

Table 5.5-H: Cumulative Farmland Effects

Type of Farmland or Other Land	Urban/ Suburban (acres)	Rural/ Agriculture (acres)	Interface/ Wildlands (acres)	Vacant / Open Space (acres)	Public Facilities (acres)	Totals[1] (acres)
Prime Farmland						
Existing Total	**2,520**	**95,930**	**340**	**2,770**	**1,300**	**102,860**
CURR GP Total	*8,440*	*88,240*	*3,760*	550	*140*	101,140
GPU / GPA 960 Δ (Change)[2]	+1,050	-1,230	*+180*	+60	+20	*+80*
CULM GP Δ (Change)[2]	*+1,930*	*-1,790*	*+120*	+50	*+10*	*+320*
Farmland of Statewide Importance						
Existing Total	**640**	**34,310**	**130**	**700**	**290**	**36,070**
CURR GP Total	*1,420*	*33,300*	*1,710*	160	*10*	*36,590*
GPU / GPA 960 Δ (Change)[2]	+460	*- 570*	*+90*	+20	+10	*+10*
CULM GP Δ (Change)[2]	*+240*	*-440*	+140	+50	+10	0
Farmland of Local Importance						
Existing Total	**6,890**	**42,830**	**4,740**	**99,870**	**3,030**	**157,360**
CURR GP Total	*24,390*	*56,680*	*43,100*	11,620	*3,750*	*139,550*
GPU / GPA 960 Δ (Change)[2]	+300	-520	-650	+820	*+210*	*+160*
CULM GP Δ (Change)[2]	*+1,450*	*-50*	*-1,160*	*+110*	*-10*	+340
Unique Farmland						
Existing Total	**1,090**	**26,080**	**1,130**	**2,870**	**270**	**31,440**
CURR GP Total	*980*	*15,920*	*14,070*	560	20	31,560
GPU / GPA 960 Δ (Change)[2]	*+470*	-450	-30	0	0	*-10*
CULM GP Δ (Change)[2]	*+1,120*	*-630*	-110	+130	0	*+510*
Grazing Land						
Existing Total	**4,830**	**3,410**	**2,400**	**83,780**	**1,160**	**95,580**
CURR GP Total	3,440	3,420	46,460	13,050	1,580	*67,970*
GPU / GPA 960 Δ (Change)[2]	+260	-220	-610	+580	-10	0
CULM GP Δ (Change)[2]	*+220*	*+950*	*-1,840*	*+670*	*0*	*0*
Water / Waterbodies						
Existing Total	**60**	**90**	**450**	**56,670**	**60**	**57,330**
CURR GP Total	20	110	1,110	55,790	20	57,050
GPU / GPA 960 Δ (Change)[2]	0	+50	0	+200	0	+250
CULM GP Δ (Change)[2]	0	+200	-200	+80	0	+80
Urban and Built-Up Lands						
Existing Total	**34,420**	**7,700**	**10,330**	**7,030**	**8,080**	**67,560**
CURR GP Total	*39,960*	*22,270*	6,750	860	*6,140*	75,980
GPU / GPA 960 Δ (Change)[2]	*-180*	*0*	+30	-40	+220	+30
CULM GP Δ (Change)[2]	*+210*	-70	*-140*	0	*0*	0
Other Land						
Existing Total	**24,080**	**30,930**	**57,300**	**702,620**	**12,410**	**827,340**
CURR GP Total	*24,330*	*70,300*	433,380	259,320	*9,630*	*796,970*
GPU / GPA 960 Δ (Change)[2]	+700	+2,610	-12,380	*+9,470*	+450	*+850*
CULM GP Δ (Change)[2]	*+1,650*	*+5,890*	*-7,030*	*-60*	*-80*	*+370*
Areas Not Mapped						
Existing Total	**4,770**	**123,970**	**671,800**	**1,837,380**	**5,780**	**2,643,700**
CURR GP Total	2,060	8,590	1,755,380	937,760	8,710	2,712,500
GPU / GPA 960 Δ (Change)[2]	0	0	+510	-1,880	0	-1,370

Type of Farmland or Other Land	Urban/ Suburban (acres)	Rural/ Agriculture (acres)	Interface/ Wildlands (acres)	Vacant / Open Space (acres)	Public Facilities (acres)	Totals[1] (acres)
CULM GP Δ (Change)[2]	+1,910	0	-2,660	-1,280	+410	-1,620
TOTALS by Land Use Group						
Existing Total	**79,300**	**365,250**	**748,620**	**2,793,690**	**32,380**	**4,019,240**
CURR GP Total	*105,040*	*298,830*	*2,305,720*	1,279,670	*29,980*	4,019,240
GP*U* / *GPA* 960 Δ (Change)[2]	+3,060	-330	-12,860	*+9,230*	*+900*	0
CULM GP Δ (Change)[2]	*+8,730*	*+4,060*	*-12,880*	*-250*	*+340*	*0*

Footnotes:
1. For details on the specifics of each scenario, see Table 5.5-D. All values rounded to nearest 10 acres.
2. These are the acreages that indicated scenario would contribute to build out impacts, *in addition* to those associated with build out of the current (*2009* ~~2008~~) General Plan (which are shown under "CURR GP Total"). *Also see Tables 5.1, 5.2, 5.3 and 5.4 in Appendix EIR-11 for more detailed data.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (State Farmland Mapping & Monitoring Program) and project application data, 2013 *and 2014*.

c. Impacts

Future development accommodated by the project will contribute incrementally to cumulative agricultural and forestry impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Direct loss due to the incremental conversion of state-designated Farmlands to non-agricultural uses over time. See discussion under Impact 4.5.A.
- Growth pursuant to General Plan build out (any scenario) would indirectly result in additional development and infrastructure demand that would further conversion of designated Farmlands to urban uses and result in other changes in the existing environment leading to additional Farmland conversion.
- Some incremental growth would encroach on or conflict with existing agricultural zoning, agricultural uses, land subject to a Williamson Act contract and land within Riverside County Agricultural Preserves. See discussion under Impact 4.5.B.
- Additional growth would also result in further conversion of agricultural lands to urban uses, encroach on existing agricultural activities and mapped farmlands, and result in other changes in the existing environment leading to additional farmland conversion.
- Growth would result in development of non-agricultural uses within 300 feet of agriculturally zoned property, as well as other environmental changes that, due to their location or nature, would result in the conversion of farmland to non-agricultural use.

(2) Non-Substantial Incremental Impacts

- Encroachment of residential and other urban-density land uses into agricultural areas would result in incremental impacts due to agricultural nuisances (dust, odors, noise, flies, soil or groundwater contamination, chemical overspray and runoff exposure, etc.).

- For farmers, urban encroachment would adversely affect the efficiency of remaining farming operations due to increased air pollution, livestock predation by pets, crop diseases, etc., as well as water scarcity, theft, crop pilferage, farm trespass and the like.

- Future development would incrementally result in the loss or conversion of forest land to non-forest uses, as well as other changes in the existing environment which, due to their location or nature, could result in forest land conversion as well.

- Growth would indirectly result in additional development and infrastructure demand that would create additional potential for forest land conversion or encroachment of incompatible land uses.

- Growth would also involve other incremental changes that could result in conversion of forest land to non-forest use. This includes incremental loss of oak trees and other mature forest canopy, either through direct take or through indirect causes, such as hydrological changes, etc.

d. Mitigation

As described in detail in Section 4.8.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative agricultural and forestry impacts. These include the following regulatory compliance measures:

Key Regulations and Program: See Section 4.8.3 for details on each regulation.

- California Land Conservation Act (aka "Williamson Act")

- California Timberland Productivity Act California Forest Practice Act

- Ordinance No. 509 - Establishing Agricultural Preserves

- Ordinance No. 559 - Regulating the Removal of Trees

- Ordinance No. 625 - Right To Farm

- Riverside County Rules and Regulations Governing Agricultural Preserves

Key General Plan Policies: See Section 4.8.3 for the text of each policy.

- Land Use Policies: LU 7.6, 7.10, 20.1, 20.2 and 20.4 - 20.11

- Open Space Policies: OS 7.1, 7.3 - 7.5, 8.1, 8.2 and 9.4

e. Significance

The analysis above indicates that future development consistent with any of the General Plan build out analyzed, including the proposed project (GPA No. 960), would contribute non-substantially to incremental impacts to forestry resources and uses in Riverside County. However, even with mitigation, growth within Riverside County pursuant to any of the General Plan build out scenarios, including that of the project (GPA No. 960), would contribute substantially to significant cumulative agricultural impacts. These include direct and indirect

conversion of designated farmlands, as well as encroachment on existing agricultural uses. General Plan build out would also result in the "significant conversion of active agricultural land and agricultural soils to non-agricultural uses." Due to the inherently growth-inducing and growth-accommodating nature of a General Plan, there is no feasible mitigation to fully reduce these cumulative impacts to below the level of significance. Thus, even where impacts from future implementing project effects would be individually limited, GPA No. 960's incremental contribution to cumulative agricultural impacts would be significant and unavoidable.

5. Cumulative Effects on Air Quality

Section 4.6 (Air Quality) of this EIR discusses specifics regarding existing and future air pollution levels within Riverside County. It also analyzes the impacts that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the regulatory mitigation measures that would ensure impacts are less than significant or at least reduced to the extent feasible. Thus, to avoid repetition, information already covered in Section 4.6 is not repeated here. The reader is encouraged to refer back to that section directly for additional details on air pollution.

Section 4.6 of this EIR provides a complete description of the ambient air quality in Riverside County, as well as analysis of the existing and future air quality impacts projected to occur as Riverside County builds out. This data includes Table 4.6-A (Ambient Air Quality Reporting for Criteria Pollutants – SCAB, 2007-2009), Table 4.6-B (Ambient Air Quality Reporting for Criteria Pollutants – SSAB, 2007-2009), Table 4.6-C (Emission Thresholds for Air Basins within Riverside County), Table 4.6-D (Typical Project Construction Emission Estimates), Table 4.6-E (Comparison of Unmitigated Project Operational Emissions – SCAQMD, Table 4.6-F (Comparison of Unmitigated Project Operational Emissions – MDAQMD, Table 4.6-G (Mitigated Net Project Operational Emissions – SCAQMD), Table 4.6-H (Mitigated Net Project Operational Emissions – MDAQMD), Table 4.6-I (Localized Significant Analysis for 5 Acre Site – Construction), Table 4.6-J (Localized Significant Analysis for 5-Acre Site – Operational). It also includes Figure 4.6.1 (Air Basins in Riverside County).

a. Existing Conditions

Riverside County spans three different air basins: South Coast (SCAB), Salton Sea (SSAB) and Mojave Desert (MDAB). The portions of Riverside County within the South Coast and Salton Sea Air Basins are regulated by the South Coast Air Quality Management District (SCAQMD). The easternmost third of the county, within the Mojave Desert Air Basin, is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). Each of the three air basins covering Riverside County have unique characteristics affecting regional air quality. The climate and meteorology of each air basin, as well as their effects on air quality, detailed in Section 4.6.2.

Air pollutant emissions within the air basins are generated from stationary, mobile and natural sources. Stationary sources occur as point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. Area sources are widely distributed and arise from many small emissions. Among others, construction activities that create fugitive dust, such as excavation and grading, contribute to area source emissions. Mobile sources refer to emissions from on- and off-road motor vehicles, including tailpipe and evaporative emissions. On-road sources are vehicles operated on roadways and highways. Off-road sources include vehicles not operated on roads, as well as aircraft, trains and construction equipment. Mobile sources account for the majority of the air pollutant emissions within most air basins. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

To protect the public health and welfare, the federal and state governments identified five criteria air pollutants and a host of air toxics that have established ambient air quality standards through the federal Clean Air Act and the California Clean Air Act. Air pollutants are typically classified as primary or secondary pollutants. The criteria pollutants carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2) and lead (Pb) are considered primary pollutants because they are emitted directly into the atmosphere. Ozone (O_3) is considered a secondary pollutant because it is not directly emitted but formed through a photochemical reaction in the atmosphere when reactive organic gases (ROGs) and nitrogen oxides (NO_X) combine in the presence of sunlight and produce O_3. Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. See Section 4.6.2 for details on each criteria pollutant, as well as discussions of toxic air contaminants (TACs) and odors. See Tables 4.6-A and 4.6-B in Section 4.6 for detailed air quality data for the basins with Riverside County and Section 4.6.4 for specifics on construction, operation and other emissions thresholds.

At the federal level, SCAB is designated as "extreme nonattainment" for ozone and "serious nonattainment" for PM_{10}. SCAB's federal status for CO was recently upgraded from nonattainment to "serious maintenance area." It is also in federal nonattainment for $PM_{2.5}$, but is in attainment for NO_2 and SO_2. At the state level, SCAB is designated "extreme nonattainment" for ozone and also in nonattainment for particulates $PM_{2.5}$ and PM_{10}. It is in attainment for the State of California's CO standard and for SO_2 and NO_2, a subcategory of NO_X. In an effort to monitor the various concentrations of air pollutants throughout the basin, the SCAQMD has divided the region into 38 source receptor areas (SRAs), which are tracked by 32 monitoring stations. Ambient air data are provided in the tables in Section 4.6.2.

MDAB is designated as "severe nonattainment" for ozone, nonattainment for PM_{10}, "unclassified/attainment" for $PM_{2.5}$ and attainment for CO, NO_2 and SO_2 at the federal level and at the state level "moderate non-attainment" for ozone and "nonattainment" for PM_{10} and $PM_{2.5}$. It is in state attainment for CO and NO_2, and attainment/unclassified for SO_2. The MDAQMD also monitors air quality within the MDAB, but does not have a monitoring station within the Riverside County portion of the basin.

In regards to air toxics, CARB has produced a series of estimated inhalation cancer risk maps based on modeled levels of outdoor composite toxic pollutant levels. Its 2010 estimated map indicates the majority of Riverside County is exposed to a theoretical inhalation cancer risk of less than 250 persons per million. However, the northwestern portion of Riverside County that includes portions of the Jurupa, Highgrove, Eastvale, Reche Canyon and Temescal Area Plans are exposed to inhalation cancer risks of greater than 250 persons per million. These risk maps depict theoretical inhalation cancer risk due to modeled outdoor toxic pollutant levels and do not account for cancer risk due to other types of exposure. The largest contributors to inhalation cancer risk are diesel engines.

b. Future Conditions

The location and densities of development and other human activities affect the amount of air pollutants generated. When land uses are spread throughout a community, they tend to increase the number and length of motor vehicle trips and associated air pollutant emissions because of the limited opportunities to walk, ride bicycles and use public transportation between uses, at homes and work or shopping. Smaller, more compact, higher density uses tend produce less air emissions from vehicle trips, as well as natural gas, on a per-unit basis. The following data *addresses* ~~discuss~~ both short-term (construction) and long-term (operational) emissions, as well as toxic air contaminants and local effects.

Construction Emissions: As outlined in Section 4.6.5.B.1, construction emissions are site-specific and thus will vary depending on the particulars of the implementing project. Because construction factors can vary so widely,

estimating all of the construction emissions or impacts for any of the Riverside County build out scenarios is infeasible. Instead, Table 4.6-D in Section 4.6 shows examples of the construction emissions associated with various sizes of development projects. The table demonstrates the construction emissions that would result from onsite grading activities, transport of materials to and from the site and the actual building construction, painting and paving associated with the individual developments. Most notably it shows that SCAQMD and MDAQMD thresholds for PM_{10} will be exceeded when construction activities result in the disturbance of 25 or more acres at a time. In addition, the construction of 150 single-family residential units or more would also exceed the SCAQMD threshold for ROG.

Because of the ease with which individual projects can exceed regulatory thresholds, construction air quality impacts would likely be considered individually significant for many of these future projects. Further, since the precise timing of future development cannot be controlled or readily foreseen, it is possible multiple projects would undergo construction simultaneously. The result would be cumulatively considerable, even if the individual projects were individually below the thresholds. Thus, for these reasons, construction air quality impacts are considered cumulatively considerable for any of the General Plan build out scenarios addressed.

Operational Emissions: Air quality effects are most often determined on the basis of traffic patterns which reflect land use, population and employment sources. Air quality effects are also influenced by growth projections and patterns. For the project and cumulative build out scenarios (i.e., GPU/GPA960 and CULM scenarios), operational emissions were calculated using URBEMIS for stationary and mobile source emissions. Scenario-specific data for the types and amounts of land use development planned were entered into URBEMIS to determine the pollutant emissions anticipated at full build out. This data includes the number of residential dwelling units, square footage of non-residential land uses, average daily trips, vehicle miles traveled and average trip lengths. Where project-specific data was not available, URBEMIS defaults were used. The result of the modeling indicates estimated air quality impacts for a variety of future scenarios, including each of the General Plan build out scenarios proposed for this cumulative analysis. For specifics on how the air quality data was modeled, see Section 4.6.4 and the letter addendum issued by Atkins, dated July 2013 (see Appendix EIR-10). The threshold values analyzed in Tables 5.5-I and 5.5-J, below, are as established by the agencies indicated. For a full listing of threshold standards, see Table 4.6-C in Section 4.6.3.

Table 5.5-I: Cumulative Unmitigated Operational Emissions

Emission Source[1, 2]	CO (lbs/day)[1]	NO_X (lbs/day)[1]	ROG (lbs/day)[1]	SO_X (lbs/day)[1]	PM_{10} (lbs/day)[1]	$PM_{2.5}$ (lbs/day)[1]
SCAQMD Thresholds [3]						
SCAQMD SCAB	550	55	55	150	150	55
SCAQMD SSAB	550	100	75	150	150	55
Existing [2]						
Mobile Source	196,880	31,670	18,320	160	25,020	5,100
Area source	~~44,370~~ 48,990	~~3,480~~ 3,520	~~22,130~~ 22,960	120	6,720	6,470
Existing Total	***~~241,250~~ 245,870***	***~~35,140~~ 35,190***	***~~40,450~~ 41,280***	***280***	***31,740***	***11,570***
Net GPU / GPA 960 Build Out [4]						
Mobile Source	185,490	21,480	18,750	700	109,480	21,340
Area Emissions	~~139,810~~ 151,790	~~9,770~~ 9,910	~~68,690~~ 70,850	390	~~21,300~~ 21,330	~~40~~ 20,530
GPU/GPA 960 Total	***~~325,300~~ 337,280***	***~~31,250~~ 31,390***	***~~87,430~~ 89,600***	***1,090***	***~~130,790~~ 130,810***	***~~21,380~~ 41,870***
Net Emissions [6]	***91,420***	***-3,800***	***48,320***	***810***	***99,070***	***30,300***
Significant[3] for SCAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
Significant[3] for SSAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***

Emission Source[1, 2]	CO (lbs/day)[1]	NO_X (lbs/day)[1]	ROG (lbs/day)[1]	SO_X (lbs/day)[1]	PM_{10} (lbs/day)[1]	$PM_{2.5}$ (lbs/day)[1]
Net CULM GP ~~/ GPAs~~ Build Out[5]						
Mobile Source	200,920	23,250	20,240	760	118,330	23,070
Area Emissions	~~139,810~~ 151,790	~~9,770~~ 9,910	~~68,690~~ 70,850	390	~~21,300~~ 21,330	~~20,510~~ 20,540
CULM GP~~/GPAs~~ Total	***~~340,730~~ 352,710***	***~~33,020~~ 33,160***	***~~88,930~~ 91,090***	***1,150***	***~~139,630~~ 139,660***	***~~43,580~~ 43,610***
Net Emissions[6]	***~~99,480~~ 106,850***	***~~-2,120~~ -2,030***	***~~48,480~~ 49,810***	***~~860~~ 870***	***~~107,900~~ 107,910***	***~~32,010~~ 32,020***
Significant[3] for SCAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
Significant[3] for SSAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
MDAQMD Thresholds[3]						
MDAQMD MDAB	100	25	25	25	15	15
Existing[2]						
Mobile Source	21,950	3,190	1,940	20	2,820	580
Area source	990	260	970	1	50	50
Existing Total	***22,940***	***3,450***	***2,910***	***20***	***2,870***	***630***
Net GPU / GPA 960 Build Out[4]						
Mobile Source	21,420	2,270	2,020	80	12,970	2,530
Area Emissions	2,840	690	3,020	~~5~~ 3	180	170
GPU / GPA960 Total	***24,260***	***2,960***	***5,050***	***80***	***13,150***	***2,700***
Net Emissions[6]	***1,320***	***-490***	***2,140***	***60***	***10,270***	***2,070***
Significant[3] for MDAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
Net CULM GP~~/GPAs~~ Build Out[5]						
Mobile Source	23,200	2,460	2,180	~~85~~ 90	14,020	2,730
Area Emissions	2,840	690	3,020	~~5~~ 3	180	170
CULM GP ~~/ GPAs~~ Total	***26,050***	***3,150***	***5,200***	***90***	***14,190***	***2,900***
Net Emissions[6]	***3,110***	***-300***	***2,290***	***70***	***11,320***	***2,280***
Significant[3] for MDAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***

Footnotes:
1. All values (except thresholds) rounded to nearest 10. Thus, totals may not sum precisely.
2. All build out scenarios calculated for 2040, the limit for URBEMIS2007 results. Although build out is anticipated for 2060, well beyond 2040, use of 2040 represents a conservative approach. See Appendix EIR-11, *Tables 6.1 – 6.4*. No data available for existing General Plan build out (CURR GP scenario).
3. Thresholds established by agency listed. Emission is significant ("yes") if net emission exceeds this value.
4. *From ~~Source:~~* Table 4.6-E for SCAQMD, Table 4.6-F for MDAQMD.
5. *From ~~Source:~~* Table *AQ-1* ~~Add-1~~ for SCAQMD and Table *AQ-2* ~~Add-2~~ for MDAQMD from Atkins Letter Addendum, *December 2014* ~~July 2013~~.
6. Net emissions are build out scenario minus existing year emissions.

Source: Atkins, Air Quality Study for General Plan Update, 2011; Atkins, Letter Addendum, *December 2014* ~~July 2013~~. (See Appendix EIR-10)

Table 5.5-J (Cumulative Unmitigated Operational Emissions) shows the anticipated unmitigated emissions for the various build out scenarios, and Table 5.5-K (Cumulative Mitigated Operational Emissions) shows the same results after reductions derived from proposed mitigation. Note that the build out scenario for the existing (*2009* ~~2008~~) General Plan was not modeled since it was not one of the proposed project outcomes and its results would only provide a plan-to-plan comparison. As indicated in the tables below, all of the build out scenarios would result in net emissions exceeding SCAQMD and MDAQMD thresholds of significance for CO, ROG, SO_X, PM_{10} and $PM_{2.5}$ but would be less than significant for NO_X emissions. The negative net emissions associated with NO_X reflects the substantial decrease in anticipated emissions from vehicles resulting from state and federally mandated vehicle efficiency increases over time.

Localized Significance Thresholds (LSTs): Localized significance thresholds (LSTs) were developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction or operation for individual developments. Due to the programmatic nature of the General Plan and the proposed project, detailed construction phasing, equipment and intensities are not available for the development area. Further, the exact size and location of future development within Riverside County is unknown at this time.

Therefore, a countywide build out analysis of impacts to sensitive receptors and population groups cannot be accurately determined using LST analysis and would be inappropriate under the SCAQMD's LST methodology, because specific acreages, uses and distances to sensitive receptors are required in order to calculate localized pollutant concentrations at sensitive receptors. For reference, however, the LST emissions associated with "typical" construction and operation activities are presented in Tables 4.6-I and 4.6-J of Section 4.6.5.

Table 5.5-J: Cumulative Mitigated Operational Emissions

Emission Source[1, 2]	CO (lbs/day)[1]	NO_X (lbs/day)[1]	ROG (lbs/day)[1]	SO_X (lbs/day)[1]	PM_{10} (lbs/day)[1]	$PM_{2.5}$ (lbs/day)[1]
SCAQMD Thresholds[3]						
SCAQMD SCAB	550	55	55	150	150	55
SCAQMD SSAB	550	100	75	150	150	55
***Net* GPU / GPA 960 Build Out and Reductions**						
Unmit. Mobile Source[4]	- 11,390	- 10,190	430	550	84,460	16,240
Reduction[5]	- 4,070	- 3,640	- 150	- 200	- 30,180	- 5,800
Net Mit. Mobile Source Subtotal	*- 15,460*	*- 13,830*	*280*	*350*	*54,280*	*10,440*
Unmit. Area source[4]	102,810	6,390	47,890	270	14,610	14,060
Reduction[5]	- 93,690	- 2,230	- 33,940	- 260	- 14,470	- 13,920
Net Mit. Area Source Subtotal	*9,120*	*4,160*	*13,950*	*10*	*140*	*140*
Mit. GPU/GPA960 Total	***- 6,340***	***- 9,660***	***14,230***	***360***	***54,420***	***10,570***
Significant[3] for SCAB?	***NO***	***NO***	***YES***	***YES***	***YES***	***YES***
Significant[3] for SSAB?	***NO***	***NO***	***YES***	***YES***	***YES***	***YES***
***Net* CULM GP / GPAs Build Out and Reductions**						
Unmit. Mobile Source[6]	4,040	- 8,420	1,920	600	93,310	17,970
Reduction[7]	- 1,760	- 3,660	- 840	- 260	- 40,600	- 7,820
Net Mit. Mobile Source Subtotal	*2,280*	*- 12,080*	*1,080*	*340*	*52,710*	*10,150*
Unmit. Area source[6]	95,440	6,300	46,560	260	14,590	14,040
Reduction[7]	- 86,320	- 2,130	- 32,610	- 260	- 14,450	- 13,900
Net Mit. Area Source Subtotal	*9,120*	*4,170*	*13,950*	*0*	*140*	*140*
Mit. CULM GP/~~GPAs~~ Total	***11,400***	***- 7,910***	***15,030***	***350***	***52,850***	***10,290***
Significant[3] for SCAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
Significant[3] for SSAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
MDAQMD Thresholds[5]						
MDAQMD MDAB	100	25	25	25	15	15
***Net* GPU / GPA 960 Build Out[4] and Reductions**						
Unmit. Mobile Source[4]	- 530	- 920	80	60	10,150	1,950
Reduction[5]	- 190	- 330	- 30	- 20	- 3,630	- 700
Net Mit. Mobile Source Subtotal	*- 720*	*- 1,250*	*50*	*40*	*6,520*	*1,260*
Unmit. Area source[4]	1,860	430	2,060	2	120	120
Reduction[5]	- 810	- 90	- 340	- 2	- 120	- 120
Net Mit. Area Source Subtotal	*1,050*	*350*	*1,720*	*0*	*0*	*0*
Mit. GPU/GPA960 Total	***~~1,130~~ 1,330***	***~~- 820~~ -900***	***~~2,110~~ 1,770***	***40***	***~~6,650~~ 6,520***	***~~1,370~~ 1,250***
Significant[3] for MDAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***
***Net* CULM GP/GPAs Build Out[4]**						
Unmit. Mobile Source[6]	1,260	- 730	230	70	11,200	2,160
Reduction[7]	- 550	- 320	- 100	- 30	- 4,870	- 340
Net Mit.Mobile Source Subtotal	*710*	*- 1,050*	*130*	*40*	*6,330*	*1,220*
Unmit. Area source[6]	1,860	430	2,060	2	120	120
Reduction[7]	- 810	- 90	- 340	- 2	- 120	- 120
Net Mit.Area Source Subtotal	*1,050*	*350*	*1,720*	*0*	*0*	*0*
Mit. ~~GPU/GPA960~~ CULM GP Total	***1,760***	***- 710***	***1,850***	***40***	***6,330***	***1,220***
Significant[3] for MDAB?	***YES***	***NO***	***YES***	***YES***	***YES***	***YES***

Footnotes:

1. All values (except thresholds) rounded to nearest 10. Thus, totals may not sum precisely.
2. All build out scenarios calculated for 2040, the limit for URBEMIS2007 results. Although build out is anticipated for 2060, well beyond 2040, use of 2040 represents a conservative approach. See Appendix EIR-11, *Tables 6.1 – 6.3*. No data available for existing General Plan build out (CURR GP scenario).

3. Thresholds established by agency listed. Emission is significant ("yes") if net emission exceeds this value.
4. Net unmitigated emission values from Table 4.6-E for SCAQMD and Table 4.6-F for MDAQMD.
5. Mitigation reduction values from Table 4.6-G for SCAQMD and Table 4.6-H for MDAQMD.
6. Net unmitigated emission values from Table *AQ-1* ~~Add-1~~ for SCAQMD and Table *AQ-2* ~~Add-2~~ for MDAQMD.
7. Mitigation reduction values from Table *AQ-3* ~~Add-3~~ for SCAQMD and Table *AQ-4* ~~Add-4~~ for MDAQMD.

Source: Atkins, Air Quality Study for General Plan Update, 2011; Atkins, Letter Addendum, *December 2014* ~~July 2013~~. (See Appendix EIR-10)

Toxic Air Contaminants: In addition to criteria pollutant analysis, localized emissions of toxic air contaminants (TACs) are also of concern with respect to sensitive receptors. Sources of TACs include diesel particulate matter from railroads, emissions from the combustion of airplane fuel, benzene emissions in close proximity to gasoline dispensing stations, dry cleaners and film processing services that use perchloroethylene, auto body shops due to various solvents, furniture manufacturers and repair facilities that use methylene chloride and print shops that use various solvents. The primary source of TACs within Riverside County is diesel-fueled trucks and other vehicles traveling the freeways and major roadways. In 2005, CARB published the "Air Quality and Land Use Handbook – A Community Health Perspective," to provide guidance on how to analyze TAC emissions. The CARB Guidance recommends buffer zones to insulate sensitive receptors from TAC sources.

Due to the programmatic nature of the various General Plan build out scenarios, it is not possible to forecast the detailed construction phasing, equipment and intensities, as well as project size, timing, etc., necessary to model LSTs or TACs with any degree of accuracy or reliability. It can be assumed, however, that various sizes and types of project will be developed. And because of the increased densities planned on the General Plan land use maps and the stated desire for residential land uses to be developed close to both transit and commercial centers (to reduce vehicle miles driven in the county, to improve regional air quality), it can be assumed that both the construction and the operation of commercial and industrial sources would be developed relatively close to sensitive receptors, including residences, schools and medical facilities. Since TACs are measured based on their *localized* significance relative to exposure of adjacent or nearby sensitive receptors, however, a cumulative level of significance cannot be assigned to such values; they are only cumulatively significant in terms of localized contributions. Such localized contributions cannot be calculated at the programmatic level.

c. Impacts

As discussed in greater detail in Section 4.6, future development will contribute incrementally to cumulative air quality impacts as Riverside County builds out over time pursuant to the General Plan (regardless of the scenario). Specific impacts will include the following:

(1) Cumulatively Considerable Impacts

- Relative to the 2008 SCAG Regional Comprehensive Plan and Guide (RCP), the existing (*2009* ~~2008~~) General Plan would be consistent because it predates the projections used in the RCP and the RCP includes this county build out scenario in its forecasts. For the project scenario (build out of the General Plan as amended by GPA No. 960), the build out capacity, populations and overall densities are reduced compared to that of the current General Plan. However, when gaged against the existing conditions, build out of the General Plan with the project would result in a cumulatively considerable impact. The same holds for the cumulative build out scenario. The CULM scenario represents increases in capacity, density, land uses and populations that greatly exceed that of the current General Plan. As such, its incremental contributions would result in cumulatively considerable conflicts with the regional air quality plans.

- As demonstrated by Table 4.6-D, both individual and cumulative emissions from future development, including that accommodated by the proposed project, GPA No. 960, would have the potential to exceed

construction emission thresholds (see Table 4.6-C). Thus, incremental emissions from build out of any of the General Plan scenarios, including that encompassing the project (GPU/GPA960), have the potential to be cumulatively significant.

- Construction equipment emit both criteria pollutants and diesel particulate matter (DPM), which is a toxic air contaminant (TAC), and construction activities such as grading generate fugitive dust emissions, including PM_{10} and $PM_{2.5}$. The cumulative emissions of criteria pollutants and DPM resulting from all construction activities throughout Riverside County will have the potential to affect the health of residents within Riverside County. In the absence of data to prove otherwise, it is assumed that future development accommodated by the proposed project would result in varying incremental amounts of construction on a daily and annual basis through that would be cumulatively significant, even if individually consistent with applicable construction thresholds, for any of the General Plan build out scenarios, including that encompassing the project (GPU/GPA960).

- Stationary and mobile sources would emit criteria pollutants based on the level of daily operation. Modeling results indicate that such emissions would be large, both for the project, GPA No. 960 (see Impact 4.6B(2) in Section 4.6) and cumulatively for any of the General Plan build out scenarios due to hundreds of individual sources that would be developed across Riverside County. Even with mitigation through regulatory compliance and CEQA-specific mitigation measures (from both this EIR and the prior EIR No. 441), operational criteria pollutant emissions would still cumulatively exceed regulatory thresholds. Thus, this impact would be cumulatively considerable.

- As discussed in Impact 4.6.B of Section 4.6, even when individual projects can mitigate construction or operational impacts to below regional thresholds, when emissions from all of the individual developments are considered together as one project, the regional thresholds would be exceeded as shown in Tables 4.6-E and 4.6-F. The measures outlined in Impact 4.6.B would aid in reducing cumulative impacts. However, the mitigated emissions shown in Tables 4.6-G and 4.6-H demonstrate that combined emissions associated with GPA No. 960 are above the thresholds of significance, and even with the implementation of reductions, emissions of criteria pollutants are not reduced to below regulatory thresholds due to the level of residential and non-residential growth. Therefore, impacts associated with future development accommodated by the project would be cumulatively considerable and result in a significant and unavoidable impact. Impacts would be similarly considerable for build out of the CULM scenario as well.

- Future development will expose sensitive receptors (residence, school, hospital, etc.) to air pollutant emissions from both construction and operational activities. Such impacts are generally localized to just the sensitive receptors surrounding the emission source. On a cumulative basis, impacts to sensitive receptors could be cumulatively considerable where more than one source emitter occurs in proximity to a sensitive receptor. Even when the individual sources are within regulatory limits, the potential exists for limits to be exceeded on a cumulative basis. This is particularly true for incremental mobile source (vehicular) emissions from major freeways with existing or future high traffic volumes.

- Further, as the exact location, timing and level of future development activities arising from build out of any of the General Plan scenarios cannot be foreseen to the degree of specificity necessary, specific impacts to sensitive receptors cannot be quantified. Thus, even after complying with regulations and implementing all mitigation measures, impacts cannot be guaranteed to be reduced to below applicable agency thresholds. Thus, this impact is considered cumulatively significant and unavoidable with respect to exposure of sensitive receptors for any of the General Plan build out scenarios, including that encompassing the project (i.e., GPU/GPA960).

- Due to the programmatic nature of the project, detailed construction phasing, equipment and intensities cannot be foreseen with reasonable accuracy at this time. Because of the increased density seen for the land uses and desired proximity of residential land uses to both transit and commercial centers, it can be assumed that both construction and operation of commercial and potentially industrial sources would be developed relatively close to sensitive receptors such as residences or schools. Thus, effects of project emissions on sensitive receptors throughout Riverside County must be considered significant and unavoidable.

- Localized emissions of toxic air contaminants (TAC) are of concern with respect to sensitive receptors. The primary source of TACs within the County of Riverside is vehicles, particularly diesel-fueled trucks, using the freeways and major roadways throughout the county. Buffer zones can help insulate sensitive receptors from TAC sources. However, residual incremental impacts must be assumed to be cumulatively considerable and unavoidable in the absence of site-specific proof of adequate mitigation.

(2) Non-Substantial Incremental Impacts

- Although almost any land use has the potential to emit odors, some land uses, such as chemical plants, composting operations, dairies, certain agricultural activities, landfills, etc., are more likely to produce odors because of their operations. For such uses, however, setbacks or buffers, and other site-specific and industry-specific measures are typically required to control odors. Although incremental odor emissions would result, such uses are not typically allowed to be developed in concentrations that would yield cumulatively considerable impacts.

- Construction activities associated with project implementation would generate airborne odors as a result of operation of construction vehicles (i.e., diesel exhaust), paving with hot asphalt and the application of architectural coatings. Because of the volatile nature of odor compounds, they either react quickly in the atmosphere or are diluted as they are carried away from the odor source. Therefore, construction odors are generally isolated and limited to the duration of construction and its immediate site vicinity. As such, they would not affect a substantial number of people as impacts related to these odors are limited to the number of people living and working nearby the source. Further, while some components of asphalt and diesel emissions are considered toxic air contaminants, construction activities do not generally cause significant odor impacts because of the duration of exposure. Future build out of any of the various General Plan scenarios, including that encompassing the project (GPU/GPA960) would not have cumulatively significant impacts due to odors.

d. Mitigation

As described in detail in Section 4.6.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative air quality impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Program: See Section 4.6.3 for the text of each policy.

- SCAG 2007 Air Quality Management Plan

- SCAQMD Attainment Plans

- MDAQMD Attainment Plans
- SCAQMD Rules addressing odors: e.g., Rule 402 (Nuisances), Rule 410 (Odors), Rule 1179 (Treatment Works)
- Ordinance No. 659 - Residential Development Impact Fee Program
- Ordinance No. 706 - Mobile Source Air Pollution Reduction Programs Funding
- Ordinance No. 726 - Transportation Demand Management for New Development
- Ordinance No. 748 - Mitigation of Traffic Congestion Through Signalization
- Ordinance No. 782 - Golf Cart Transportation Plan
- Ordinance No. 824 - Western Riverside County Traffic Uniform Mitigation Fee Program

Key General Plan Policies: See Section 4.6.3 for the text of each policy.

- Air Quality Element Policies: AQ 1.1-1.11, 2.1-2.4, 3.1-3.4, 4.1-4.10, 5.1-5.4, 7.1-7.4, 8.2, 8.4, 8.6-8.9, 9.1, 9.2, 10.1-10.4, 11.3, 11.4, 13.1-13.3, 14.1, 14.2, 14.4, 15.1, 16.1-16.4, 17.1-17.11, 19.1, 20.1, 22.1, 23.1, 24.1, 25.1, 26.1, 26.2, 27.1, 28.1 and 29.1-29.3
- Circulation Element Policies: C 1.2, 1.7, 4.1, 4.8, 9.2, 11.2, 11.4-11.7, 12.1-12.3, 13.1-13.3, 17.3, 17.4, 20.14 and 21.1
- Land Use Element Policies: LU 1.5, 2.1, 4.1, 8.12, 11.1-11.4 and 13.1-13.4
- Open Space Element Policies: OS 12.1 and 16.1-16.8

(2) CEQA Mitigation

Existing Mitigation Measures: In EIR No. 441, prepared for the 2003 RCIP General Plan, mitigation was imposed to reduce impacts to air quality. These measures remain applicable to this project (GPA No. 960) and would lessen impacts to air quality.

- **Existing MM 4.5.1A:** Applicable Rule 403 Measures: Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for ten days or more).

  a. Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving).

  b. All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

  c. Pave construction access roads at least 100 feet onto the site from main road.

d. Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

- **Existing MM 4.5.1B:** [Implement the following] additional SCAQMD CEQA Air Quality Handbook dust measures:

  a. Revegetate disturbed areas as quickly as possible.

  b. All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 mph.

  c. All streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).

  d. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

- **Existing MM 4.5.1C**: [Implement the following] mitigation measures for construction equipment and vehicles exhaust emissions:

  a. The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency.

  b. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.

  c. The construction contractor shall utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.

  d. The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.

  e. The construction contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.

  f. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.

  g. Dust generated by the development activities shall be retained on site and kept to a minimum by following the dust control measures listed below.

     i. During clearing, grading, earthmoving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

ii. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning, after work is completed for the day and whenever wind exceeds 15 miles per hour.

iii. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

iv. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

v. Trucks transporting soil, sand, cut or fill materials and/or construction debris to or from the site shall be tarped from the point of origin.

New Mitigation Measures: The following additional project-specific mitigation measures would be necessary to ensure that air quality impacts are avoided, reduced or minimized to the extent feasible. Implementation of these additional mitigation measures would help reduce project impacts, although it would not be guaranteed that the impacts would be cumulatively reduced to below threshold levels (even if individual emission reductions to adequate levels were achieved). See Section 4.6.6 for more details. Note, MMs numbered in the 4.7 series are greenhouse gas reduction measures proposed in Section 4.7.6 that will also help reduce criteria pollutant emissions.

- **New MM 4.6.B-N1:** The construction contractor shall ensure that all disturbed areas and stock piles are watered at least three times per day or soil stabilizers are applied as necessary to prevent visible dust plumes from these areas. Stock piles not in use may be covered with a tarp to eliminate the need for watering or other stabilizers.

- **New MM 4.6.B-N2:** All construction equipment shall have EPA rated engines of Tier 3 or better.

- **New MM 4.6.B-N3:** As soon as electric utilities are available at construction sites, the construction site shall be supplied with electricity from the local utility and all equipment that can be electrically operated shall use the electric utility rather than portable generators.

- **New MM 4.6.B-N4:** All new development shall ensure that all interior and exterior architectural coatings used are low in reactive organic gases.

- **New MM 4.6.B-N5:** If hearths are included in new residential developments, they shall be energy-efficient natural gas appliances. No wood-burning hearths or stoves shall be permitted in new residential developments.

- **New MM 4.6.D-N1:** New developments shall include the following requirements to reduce emissions associated with toxic air contaminants (TACs):

  a. Electrical outlets shall be included in the building design of any loading docks to allow use by refrigerated delivery trucks. Signage shall also be installed, instructing commercial vehicles to limit idling times to five minutes or less. If loading and/or unloading of perishable goods would occur for more than five minutes and continual refrigeration is required, all refrigerated delivery trucks shall use

the electrical outlets to continue powering the truck refrigeration units when the delivery truck engine is turned off.

b. Electrical outlets shall be installed on the exterior of new structures for use with electrical landscaping equipment. Further, the property owner(s) shall ensure that the hired landscape companies use electric powered equipment where available to a minimum of 20% of the equipment used.

- **New MM 4.6.D-N2:** The County of Riverside shall require minimum distances between potentially incompatible land uses, as described below, unless a project-specific evaluation of human health risks defines, quantifies and reduces the potential incremental health risks through site design or the implementation of additional reduction measures to levels below applicable standards (e.g., standards recommended or required by CARB, SCAQMD or MDAQMD).

  SCAQMD Jurisdiction:

  a. Proposed dry cleaners and film processing services that use perchloroethylene must be sited at least 500 feet from existing sensitive land uses including residential, schools, day care facilities, congregate care facilities, hospitals or other places of long-term residency for people.

  b. Proposed auto body repair services shall be sited at least 500 feet from existing sensitive land uses.

  c. Proposed gasoline dispensing stations with an annual throughout throughput of less than 3.6 million gallons shall be sited at least 50 feet from existing sensitive land uses. Proposed gasoline dispensing stations with an annual throughput at or above 3.6 million gallons shall be sited at least 300 feet from existing sensitive land uses.

  d. Other proposed sources of TACs including furniture manufacturing and repair services that use methylene chloride or other solvents identified as a TAC shall be sited at least 300 feet from existing sensitive land uses.

  e. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more.

  f. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners and film processing services that use perchloroethylene.

  g. Proposed sensitive land uses shall be sited at least 500 feet from existing auto body repair services.

  h. Proposed sensitive land uses shall be sited at least 50 feet from existing gasoline dispensing stations with an annual throughput of less than 3.6 million gallons and 300 feet from existing gasoline dispensing stations with an annual throughput at or above 3.6 million gallons.

  i. Proposed sensitive land uses shall be sited at least 300 feet from existing land uses that use methylene chloride or other solvents identified as a TAC.

  MDAQMD Jurisdiction:

  a. Proposed industrial projects must be sited at least 1,000 feet from existing sensitive land uses.

b. Proposed distribution centers with 40 or more trucks per day shall be sited at least 1,000 feet from existing sensitive land uses.

c. Proposed dry cleaner using perchloroethylene shall be sited at least 500 feet from existing sensitive land uses.

d. Proposed gasoline dispensing facility shall be sited at least 300 feet from existing sensitive land uses.

e. Proposed sensitive land uses shall be sited at least 500 feet from existing freeways, major urban roadways with 100,000 vehicles per day or more and major rural roadways with 50,000 vehicles per day or more.

f. Proposed sensitive land uses shall be sited at least 1,000 feet from existing industrial facilities or distribution centers with more than 40 trucks per day.

g. Proposed sensitive land uses shall be sited at least 500 feet from existing dry cleaners using perchloroethylene.

h. Proposed sensitive land uses shall be sited at least 300 feet from existing gasoline dispensing stations.

- **New MM 4.6.E-N1:** Locate potential new odor sources predominantly down- or crosswind from existing sensitive receptors and potential new sensitive receptors predominantly upwind from existing odor sources. As indicated by the "Right-to-Farm" ordinance, agricultural uses that have been operated for more than three years cannot be re-classified as a public or private nuisance by new development.

- **New MM 4.6.E-N2:** Maintain an adequate buffer between potential new odor sources and receptors such that emitted odors are dissipated before reaching the receptors (minimum of 500 feet depending on odor source). As indicated by the "right-to-farm" ordinance, agricultural uses that have been operated for more than three years cannot be re-classified as a public or private nuisance by new development.

- **New MM 4.6.E-N3:** Design odor-emitting facilities such that odor emitters are located as far from potential receptors as possible. Also, balance stack heights to provide the maximum dispersion of odor between the stack and the nearest sensitive receptor.

- **New MM 4.7.A-N1:** To ensure GHG emissions resulting from new development are reduced to levels necessary to meet State of California targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measure backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011).

- **New MM 4.7.A-N2:** In lieu of a project-specific GHG analysis per Mitigation Measure 4.7.A-N1, a future discretionary project pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the Riverside County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions.

- ***New Mitigation Measure 4.7.A-N3:*** *The County of Riverside will monitor implementation of the reduction measures and revise or amend the Climate Action Plan as needed based upon the results of monitoring to ensure achievement of the 2020 Reduction Target. In addition, the County of Riverside will start update process of the Climate Action Plan in 2017 to provide a post-2020 plan. The post-2020 Climate Action Plan update will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The post-2020 Climate Action Plan update will include a set of updated reduction measures to achieve the 2035 and 2050 Reduction Targets and updated monitoring system to ensure that the updated targets are achieved. The County of Riverside will adopt the new post-2020 Climate Action Plan update by January 1, 2020.*

e. Significance

The analysis presented above indicates that future development consistent with the proposed project, GPA No. 960, would contribute less than significant incremental impacts with respect to odors. For all other air quality impacts, however, incremental contributions will be cumulatively considerable, even with implementation of all feasible mitigation. Incremental contributions of future development, including that accommodated by GPA No. 960, would result in cumulatively considerable impacts due to construction and operational emissions of criteria pollutants, associated violations of air quality standards or thresholds, and effects to sensitive receptors, both locally and regionally. Even where individual future development projects were successfully mitigated to less than significant levels, they would still contribute incrementally to cumulatively significant air quality impacts. Because there is no feasible mechanism for the County of Riverside to control individual projects with respect to their incremental pollutant contributions, impacts to air quality would remain significant and unavoidable.

6. Cumulative Effects on Greenhouse Gas Emissions

Section 4.7 (Greenhouse Gases) of this EIR discusses specifics regarding existing and future greenhouse gas emissions in Riverside County. It also analyzes the impacts from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the regulations, policies and mitigation measures that would *help reduce (but not entirely avoid) significant* ~~ensure~~ impacts~~ are less than significant~~. To avoid repetition, information already covered in Section 4.7 is not repeated here. Refer back to Section 4.7 directly for additional details on greenhouse gases, particularly background information on global climate change.

Section 4.7 provides a complete description of the carbon inventory of Riverside County, as well as analysis of existing and future greenhouse gas (GHG) impacts projected to occur as Riverside County builds out. This data includes Table 4.7-A (Existing Riverside County Landfills), Table 4.7-B (Closed Riverside County Landfills), Table 4.7-C (2008 Net Total GHG Emissions for Unincorporated Riverside County), Table 4.7-D (Construction GHG Emissions – Residential Examples), Table 4.7-E (2020 BAU [Business As Usual] Operational GHG Emissions Inventory), Table 4.7-F (2020 Reduced GHG Emissions Inventory), Table 4.7-G (2020 Operational GHG Emissions – Scenario Comparisons), Table *4.7-I* ~~4.7-H~~ (2020 Operational GHG Emissions – Scenario Comparisons) and Table *4.7-H* ~~4.7-I~~ (SB 375 Target Comparisons). It also includes three pie charts: Figure 4.7.1 (2008 Greenhouse Gas Emissions in Unincorporated Riverside County), Figure 4.7.2 (2020 BAU Greenhouse Gas Emissions) and Figure 4.7.3 (2020 Reduced Scenario – Operational Greenhouse Gas Emissions)*, as well as a line graph, Figure 4.7.4 (Riverside County GHG Emissions with Reductions in CAP and Post-2020 CAP)*.

a. Existing Conditions

Greenhouse gases (GHGs) trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and

emitted solely through human activities, primarily through the combustion of fossil fuels. In the last decade, the State of California has recognized that anthropogenic (human-caused) greenhouse gas emissions are contributing to changes in the global climate and that such changes have adverse effects on the environment, the economy and public health. These are cumulative effects of past, present and future actions worldwide. While the worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHG emitted from a particular source or location. Thus, this EIR only examines GHG emissions at the regional (countywide) and local (future implementing projects) levels.

Direct emissions are those emitted directly from a project's onsite sources, such as gas-powered equipment (e.g., lawnmowers, etc.), backyard grills, etc., as well as mobile (vehicular) sources associated with travel. Indirect emissions are associated with off-site GHG generation, such as production of electricity or pumping imported water across the state. Impacts from GHG emissions are inherently cumulative: unlike criteria pollutants, they do not cause "local" effects. They only cause effects at the global level (climate change) as a result of many millions of sources and contributing actions worldwide. Thus, in large part the analyses presented in Section 4.7 can already be said to represent "cumulative" effects. Presented herein, however, is the additional "cumulative GPAs" General Plan build out scenario not already covered in Section 4.7.

California law defines GHGs to include the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (State CEQA Guidelines, Section 15364.5 and Health and Safety Code, Section 38505(g)). The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. Chlorofluorocarbons (CFCs), primarily used as refrigerants, aerosol propellants and cleaning solvents, are banned in California and Riverside County does not have any significant CFC emissions. Other synthesized gases, such as hydrofluorocarbons (HFCs) and carbon tetrafluoride (CF_4), have also been banned and are no longer available on the market. Thus, Riverside County does not have any significant sources of these GHGs either. Another GHG with a high GWP, SF_6 is mainly used in the electric switchgear of high voltage electric transmission lines and medical use in retinal detachment surgery and ultrasound imaging. These are the only two uses of SF_6 reported in Riverside County and are not used in cumulatively significant levels.

Section 4.7.2 includes the specifics on the baseline GHG emissions data that was developed for unincorporated Riverside County and the County of Riverside government operations. Note that the GHG emissions herein encompass only those from emission sources within unincorporated Riverside County or from activities that the County of Riverside has direct or indirect jurisdictional control (for example, county buildings located in a city). The GHG emissions inventories identify major sources and quantities of GHG emissions produced by Riverside County residents, businesses and government (County of Riverside) operations. Using historic emissions and business-as-usual (BAU) practices as the basis, the inventories include GHG emissions from 2008 (baseline) and projected for 2020 and beyond. The year 2008 was used as the baseline to inventory emissions for existing conditions as it was the most recent year with complete data. The methodology and data sources used to estimate the various types of existing (*as of* 2008) GHG emissions are described in Section 4.7.2 and the 2035 results of modeled estimates for, including both BAU and reduced scenarios, are described in Section 4.7.4 *for base (2008), intermin (2020, 2035) and buildout (2050-2060) years*.

In terms of land use, GHG emissions are predicted based on the types of activities associated with the given use and may span a number of sectors. For example, a single-family home would be associated with GHG emissions from transportation (commuting to work, say), waste generation (trash and lawn clippings) and energy consumption (electricity to run appliances and lights, natural gas to heat the house and cook, etc.). Accordingly, GHG inventories include emissions from the following categories: electricity, natural gas, solid waste, area sources, water-related emissions, agriculture and transportation. See Section 4.7.2 for more information.

b. Future Conditions

The GHG inventories for a variety of existing and future conditions are presented below. The data used below comes from Section 4.7 plus an addendum document issued by Atkins entitled: Technical Summary Report of Changes to Air Quality and Greenhouse Gas (GHG) Emissions from Cumulative Traffic Associated with the [Cumulative] General Plan Amendments *and GHG Emission Sources Attributiable to County Landfill Operations*, dated *December 31, 2014* ~~July 18, 2013~~ (see Appendix EIR-10). The addendum includes analyses of GHG emissions associated with the CULM General Plan build out scenario.

Consistent with Section 4.7, the Atkins addendum indicates that without mitigation, build out of the General Plan with the project (GPU/GPA 960) would be cumulatively considerable with respect to GHG emissions and AB 32 targets for 2020. However, with the mitigation provided in the General Plan, proposed Riverside County Climate Action Plan (CAP) and the EIR (i.e., the "2020 Reduced" column in Table 5.5-K), project and GPU/GPA 960 GHG emissions would be cumulatively non-substantial. The same pattern holds for the project, the GPU/GPA 960 build out, and per-capita emissions *for 2035* relative to SB 375 (see Table 5.5-L).

Beyond 2035, however, the ability to ensure adequate mitigation for GHGs becomes tenuous at best. Specifically, GHG emissions occurring within Riverside County between 2020 and 2060 would be cumulatively significant and unavoidable because they would contribute to GHG levels in excess of the 2050 mitigation targets established for California under Executive Order S-3-05, i.e., reducing GHG emissions to "80% below 1990 levels by 2050." The County is committed toward the reduction of GHG emissions. However, the means to achieve the 2050 reduction target is technologically infeasible at this time. Mitigation Measure 4.7.A-.N3 requires the County to provide by January 1, 2020, a post-2020 CAP that includes 2035 and 2050 reduction targets and specific reduction measures to achieve those targets. This allows technology, the State and the County the time needed to develop reduction measures able to achieve the 2050 reduction target. At present, however, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance in terms of 2050 targets. Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative greenhouse gas impacts would be significant and unavoidable. See Section 5.5.C.6 for full analysis and details.

When examining the CULM scenario, ~~however,~~ Atkins finds that "there would be a marked increase in mobile source GHG emissions in both the business as usual (BAU) and reduced operational emissions conditions" due to the increased vehicle trips (VMT, vehicle miles traveled). Unlike the project and the GPU/GPA 960 scenario, however, the CULM scenario's incremental GHG emissions at build out would be cumulatively considerable even with mitigation *for years 2020 and 2035. Both scenarios (GPU and CULM) would be cumulatively considerable for GHG impacts beyond 2035 to 2060 based on present technology and mitigation feasibility.* As shown in Tables 5.5-K and 5.5-L, for the CULM scenario, the Atkins addendum concludes that impacts would be cumulatively significant and unavoidable because the reduction target could not be met. See addendum for full details on the assumptions, calculations and modeling results used.

c. Impacts

As discussed in greater detail in Section 4.7, future development accommodated by the project will contribute incrementally to cumulative greenhouse gas emissions as Riverside County builds out over time pursuant to the various General Plan scenarios. Specific impacts will include the following:

- **Generation of Greenhouse Gas Emissions:** Build out of Riverside County over time pursuant to any of the General Plan scenarios, including GPU/GPA 960, which encompasses the proposed project (GPA 960), would result in future construction and operational activities that generate GHGs. Either individually or collectively, these activities can result in substantial emissions of GHGs; for example, exceeding the 3,000-10,000 metric tons per year (MTY) thresholds proposed by the SCAQMD in Tier 3

of its 2008 Interim CEQA Greenhouse Gas Significance Thresholds. For all but the CULM scenario, however, implementation of the proposed General Plan policies and particularly, the Implementation Measures in the proposed CAP, plus a variety of proposed mitigation measures, would be sufficient to ensure that incremental GHG emissions in Riverside County are less than significant *through at least 2020 to 2035, based on available technology and feasibility of current mitigation.*

Table 5.5-K: Cumulative Operational Greenhouse Gas Emissions (AB 32)

Scenarios & Net GHG Emission Sources[1]	Net GHG Emissions (Metric Tons of CO_2e)		
	2008 (Existing)[2]	2020 BAU (Unmitigated)	2020 Reduced (Mitigated)
Existing[2]			
Mobile Source Emissions	2,850,520	---	---
Area Emissions	~~4,251,800~~ 4,162,420	---	---
Existing GHG Total	***~~7,102,320~~ 7,012,940***	**---**	**---**
GPU/ GPA 960 Build Out			
Mobile Source Emissions	2,850,520	4,950,300	2,529,270
Area Emissions	4,251,800	5,318,640	3,505,690
GPU/GPA 960 GHG Total	***7,102,320***	***10,268,940***	***6,034,960***
Regulatory (AB 32) Target	**6,036,970**	**6,036,970**	**6,036,970**
Significant? [3]	***YES***	***YES***	***NO***
CULM GP~~/ GPAs~~ Build Out			
Mobile Source Emissions	2,850,520	6,977,330	3,539,390
Area Emissions	~~4,251,800~~ 4,162,420	~~6,704,490~~ 5,152,170	3,592,540
CULM GP~~/GPAs~~ GHG Total	***~~7,102,320~~ 7,012,940***	***~~13,681,820~~ 12,129,500***	***7,131,920***
Regulatory (AB 32) Target	**~~6,036,970~~ 5,961,000**	**~~6,036,970~~ 5,961,000**	**~~6,036,970~~ 5,961,000**
Significant? [3]	***YES***	***YES***	***YES***

Footnotes:
1. All values (except thresholds) rounded to nearest 10. Thus, totals may not sum precisely. See Appendix EIR-10 for data. No data available for existing General Plan build out (CURR GP scenario).
2. All scenarios use the same data for 2008 since they all start from the same unmitigated baseline conditions. It should be noted that the "yes" results for the build out scenarios reflect the fact that even if no General Plan Amendments were approved, Riverside County would still have significant GHG emissions if unmitigated.
3. Significant ("yes") if target exceeded. For source of AB 32 targets, see Table 4.7-C.

Source: Atkins, Letter Addendum, July 2013, Table GHG-1. See Appendix EIR-10.

Table 5.5-L: Cumulative Per-Capita Greenhouse Gas Emissions (SB 375)

Scenarios & Net GHG Emission Sources[1]	Per-Capita Passenger Vehicle GHG Emissions (Metric Tons of CO_2e)				
	2008 (Existing)[2]	2020 BAU (Unmitigated)	2020 Reduced (Mitigated)	2035 BAU (Unmitigated)	2035 Reduced (Mitigated)
Existing [2]					
Mobile Source[3] GHGs (MT CO_2e)	~~2,512,800~~ 2,850,520	---	---	---	---
Population (# of people)	553,500	---	---	---	---
Existing GHGs Per-Capita	***~~4.54~~ 5.15***	---	---	---	---
GPU / GPA 960 Build Out					
Mobile Source[3] GHGs (MT CO_2e)	2,512,800	3,395,900	2,167,200	5,603,300	2,761,300
Population (# of people)	553,500	800,600	880,600	969,100	969,100
GPU/GPA 960 GHGs Per-Capita	***4.54***	***3.86***	***2.46***	***5.78***	***2.85***
Regulatory (SB 375) Target	**---**	***3.07***	***3.07***	***2.90***	***2.90***
Significant? [4]	---	***YES***	***NO***	***YES***	***NO***
CULM GP~~/ GPAs~~ Build Out					
Mobile Source[3] GHGs (MT CO_2e)	2,512,800	~~4,929,130~~ 6,150,730	3,539,390	9,099,960	4,733,370
Population (# of people)	553,500	~~1,049,280~~ 880,600	~~1,049,280~~ 880,600	~~1,602,240~~ 969,100	~~1,602,240~~ 969,100
CULM GP~~/GPAs~~ GHGs Per-Capita	***4.54***	***~~4.70~~ 4.02***	***~~3.37~~ 4.02***	***~~5.68~~ 9.39***	***~~2.95~~ 4.88***

Scenarios & Net GHG Emission Sources[1]	Per-Capita Passenger Vehicle GHG Emissions (Metric Tons of CO_2e)				
	2008 (Existing)[2]	2020 BAU (Unmitigated)	2020 Reduced (Mitigated)	2035 BAU (Unmitigated)	2035 Reduced (Mitigated)
Regulatory (SB 375) Target	**---**	***3.07***	***3.07***	***2.90***	***2.90***
Significant? [4]	---	***YES***	***YES***	***YES***	***YES***

Footnotes:
1. All values (except per-capita) rounded to nearest 10. Thus, totals may not sum precisely. See Appendix EIR-~~10~~ 6 for data. No data available for existing General Plan build out (CURR GP scenario).
2. All scenarios use the same data for 2008 since they all start from the same unmitigated baseline conditions. It should be noted that the "yes" results for the build out scenarios reflect the fact that even if no General Plan Amendments were approved, Riverside County would still have significant GHG emissions if unmitigated.
3. Automobiles and light-duty trucks.
4. Significant ("yes") if target exceeded. For SB 375 targets, see Table 4.7-H.

Source: Atkins, Letter Addendum, *December 2014* ~~July 2013~~, Table GHG-2. See Appendix EIR-10.

- **Construction GHG Emissions:** Construction activities will result in GHG emissions from individual public and private projects implemented pursuant to General Plan build out. The exact amount of emissions would be dependent on the particular construction equipment used, length of construction and the number of projects occurring at any given time. Following SCAQMD methodology, construction emissions are amortized into a project's GHG emissions total, which must then be mitigated as outlined in the draft CAP. The results in Table 5.5-K indicate that with the implementation of the items outlined for the "2020 Reduced" scenarios (i.e., emission results after imposition of regulatory and mitigation measures), incremental GHG emissions associated with the GPU/GPA 960 (i.e., with project) build out scenario in Riverside County will be cumulatively less than significant.

- **Operational GHG Emissions:** To comply with state laws (AB 32), cumulative GHG emissions for Riverside County need to be at or below the 1990 emission levels by the year 2020. Using this threshold, the regulatory and mitigation measures outlined below (and, in particular, from the ~~draft~~ CAP) would ensure that cumulative GHG emissions in Riverside County are consistent with this target *for 2020*. As indicated in Table 5.5-K, incremental GHG emissions associated with the GPU/GPA 960 (project) build out scenario will be cumulatively less than significant *for at least AB 32's 2020 target*.

- **Conflict with GHG Reduction Plans, Policies or Regulations:** Implementation of the General Plan, as updated pursuant to the proposed project (i.e., the GPU/GPA 960 scenario), would result in future construction and operational activities that generate GHGs. This generation of GHGs would potentially conflict with the implementation of AB 32 and SB 375, California policies for reducing GHG emissions. However, implementation of the proposed General Plan policies and particularly the Implementation Measures of the Riverside County CAP, plus proposed new Mitigation Measures 4.7.A-N1 and 4.7.A-N2, would ensure that build out of the General Plan, as amended by GPA No. 960, would be consistent with both Riverside County's proposed Climate Action Plan (CAP) and State of California mandates (under AB 32 and SB 375), *at least as applies to years 2020 and 2035, and* ~~as well as~~ have a less than significant impact on their implementation *for this interim period. For long-range GHG reduction targets, however, both project (GPU) and CULM scenarios would result in cumulatively significant impacts. In particular, GHG emissions occurring within Riverside County between 2020 and 2060 would be cumulatively significant and unavoidable because they would contribute to GHG levels in excess of the 2050 mitigation targets established for California under Executive Order S-3-05, i.e., reducing GHG emissions to "80% below 1990 levels by 2050." The County is committed toward the reduction of GHG emissions. However, the means to achieve the 2050 reduction target is technologically infeasible at this time. New Mitigation Measure 4.7.A-N3 requires the County to provide by January 1, 2020, a post-2020 CAP that includes 2035 and 2050 reduction targets and specific reduction measures to achieve those targets. This allows technology, the State and the County the time needed to develop reduction measures able to achieve the 2050 reduction target. At present, however, there is no feasible mitigation to fully reduce this cumulative impact to below the level of significance in terms of 2050 targets.*

Thus, even though project effects may be individually limited, GPA No. 960's incremental contribution to these cumulative greenhouse gas impacts would be significant and unavoidable.

- **Consistency with AB 32 and SB 375:** Per Tables 5.5-K and 5.5-L, with mitigation, in particular the CAP Implementation Measures (as discussed under Impact 4.7.1 in Section 4.7), Riverside County's cumulative 2020 GHG emissions would meet regulatory targets for both AB 32 and SB 375 for the GPU/GPA 960 (i.e., with project) build out scenario *through at least 2020 to 2035. As discussed above, it is at present technologically infeasible to ensure full mitigation to less-than-significant levels (i.e., 90% of 1990 levels) for GHG emissions beyond 2035 to buildout (2050-2060). This applies to both the project (GPU/GPA 960) and CULM build-out (2060) scenarios.* Thus, the incremental contributions associated with GPA No. 960 would *only* be cumulatively less than significant *through 2020-2035*. For the CULM scenario, *data for the 2020, 2035 and buildout periods* ~~however, the same tables~~ indicate that even with mitigation, impacts would be cumulatively considerable and further reduction measures *not presently technolocially feasible,* ~~related to electric vehicles, for example,~~ would be necessary. See the Atkins addendum for more information.

d. Mitigation

As described in detail in the applicable subsections of 4.7.5, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative impacts from GHG emissions and ensure regulatory compliance. These include the following items:

(1) Regulatory Compliance

Key Regulations and Program: See Section 4.7.3 for information on each regulation.

- California Executive Order S-3-05 - Establishing GHG Emission Reduction Targets
- California Executive Order S-13-08 - Establishing Climate Adaption Strategies
- California Assembly Bill 32 - Global Warming Solutions Act of 2006
- California Senate Bill 375 - Sustainable Communities and Climate Protection Act
- California Ambient Air Quality Standards
- CCR Title 24, Part 6 - Energy Efficiency Standards
- Ordinance No. 559 - Regulating the Removal of Trees
- Ordinance No. 655 - Regulating Light Pollution
- Ordinance No. 659 - Residential Development Impact Fee (DIF) Program
- Ordinance No. 695 - Requiring the Abatement of Hazardous Vegetation
- Ordinance No. 706 - Mobile Source Air Pollution Reduction Programs (Funding)
- Ordinance No. 726 - Transportation Demand Management for New Development

- Ordinance No. 748 - Mitigation of Traffic Congestion through Signalization
- Ordinance No. 782 - Golf Cart Transportation Plan
- Ordinance No. 810 - Establishing an Interim Open Space Mitigation Fee
- Ordinance No. 824 - Western Riverside County Traffic Uniform Mitigation Fee (TUMF) Program
- Ordinance No. 859 - Establishing Water-Efficient Landscaping Standards
- Ordinance No. 875 - Establishing Mitigation Fees for Coachella Valley Multi-Species Habitat Conservation Plan
- Board of Supervisors Policy No. A-64 - Environmental Purchasing
- Board of Supervisors Policy No. H-4 - Energy Conservation
- Board of Supervisors Policy No. H-25 - Water Efficient Landscaping
- Board of Supervisors Policy No. H-29 - Sustainable Building

Key General Plan Policies: See Section 4.7.3.E and F. for the text of each policy.

- Air Quality Element Policies: AQ 1.1-1.4, 1.7, 3.2, 3.4, 4.4, 5.1, 5.2, 5.4, 8.4-8.9, 10.1-10.4, 13.1, 21.1-21.5, 22.1, 23.1, 23.2, 24.1, 24.2, 25.1-25.3, 26.1, 26.2, 27.1, 27.2, 28.1, 28.2, 29.1-29.4 and 30.1-30.5
- Circulation Element Policies: C 1.2, 1.7, 4.1, 4.8, 5.2, 9.2, 11.2, 11.4, 11.5, 11.7, 12.1, 12.2, 13.1-13.3, 17.3, 17.4, 21.1 and 21.9
- Land Use Element Policies: LU 1.5, 2.1, 4.1, 8.12, 11.1, 11.3, 11.4 and 13.1-13.4
- Open Space Element Policies: OS 2.2, 2.5, 10.1, 11.1-11.3, 12.1 and 16.3-16.8

(2) CEQA Mitigation

Existing Mitigation Measures: In EIR No. 441, prepared for the 2003 RCIP General Plan, mitigation was imposed to reduce air quality pollutants. Since GHG emissions are also produced from some of the same sources (particularly vehicular exhaust), these measures are also applicable to this project (GPA No. 960) and would lessen impacts from GHG emissions as well.

- **Existing MM 4.5.1C:** Mitigation measures for construction equipment and vehicles exhaust emissions:

  a. The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency.

  b. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.

c. The construction contractor shall utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.

d. The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.

e. The construction contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.

f. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.

g. [Item g, dust control measures omitted, since not applicable to GHGs].

New Mitigation Measures: The following additional project-specific mitigation measures would be necessary to ensure that GHG impacts are avoided, reduced or minimized to below threshold levels. See Section 4.7.6 for additional details.

- **New MM 4.7.A-N1:** To ensure GHG emissions resulting from new development are reduced to levels necessary to meet State targets, the County of Riverside shall require all new discretionary development to comply with the Implementation Measures of the Riverside County Climate Action Plan or provide comparable custom measures backed by a project GHG study (for example, using CalEEMod modeling) demonstrating achievement of the same target. The target to be met is a GHG emissions reduction of 25% below emissions for the adjusted BAU scenario for residential, commercial, industrial, institutional and mixed-use projects. The adjusted BAU is based upon the 2020 adjusted BAU found in the Final Supplement to the AB 32 Scoping Plan (CARB 2011).

- **New MM 4.7.A-N2:** In lieu of a project-specific analysis per Mitigation Measure 4.7.A-N1, a future discretionary project proposed pursuant to the Riverside County General Plan shall incorporate into the project design, operational features and/or Implementing Measures from the Riverside County Climate Action Plan, in such a manner as to garnish at least 100 points. The point values within the CAP's Screening Tables constitute GHG emission reductions.

- ***New MM 4.7.A-N3:*** *The County of Riverside will monitor implementation of the reduction measures and revise or amend the Climate Action Plan as needed based upon the results of monitoring to ensure achievement of the 2020 Reduction Target. In addition, the County of Riverside will start update process of the Climate Action Plan in 2017 to provide a post-2020 plan. The post-2020 Climate Action Plan update will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal reduction targets including Executive Order S-3-05 and with the scientific understanding of the needed reductions by 2050. The post-2020 Climate Action Plan update will include a set of updated reduction measures to achieve the 2035 and 2050 Reduction Targets and updated monitoring system to ensure that the updated targets are achieved. The County of Riverside will adopt the new post-2020 Climate Action Plan update by January 1, 2020.*

e. Significance

Implementation of, and compliance with, the above regulations, policies and mitigation measures would ensure that incremental impacts due to greenhouse gas emissions from future development within Riverside County are minimized to a level that is cumulatively less than significant, including GHG emissions from construction and operational activities. Following the 2020 emissions analysis, it was determined that future development authorized pursuant to the General Plan, as amended by the proposed project (i.e., the GPU/GPA 960 scenario), would not conflict with the implementation of AB 32. Through an analysis of passenger vehicle emissions for 2020 and 2035, it was also determined that the updated General Plan would be consistent with the targets for the SCAG region under SB 375 with mitigation. Compliance with existing and proposed General Plan policies and, in particular, the County Climate Action Plan's implementing measures and screening tables, plus the mitigation measures herein, would ensure that any future development activities approved within Riverside County reduce greenhouse gas emissions, fully mitigate or avoid any GHG impacts and are consistent with the State of California and County of Riverside's greenhouse gas reduction polices and the Climate Action Plan.

7. Cumulative Effects on Biological Resources

Section 4.8 (Biological Resources) discusses existing biological resources within Riverside County, as well as the sources used (and any updates made to them) for this data. The section also analyzes biological impacts from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both through regulatory compliance and CEQA-specific mitigation) necessary to ensure impacts are less than significant. As a result, areas already covered in Section 4.8 are not repeated here. See Section 4.8 for additional details.

a. Existing and Future Conditions

In Riverside County, variations in topography, elevation, soil and climate create conditions for a wide variety of natural communities, each with its own assemblage of native plants and animals. Hence the biological resources of Riverside County include a rich range of habitats, plants, animals and insects that cover a wide spectrum, from banal (pigeons, gophers and coyotes) to highly endangered and endemic to very small portions of the county (fairy shrimp, Quino checkerspot butterfly and Stephens' kangaroo rat, for example).

Section 4.8 provides a complete description of the natural communities (habitats), species and existing conservation areas. This data includes Table 4.8-A (Western Riverside County Natural Communities), Table 4.8-B (Coachella Valley Natural Communities), Table 4.8-C (Non-MSHCP Areas Natural Communities), Table 4.8-D (Sensitive Species of the County within the WRC-MSHCP or CV-MSHCP) and Table 4.8-E (Additional Candidate, Sensitive and Special Status Species Potentially in Riverside County). It also includes Figure 4.8.1 (MSHCP Coverage Areas and Non-MSHCP Areas within Riverside County), Figure 4.8.2 (Western Riverside County Natural Communities), Figure 4.8.3 (Coachella Valley Natural Communities) and Figure 4.8.4 (Non-MSHCP Areas Natural Communities). Section 4.8 also discusses the role of environmental regulations and, in particular, the two major Multi-Species Habitat Conservation Plans (MCHCPs) that cover parts of tRiverside Ccounty: the Western Riverside County MSHCP and the Coachella Valley MSHCP.

Spatial analyses were performed to examine the cumulative results of General Plan build out on biological resources. To encapsulate the scope of impacts resulting from build out of Riverside County, the various General Plan build out scenarios were analyzed against the natural communities mapped within Riverside County (i.e., General Plan Figures OS-4a, 4b and 4c). These land use and habitat analyses reflect the range of impacts to species, as site-specific or species-specific surveys are well beyond the scope of this programmatic EIR. Table

5.5-M (Cumulative Biological Effects in Unincorporated Riverside County), below, shows the cumulative conditions for the three General Plan build out scenarios examined in this section: the existing (*2009* ~~2008~~) General Plan (CURR GP), the General Plan updated per the project (GPU/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP).

Table 5.5-M: Cumulative Biological Effects in Unincorporated Riverside County

Habitat Type	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
Grassland						
Existing Total	***3,260***	***7,190***	***7,120***	***44,720***	***1,190***	***63,480***
CURR GP Total	*4,450*	*11,320*	*23,570*	15,930	2,090	*57,360*
GP*U* / *GPA* 960 Δ (Change)	*+50*	+160	-440	+150	+150	*+70*
CULM GP Δ (Change)	*+540*	*+180*	*-790*	*+60*	*0*	*-10*
Scrub[1]						
Existing Total	***14,680***	***107,350***	***571,810***	***1,746,150***	***10,530***	***2,450,520***
CURR GP Total	*15,120*	*42,730*	1,595,550	758,360	*13,600*	*2,425,360*
GP*U* / *GPA* 960 Δ (Change)	+290	*+340*	-3,240	+3,070	+280	*+740*
CULM GP Δ (Change)	*+1,750*	*+2,450*	*-4,490*	*+670*	*+160*	*+540*
Chaparral						
Existing Total	***7,630***	***3,680***	***9,680***	***430,760***	***2,000***	***453,750***
CURR GP Total	530	8,360	190,960	214,080	1,310	415,240
GP*U* / *GPA* 960 Δ (Change)	+20	+2,120	-8,980	+6,790	+60	+10
CULM GP Δ (Change)	*+50*	*+4,170*	*-4,170*	*-50*	*0*	*0*
Playa & Vernal Pool[2]						
Existing Total	***0***	***0***	***140***	***13,210***	***0***	***13,350***
CURR GP Total	0	40	13,120	190	0	13,350
GP*U* / *GPA* 960 Δ (Change)	0	0	0	0	0	0
CULM GP Δ (Change)	0	0	0	0	0	0
Marsh & Meadow[3]						
Existing Total	***190***	***530***	***550***	***2,610***	***150***	***4,030***
CURR GP Total	100	90	1,330	1,490	10	3,020
GP*U* / *GPA* 960 Δ (Change)	0	-10	-30	+20	+10	-10
CULM GP Δ (Change)	0	*+20*	*-30*	*0*	*0*	*-10*
Riparian Scrub, Woodland & Forest[4]						
Existing Total	***2,210***	***32,660***	***34,610***	***297,360***	***2,010***	***368,850***
CURR GP Total	2,520	20,740	296,140	44,370	3,730	367,500
GP*U* / *GPA* 960 Δ (Change)	-90	-290	+100	+150	+150	+20
CULM GP Δ (Change)	+1,220	*+640*	*-2,220*	*+150*	*+240*	*-70*
Water						
Existing Total	***170***	***480***	***1,030***	***13,880***	***210***	***15,770***
CURR GP Total	100	240	2,320	12,780	280	15,720
GP*U* / *GPA* 960 Δ (Change)	0	0	0	0	0	0
CULM GP Δ (Change)	0	+60	-60	0	0	0
Desert Dunes & Sand Fields						
Existing Total	***650***	***180***	***37,330***	***69,900***	***380***	***108,440***
CURR GP Total	2,270	460	64,330	41,560	130	108,750
GP*U* / *GPA* 960 Δ (Change)	+80	0	0	0	-80	0
CULM GP Δ (Change)	*+80*	0	0	0	*-80*	0
Conifer Woodland & Forest						
Existing Total	***890***	***90***	***15,630***	***29,640***	***310***	***46,560***
CURR GP Total	1,170	1,610	7,010	36,210	150	46,150
GP*U* / *GPA* 960 Δ (Change)	0	0	+80	-70	0	+10
CULM GP Δ (Change)	0	+10	*-10*	*0*	0	*0*

Habitat Type	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
Woodland & Forest (Broadleaf)						
Existing Total	***1,250***	***1,180***	***33,610***	***87,060***	***440***	***123,540***
CURR GP Total	220	1,550	22,010	98,250	100	122,130
GP*U* / *GPA* 960 Δ (Change)	0	+360	-550	+190	0	0
CULM GP Δ (Change)	+20	*+320*	*-440*	*+100*	0	*0*
Natural Habitats - Subtotal						
Existing Total	***30,930***	***153,340***	***711,510***	***2,735,290***	***17,220***	***3,648,290***
CURR GP Total	***26,480***	***87,140***	***2,216,340***	***1,223,220***	***21,400***	***3,574,580***
GPU / GPA 960 Δ (Change)	***+350***	***+2,680***	***-13,060***	***+10,300***	***+570***	***+840***
CULM GP Δ (Change)	***+3,560***	***+7,850***	***-12,210***	***+930***	***+320***	***+450***
Total Natural Habitats, With Culm B/O Changes	***30,390*** *-1.7%*	***97,670*** *-36.3%*	***2,191,070*** *207.9%*	***1,234,450*** *-54.9%*	***22,290*** *29.4%*	***3,575,870*** *-2.0%*
Developed/Disturbed						
Existing Total	***35,860***	***16,300***	***36,050***	***23,580***	***11,030***	***122,820***
CURR GP Total	*41,340*	*49,760*	51,300	48,610	6,530	197,540
GP*U* / *GPA* 960 Δ (Change)	*+350*	*-290*	-10	*-1,610*	+110	*-1,450*
CULM GP Δ (Change)	*+690*	*-10*	*-670*	*-1,420*	*0*	*-1,410*
Agriculture						
Existing Total	***12,500***	***195,590***	***4,980***	***30,940***	***4,120***	***248,130***
CURR GP Total	*37,210*	*161,890*	*38,350*	7,610	*2,060*	247,120
GP*U* / *GPA* 960 Δ (Change)	+2,380	-2,740	+230	+560	*+180*	*+610*
CULM GP Δ (Change)	*+4,460*	*-3,790*	*0*	*+280*	*+10*	*+960*
Development Category - Total						
Existing Total	***79,290***	***365,230***	***752,540***	***2,789,810***	***32,370***	***4,019,240***
CURR GP Total	***105,030***	***298,790***	***2,305,990***	***1,279,440***	***29,990***	***4,019,240***
GPU / GPA 960 Δ (Change)	***+3,080***	***-350***	***-12,840***	***+9,250***	***+860***	***0***
CULM GP Δ (Change)	***+8,710***	***+4,050***	***-12,880***	***-210***	***+330***	***0***
General Plan Totals, With Cumulative Changes	***116,820*** *47.3%*	***302,490*** *-17.2%*	***2,280,270*** *203.0%*	***1,288,480*** *-53.8%*	***31,180*** *-3.7%*	***4,019,240***

Footnotes:
1. Encompasses coastal sage scrub, desert alkali scrub and desert scrub habitats.
2. Encompasses alkali playa and playa/vernal pool habitats.
3. Encompasses cismontane alkali marsh and meadow/marsh habitats.
4. Encompasses dry wash woodland/mesquite, riparian scrub/woodland/forest, and Riversidean alluvial fan sage scrub habitats.
5. *See Tables 7.1 through 7.4 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County GIS *(RCIT)*, RCLIS layers (natural communities: western, Coachella Valley and non-MSHCP areas) and project application data, 2013 *and 2014*.

Growth pressures within Riverside County will result in development that causes the incremental loss, fragmentation and degeneration of natural habitat regardless of the General Plan build out scenario. Per Table 5.5-M, General Plan build out will contribute incrementally to the loss of species and habitat within Riverside County and result in varying degrees of impacts, depending on the size, scope and location of the incremental future development. Under build out of the current (*2009* ~~2008~~) General Plan, the amount of disturbed and developed land overall would increase 20% countywide. This includes increases in urban/suburban uses of roughly *32%* ~~63%~~ (*25,700* ~~30,600~~ acres) and *a doubling of* ~~an increase in~~ interface/wildland uses*, approximately 1.5 million acres* ~~of 48,700 acres (119%)~~. Due to greater accuracy in mapping, public facility uses would decrease *nearly 10%* ~~42%~~, which is a gain of roughly *2,400* ~~6,400~~ acres of mainly undisturbed habitat. These land use changes show similar trends across the various natural communities; that is, habitat acreage within vacant/open uses decreasing and in urban/suburban and, in particular, interface/wildland uses increasing.

The with-project General Plan build out scenario, GPU/GPA960, will further increase these amounts of habitat loss to development and urbanization in general, though in incremental amounts generally not substantial. Of

particular note, the GPU/GPA960 scenario would add over *9,200* ~~10,000~~ additional acres of natural habitat within vacant and open space uses. For the cumulative GPAs/General Plan build out (i.e., the CULM scenario), the incremental losses of native habitat and gains in developed acreage continue in larger, but still incrementally insignificant, amounts. In particular, when compared against the offsetting habitat conservation targets to be achieved through the Western Riverside County and Coachella Valley MSCHPs, the incremental effects of habitat loss for the GPU/GPA960 and CULM scenarios are not cumulatively significant.

b. Impacts

Future development accommodated will contribute incrementally to cumulative biological impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulative Impacts Mitigated to Non-Substantial Levels

- Loss of habitat, including riparian and other sensitive habitat types. See discussion under Impact 4.8.A in Section 4.8.

- Direct take of species (that is, kill, harass, harm, etc.), including species protected by law (threatened or endangered under the federal or California Endangered Species Act), as well as species otherwise protected or identified as sensitive (e.g., within the WR-MSHCP or CV-MSHCP, etc.). See discussion under Impact 4.8.B.

- Indirect "take" of species (through habitat loss, loss of breeding, nesting or roosting areas, noise and disturbance by humans, pets, etc.), including protected and sensitive species. See discussion under Impact 4.8.B.

- Adverse effects to, including loss of, wetlands and riparian habitat through direct removal, fill or hydrological interruption; or indirectly through topographic changes, alteration of soils, slopes or hydrology; etc. See discussion under Impact 4.8.C.

- Adverse effects to, including loss of, areas used for the movement of both resident and migratory native species of fish and wildlife. This includes loss of wildlife corridors and open space lands connecting natural habitat areas, as well as the use of wildlife nursery and hibernation sites. See discussion under Impact 4.8.D.

(2) Non-Substantial Cumulative Impacts

The following effects will contribute incrementally, but not substantially, to the cumulative impact on biological resources occurring as a result of build out of the Riverside County General Plan. See Section 4.8.6 for additional details on these impacts.

- Loss of habitat directly, e.g., through conversion of natural habitats to developed uses or the clearing of native vegetation; indirect habitat loss (e.g., through alteration of drainage and hydrology, introduction of invasive plants species [weeds] or due to increased disturbance by human activities, etc.); as well as habitat fragmentation (loss of continuity among natural habitats, resulting in "edge effects").

- Edge effects in which human activities (particularly development of previously vacant lands) introduce disturbances in the vicinity of natural plant communities and wildlife habitat. Noise, trash and refuse, light pollution, predation by house pets and human encroachment are all associated with edge effects.

- Loss of oak trees and other mature forest canopy, either through direct take or through indirect causes, such as hydrological changes, etc.

c. Mitigation

As described in detail in Section 4.8 (see Section 4.8.3), a variety of existing regulatory compliance and specific mitigation measures would be implemented to avoid, reduce and minimize adverse cumulative biological impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs:

- Federal Endangered Species Act
- Federal Clean Water Act (Sections 401, 402 and 404, in particular)
- Migratory Bird Treaty Act
- California Endangered Species Act - CFGC section 2050 *et seq.*
- California Fish and Game Code (CFGC), section 1600, *et seq.*
- Natural Community Conservation Planning Act
- California Native Plant Protection Act.
- Western Riverside County Multi-Species Habitat Conservation Plan
- Coachella Valley Multi-Species Habitat Conservation Plan
- Stephens' Kangaroo Rat Habitat Conservation Plan
- Riverside County Oak Tree Management Guidelines
- Ordinance No. 559 - Regulating the Removal of Trees

Key General Plan Policies: See Section 4.8.3 for text of each policy.

- Land Use Element Policies: LU 7.7, 9.1 and 9.2
- Open Space Element Policies: OS 5.1-5.3, 5.5, 5.6, 6.1, 6.2, 9.3, 9.4, 17.1, 17.2, 18.1, 18.3, 18.4 and 20.2
- Circulation Element Policies: C 20.9

(2) CEQA Mitigation

As part of EIR No. 521, the following new mitigation measures (MMs) are proposed to ensure that biological impacts are reduced to less than significant. See the cited impacts in Section 4.8.6 for the full text of each mitigation measure.

- **New MM 4.8.A-N1:** For sites not governed by an existing MSHCP, where site conditions (for example, topography, soils, vegetation, etc.) indicate a project could adversely affect any riparian or riverine resources, then an appropriate assessment shall be prepared by a qualified professional. An assessment shall include, but not be limited to, identification and mapping of any riparian/riverine areas and evaluation of species composition, topography/hydrology and soil analysis, as applicable. An assessment shall be completed as part of the environmental review for the development proposal prior to its approval. Upon receipt of an assessment, the Riverside County Ecological Resources Specialist (ERS) shall review the document and make a finding that either:

  a. Riparian/riverine areas do not exist on site;

  b. Project-specific avoidance measures have been identified that would be sufficient to ensure avoidance of riparian/riverine areas; or

  c. Impacts to riparian/riverine areas are significant and unavoidable. If avoidance is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools and associated functions and values to the greatest extent possible must be developed.

  If impacts remain significant and unavoidable then the ERS will require the project applicant to obtain a Section 404 permit from the ACOE and/or a Fish and Game Code Section 1600 agreement from CDFW prior to the issuance of any grading permit or other action by the County of Riverside that would lead to the disturbance of the riparian resource.

- **New MM 4.8.A-N2:** For sites not governed by an MSHCP, a general biological resources assessment (BRA) shall be required as part of the discretionary project review process at the County of Riverside's discretion. For example, if site inspection, aerial or other photos, resource agency data or any other information indicates potential for sensitive habitat to occur on, or be adversely affected by the proposed project. The BRA shall be prepared and reviewed as per the requirements outlined in Mitigation Measure 4.8.B-N1.

- **New MM 4.8.B-N1:** Prior to discretionary project approval for projects with the potential to substantially adversely affect sensitive (listed, candidate or special status) species or habitats not covered by an existing MSHCP or HCP, a general biological resource assessment (BRA) shall be performed. The following requirements shall apply:

  a. The BRA shall be performed by a Riverside County-approved biologist pursuant to a Memorandum of Understanding (MOU) executed between the biologist and the County of Riverside.

  b. The biology/environmental firm or biologist preparing the BRA must be on the County of Riverside's list of qualified consultants.

  c. Fieldwork must be performed by qualified biologists according to professional standards.

d. If included in the BRA, presence/absence surveys for specific plants must be conducted during the applicable blooming season or other conditions as deemed scientifically appropriate and valid.

e. Should affected species or habitat occur on the project site, then a "Focused Protocol Survey" must be prepared for those species using existing protocols established by the USFWS or CDFGCDFW. If no such protocols exist, the survey must be based on generally accepted biological survey protocols appropriate to the species.

The BRA requirement *may* be waived if any of the following conditions are documented to exist.

a. The area affected by the proposed project ("footprint" herein) consists entirely of built environment (structures, pavement, etc.) and none of the biota or plant material present (i.e., landscaping) represent likely habitat used by a sensitive species.

b. The Riverside County Environmental Resource Specialist (ERS) finds in writing that the proposed footprint does not have any biological resources expected to be used by a protected species or plant.

c. The project or activity proposed is to be performed under an existing incidental take permit, habitat conservation plan or other governing permit, license or authorization (i.e. Section 7 consultation) and no new significant effect to the covered species or other protected species or resource is expected to occur.

In addition to the items herein, the BRA shall also be prepared in accordance with the Riverside County "Guide to Preparing General Biological Resource Assessments," as well as any other requirements of the Riverside County Environmental Programs Department, Planning Department or other County of Riverside agency.

Upon receipt of the BRA, the Riverside County ERS shall review it and all supporting documentation. If the Riverside County ERS finds that the project does not have the potential to substantially affect sensitive species or habitat, no further mitigation is required. If the Riverside County ERS finds that the project has the potential to substantially adversely affect sensitive species or habitat, then additional mitigation will be developed and imposed to reduce such impacts to below a level of significance. Such mitigation may include but not be limited to obtaining an incidental take permits from the USFWS and/or CDFW, as applicable and acquisition and conservation of replacement habitat at appropriate ratios.

- **New MM 4.8.C-N1:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by Section 404 of the CWA, then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process. An assessment shall include, but not be limited to, identification and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal.

  Should any grading or construction be proposed within or alongside the banks of the watercourse or wetland, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the alteration of any watercourse or wetland, located either on site or on any required offsite improvement areas, complies with the U.S. Army Corp of Engineers Nationwide Permit

Conditions. Or, the land divider shall obtain a permit under Section 404 of the Clean Water Act. Copies of any agreements shall be submitted along with the notification.

- **New MM 4.8.C-N2:** If site conditions (for example, topography, soils, vegetation, etc.) indicate that the proposed project could affect riparian/riverine areas or federally protected wetlands as defined by CFGC Section 1600 *et seq*., then an appropriate assessment shall be prepared by a qualified professional as part of Riverside County's project review process. An assessment shall include, but not be limited to, identification and mapping of any wetland(s) or riparian resources present; evaluation of plant species composition, topography and hydrology; a soils analysis (where appropriate) and conclusions stating the presence or absence of jurisdictional wetlands. An assessment shall be completed as part of the CEQA review for the development proposal.

  Should any grading or construction be proposed within or along the banks of any natural watercourse or wetland located either on site or on any required offsite improvement areas, the land divider/permit holder shall provide written notification to the Riverside County Planning Department that the appropriate California Department of Fish and Wildlife notification pursuant to Sections 1601/1603 of the California Fish and Game Code has taken place. Or, the land divider shall obtain an "Agreement Regarding Proposed Stream or Lake Alteration" (Section 1601/1603 Permit). Copies of any agreements shall be submitted along with the notification.

- **New MM 4.8.D-N1:** Should a wildlife nursery site or native resident or migratory wildlife corridor be uncovered through a biological resources assessment (BRA), then a consultation with a Riverside County Ecological Resources Specialist (ERS) shall occur. The ERS shall make a determination if the site is essential for the long term viability of the species. If such a determination is made, then the ERS shall work with the applicant to avoid the effects of development on the resource in question and condition the land use case accordingly. Should significant impacts to nursery site or corridor not be avoidable, project applicant shall be required to ensure the preservation of comparable nursery or corridor habitat off site.

d. Significance

Implementation of all of the above regulations, General Plan policies and mitigation measures, would be sufficient to ensure that all of the incremental cumulative impacts listed above would be less than significant. Thus, build out of any of the above General Plan scenarios would contribute incrementally but not substantially to cumulative impacts.

8. Cumulative Effects on Cultural and Paleontological Resources

Section 4.9 (Cultural and Paleontological Resources) discusses existing cultural resources, including historical and archeological, within Riverside County, as well as the data sources used and any updates to them. The section also analyzes impacts from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both regulatory and CEQA-specific) necessary to ensure impacts are less than significant. As a result, topics already covered in Section 4.9 are not repeated here.

Section 4.9 provides a complete description of the cultural and paleontological resources known or expected to occur in Riverside County. This data includes Table 4.9-A (Cultural Resources of Riverside County) and Table 4.8-B (Paleontological Resources By Age, Formation and Location). It also includes Figure 4.9.2 (Historical Resources in Riverside County) and Figure 4.9.3 (Paleontological Sensitivity).

a. Existing Conditions

Cultural resources include areas, places, sites (particularly archeological sites), buildings, structures, objects, records or manuscripts associated with history or prehistory. Cultural resources may also include places that have historic or traditional associations or that are important for their natural resources. Paleontological resources consist of evidence of past life forms and their biota. They yield valuable information about the history of the earth and its past ecological settings. The cultural resource characteristics of Riverside County reflect patterns of human settlement, human use of the land and its resources, the artistic expressions on material culture and natural features, technologies and ideologies, as well as past environmental conditions. The existing paleontological setting reflects the paleontological record and related geology as they are currently known for Riverside County.

Historical and Archeological Resources: The large number of known prehistoric resources in Riverside County are documented via CHRIS, the California Historical Resources Information System, which is archived and maintained by the Eastern Information Center (EIC) at the University of California, Riverside (UCR); a branch of the California Office of Historical Preservation. Of these recorded sites within Riverside County, a few have been designated as federal, state and/or county cultural resources, as shown in Table 4.9.A in Section 4.9.

Prehistoric resources, artifacts and features include evidence of the 14,000-plus years of occupation and transient use by Native American populations. The Ethnohistoric Period of Riverside County at the time of Euro-American contact was distinguished by eight distinct resident cultural groups of Native Americans which occupied territories across Southern California and Riverside County. See Section 4.7 of EIR No. 441 for further background on these ethnological groups and cultures.

The advent of written documentation of events separates the Historic Era from the Prehistoric Period. In Riverside County, the Historic Era is generally said to begin around 1772, with the European exploration of the western coast of North America. As settlement patterns became established, systems of documentation became more regularized and increasingly preserved, creating a body of "historical record" from which historical resources may be ascertained, rediscovered and documented. In addition, many historic structures and sites dating from only the last century or so are extant (still standing), with many buildings still being used.

Table 4.9.A in Section 4.9 provides a catalog of the various cultural resources that have been listed within Riverside County, including the cities. Because of the vast size of Riverside County, Table 4.9.A only includes known listed sites/resources recognized at the levels indicated and should not be considered exhaustive or exclusive. In particular, the potential also exists for sites in Riverside County to have previously unknown archeological and historical resources present either on the surface or below ground. It is expected that a large number of archeological and historical resources occur within Riverside County that are currently undiscovered or unknown, particularly for resources located below the ground's surface. For sub-surface resources, discovery most often only occurs if the site is disturbed, such as through archeological investigation, or as more commonly happens, when construction activities such as grading or trenching are initiated.

Paleontological Resources: Fossils, which are nonrenewable paleontological resources, are important for dating sedimentary rocks and thus determining the time of movement of faults against which those sediments lie. Riverside County has an extensive record of fossil life. Eastern and western Riverside County have fossiliferous sediments that occur in various settings. In the western portion of Riverside County, fossils occur in sediments lying on the surface of crystalline bedrock or are deposited in or between the major fault zones. The eastern desert portions of Riverside County are marked by fault block mountains that contain older fossil-bearing sediments with younger fossil-containing deposits found around dry lakes, along high stands of the Salton Sea and in terraces left by the Colorado River. The geological eras represented by the fossil records found in Riverside

County are briefly summarized as follows, and as shown in Table 4.9.B. Figure 4.9.3 identifies the sensitivity of lands within Riverside County in relation to the potential for finding paleontological resources.

b. Future Conditions

Effects to *known* cultural resources (historical, archeological and paleontological) can be mitigated to less than significant levels through the regulatory and mitigation measures outlined in Section 4.9. However, since most cultural resources occur below ground (particularly paleontological resources, which are heavily geology-dependent), most cultural resources remain *unknown* and undiscovered until uncovered by ground-disturbing activity, for example site grading, road construction or trenching for pipelines. As a result, the likelihood of subsurface resource disturbance by future development typically cannot be fully determined in advance, particularly within the scope of this countywide programmatic EIR. Rather, such determinations will have to be made at the individual implementing project stage and addressed (mitigated) via the mechanisms outlined in Section 4.9. The cultural resources section (4.9) presents explicit, mandatory measures that must be taken when an artifact or other cultural resource is unearthed.

Nevertheless, since paleontological resources do correlate with geology, a generalized assessment of relative paleontological sensitivity was developed for much of Riverside County (i.e., see Figure 4.9.3) and the existing and proposed land uses associated with the various General Plan build out scenarios was assessed against this sensitivity to examine cumulative impacts. The results of this analysis are shown in Table 5.5-N, below.

The results indicate that build out of the existing General Plan (CURR GP) will result in disturbance of a great deal of additional land with high paleontological sensitivity (e.g., Ha or Hb). In particular, acreage devoted to urban/suburban uses will roughly double and the area potentially developed within the interface/wildland fringes of Riverside County will increase roughly ten-fold (23,000 to *nearly* 234,000 acres). Lastly, the area left vacant and open will decrease by roughly two-thirds.

For the updated General Plan (i.e., with-project) and cumulative General Plan build out scenarios (GPU/GPA 960 and CULM GP), similar trends will occur, however in much smaller amounts. The incremental increases associated with the individual future projects pursuant to these scenarios will be individually insignificant. However, cumulatively they will amount to upwards of 3% to 8% of the total area by category. Specifically, for the GPU/GPA960 scenario, uses within high-sensitivity areas will increase roughly *1%* ~~3%~~ in urban/suburban areas and *nearly 5%* ~~over 6%~~ for public facility uses. Though offset by a nearly 8% increase in open space and nearly 6% less development within interface/wildland areas, the overall cumulative effects to paleontologically sensitive lands will still be considerable. Similar trends are seen for the CULM scenario, with slightly higher amounts of urban/suburban and rural/agricultural uses (*5%* ~~4%~~ *and 1%* ~~3%~~, respectively) and no offsetting increase in vacant/open space ~~(rather, an additional 1% would be loss)~~. Public facility lands would *also remain about the same.* ~~decrease by roughly 4%, however this amounts to less than 500 acres, which is not enough to offset cumulatively considerable effects countywide.~~

Table 5.5-N: Cumulative Paleontological Effects in Riverside County

Paleontological Sensitivity Category	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
High A (Ha)[1]						
Existing Total	**20,360**	**42,080**	**19,230**	**341,770**	**6,680**	**430,120**
CURR GP Total	**29,730**	**50,560**	**223,700**	**107,340**	**6,620**	***417,950***
GP*U* / *GPA* 960 Δ (Change)	-430	+390	-1,430	+1,310	+290	+130
CULM GP Δ (Change)	*+2,180*	*+1,680*	*-3,490*	*+150*	*-330*	*+490*
High B (Hb)[2]						
Existing Total	**8,190**	**31,400**	**4,180**	**24,270**	**5,240**	**73,280**

Paleontological Sensitivity Category	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
CURR GP Total	***25,480***	***25,150***	***10,230***	***15,920***	***3,850***	***75,630***
GP*U* / *GPA* 960 Δ (Change)	*+1,220*	*-1,610*	*+90*	*+60*	*+190*	*-50*
CULM GP Δ (Change)	*+610*	*-1,020*	*+330*	*+40*	*+40*	*0*
High Sensitivity - subtotal						
Existing Total	**28,550**	**73,480**	**23,410**	**366,040**	**11,920**	**503,400**
CURR GP Total	***55,210***	***70,710***	***233,920***	***123,260***	***10,630***	***493,710***
GP*U* / *GPA* 960 Δ (Change)	*+790*	*-1,220*	*-1,340*	*+9,200*	*+680*	*+60*
CULM GP Δ (Change)	*+2,790*	*+660*	*-3,160*	*-1,260*	*-470*	*+420*
Cumulative B/O Total	***58,790***	***70,150***	***229,430***	***131,200***	***10,840***	***494,190***
Change from Exist	***+30,240***	***-3,330***	***+205,020***	***-241,220***	***-960***	***-9,250***
Low[3]						
Existing Total	**42,390**	**207,500**	**631,290**	**1,903,350**	**17,000**	**2,801,530**
CURR GP Total	**42,720**	***170,050***	**1,547,800**	**973,830**	**13,640**	***2,748,040***
GP*U* / *GPA* 960 Δ (Change)	*+1,530*	+810	-10,370	+8,960	+310	*+1,240*
CULM GP Δ (Change)	*+3,190*	*+2,200*	*-6,470*	*+800*	*+160*	*-120*
Undetermined[4]						
Existing Total	**8,370**	**84,330**	**94,090**	**483,430**	**3,460**	**673,680**
CURR GP Total	**7,140**	**57,060**	**524,280**	**141,650**	**5,880**	**736,010**
GP*U* / *GPA* 960 Δ (Change)	+720	+90	-1,140	-1,070	+80	-1,320
CULM GP Δ (Change)	*+2,730*	*+1,200*	*-3,310*	*-1,170*	*+160*	*-390*
Waterbodies						
Existing Total	**0**	**0**	**0**	**40,630**	**0**	**40,630**
CURR GP Total	**0**	**0**	**0**	**40,610**	**0**	**40,610**
GP*U* / *GPA* 960 Δ (Change)	0	0	0	0	0	0
CULM GP Δ (Change)	0	0	0	+20	0	+20
Total Area at Build Out						
Existing Total	**79,310**	**365,310**	**748,790**	**2,793,450**	**32,380**	**4,019,240**
CURR GP Total	***105,070***	***298,820***	***2,306,010***	***1,279,350***	***29,990***	**4,019,240**
GP*U* / *GPA* 960 Δ (Change)	*+3,040*	*-320*	*-12,840*	*+9,260*	*+870*	0
CULM GP Δ (Change)	*+8,710*	*+4,060*	*-12,940*	*-160*	*+330*	0
Cumulative B/O Total	***116,820***	***302,560***	***2,280,230***	***1,288,440***	***31,190***	***4,019,240***
Change from Exist	***+37,510***	***-62,750***	***+1,531,440***	***-1,505,000***	***-1,190***	***0***

Footnotes:
1. Geological formation or mapped rock units known to contain or have the correct age and depositional conditions for potentially containing significant paleontological resources.
2. Equivalent to High A, but based on the occurrence of fossils at a specified depth below the surface.
3. Determined through field survey.
4. No literature or studies (published or unpublished) available for the underlying geology. More study needed prior to determining paleontological potential.
5. *See Tables 8.1 through 8.4 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Paleontological Sensitivity), 1999, and Project Application Data, 2013 *and 2014*.

c. Impacts

Future development accommodated will contribute incrementally to cumulative impacts to cultural and paleontological resources as the county builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Land disturbances from construction of new development would uncover and/or adversely affect presently unknown historic or archeological resources. See discussion under Impacts 4.9.A and 4.9.B in Section 4.9.

- Future development would result directly or indirectly in the destruction of unique paleontological resources, sites or unique geological features, particularly previously unknown subsurface resources. See discussion under Impact 4.9.C.

- Lastly, since uncovered human remains can also be of modern origins, and hence potentially part of a crime scene, specific County of Riverside regulations require contacting the Riverside County Coroner's Office for initial assessment of any uncovered human remains. Specifically, HSC Section 7050.5(b) states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to their treatment and disposition has been made. If the remains are determined not to be modern, subsequent treatment of the discovery is handled in coordination with the Tribe determined by the State of California to be the "Most Likely Descendent," see Existing MM 4.9.1A for additional details.

(2) Non-Substantial Cumulative Impacts

- Land disturbances from construction of development would adversely affect known historic and archeological resources. See discussion under Impacts 4.9.A and 4.9.B.

- Future development could disturb undiscovered human remains, including those interred outside of formal cemeteries. Remains can be historic, prehistoric or modern. All remains are first examined by the Riverside County Coroner's Office. Those deemed modern are handled as a criminal case. Those deemed archeological (historic or prehistoric) are handled per applicable regulations, in particular those addressing Native American and ancestral remains. See Impact 4.9.D discussion.

d. Mitigation

As described in detail in Section 4.9.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative impacts to cultural and paleontological resources. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.9.3 for details on each regulation.

- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Title 33, Code of Federal Regulations (Section 325, Appendix C)
- Traditional Tribal Cultural Places Act – GC Section 65352.3)
- California Public Resources Code, Section 5097 - Regulating Paleontological Resources
- California Environmental Quality Act – CCR, section 15064.5
- Ordinance No. 578 - Historic Preservation Districts

Key General Plan Policies: See Section 4.9.3 for text of each policy.

- Land Use Policies: LU 4.5
- Open Space Policies: OS 19.2 – 19.9

(1) Regulatory Compliance

Existing Mitigation Measures: As part of EIR No. 441 certified for the RCIP General Plan adopted October 2003, the following mitigation measure (MM) applies to future development.

- **Existing MM 4.7.1B:** Avoidance is the preferred treatment for cultural resources. Where feasible, project plans shall be developed to allow avoidance of cultural resources. Where avoidance of construction impacts is possible, capping of the cultural resource site and avoidance planting (e.g., planting of prickly pear cactus) shall be employed to ensure that indirect impacts from increased public availability to the site are avoided. Where avoidance is selected, cultural resource sites shall be placed within permanent conservation easements or dedicated open space.

New Mitigation Measures: As part of EIR No. 521, the following new mitigation measure (MM) is proposed to ensure that impacts are reduced to less than significant where feasible.

- **New MM 4.9.B-N1:** If avoidance and/or preservation in place of cultural resources is not feasible, the following mitigation measures shall be initiated for each impacted site:

  a. Discoveries shall be discussed with the Native American tribal (or other appropriate ethnic/ cultural group representative) and the Riverside County Archeologist, and a decision shall be made with the concurrence of the Planning Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) appropriate for the cultural resource.

  b. Further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to appropriate preservation or mitigation measures.

e. Significance

The analysis above indicates that future development consistent with any of the General Plan build out scenarios analyzed, including the proposed project (GPA No. 960), would contribute to a variety of incremental impacts related to cultural resources. The regulatory and mitigation measures presented in Section 4.9 were deemed sufficient to ensure that a project's individual cultural impacts can be avoided, reduced or minimized to less-than-significant levels. Cumulatively considerable impacts will occur as Riverside County grows pursuant to the General Plan, regardless of the scenario. The removal or destruction of cultural resources and the cumulative effect of their disturbance cannot be guaranteed to be reduced to less than significant levels even with mitigation. This is due to the unknown nature of the extent, location and cultural significance of such resources. For these reasons, both the updated General Plan build out scenario (encompassing the changes proposed by the project, GPA No. 960), as well as the cumulative General Plan scenario (i.e., updated per the GPAs listed previously), would contribute substantially to significant cumulative impacts to previously unknown historical, archeological, cultural and paleontological resources.

9. Cumulative Effects on Energy Resources

Section 4.10 (Energy Resources) discusses existing energy resources and demands within Riverside County, as well as the sources used for this data and any updates made. The section also addresses the energy conservation issues identified in State CEQA Guidelines, Appendix F. It also analyzes energy impacts from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both regulatory compliance and EIR mitigation) necessary to ensure impacts are less than significant. Topics covered in Section 4.10 are not repeated here.

Section 4.10 includes a complete description of the energy resources generated in Riverside County, as well as an analysis of the resources used currently and projected to be needed as the county builds out. This data includes Table 4.10-A (Summary of Electrical Production), Table 4.10-B (Southern California Edison System Projects), Table 4.10-C (Imperial Irrigation District Electricity System Projects), Table 4.10-D (Energy Consumption by Major Energy Provider), Table 4.10-E (Theoretical Annual Electricity Demand for Existing Uses of Land), Table 4.10-F (Theoretical Annual Electricity Demand for Proposed Land Use Build Out), Table 4.10-G (Theoretical Annual Natural Gas Demand for Existing Uses of Land) and Table 4.10-H (Theoretical Annual Natural Gas Demand for Proposed Land Use Build Out). It also includes Figure 4.10.1 (Electricity Providers Serving Riverside County) and Figure 4.10.2 (Energy Transmission Corridors and Lines). Section 4.10 also discusses the role of energy regulations and conservation.

a. Existing Conditions

Provision of adequate power and energy is a significant component of public services in Riverside County. The following section describes the current power and energy resources serving unincorporated Riverside County, including electricity, natural gas and alternative energy sources.

According to the California Energy Commission (CEC), all of the fossil-fuel powered electrical generators in Riverside County use natural gas as the "primary fuel" in their "oil/gas" type facilities. Some of the generating facilities located outside Riverside County that provide electricity for use in Riverside County use other fossil fuels, including diesel and coal, in addition to natural gas, as well as a variety of alternate (renewable) energy sources. The CEC tracks usage of renewable energy resources which include: biomass and waste, geothermal, solar, wind and "small hydroelectric," which the CEC defines as facilities generating under 30 megaWatts (MW).

b. Future Conditions

Typically, the introduction of new development into an area brings with it an attendant new demand for energy resources, including natural gas and, in particular, electricity. Development may also utilize propane and other fuels. Accordingly, spatial analysis was performed to examine the cumulative demands of General Plan build out on energy resources. To encapsulate the scope of impacts resulting from build out, the various General Plan build out scenarios were analyzed for theoretical use/demand for the energy resources. These energy analyses reflect the range of impacts associated with the *theoretical* demand for energy (electricity and natural gas) for the specific land uses indicated for each scenario. For specifics on methodology used, see Section 4.10.4.

Tables 5.5-O and 5.5-P, below, show *build out* ~~the cumulative~~ conditions for the three General Plan ~~build out~~ scenarios examined in this section: Existing General Plan (CURR GP), the updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP). It should be noted that the baseline (existing) energy levels listed in the table are theoretical, i.e.,

based on standardized modeling. The same modeling procedures were used to estimate results for each of the build out scenarios. By controlling these variables, valid comparisons amongst the scenarios are possible.

These data should not be construed as the *actual* energy usage for a given location, a specific existing use or its future development. Privacy laws protect such information from being publicly released for private properties. Further, specific information is typically provided by the associated utility provider when an implementing development is proposed. Each utility provider has developed its own methods, formulae and factors for projecting future demand, which are neither available nor practicable for calculating for this programmatic EIR. In general, however, where the proposed project is consistent with regional (Southern California Association of Governments [SCAG]) and county growth projections, it is assumed long-range planning undertaken by individual utilities and service providers would be sufficient to meet future needs, since they also reference these same SCAG and county projections.

The results of the energy modeling (electricity and natural gas, the only two energy sources for which sufficient information was available for accurate modeling) for baseline (existing) conditions and the various cumulative build out scenarios are presented in Tables 5.5-O and 5.5-P, respectively. All data represent direct energy usage. Indirect energy uses, such as by water providers, are addressed separately at the regional scale (e.g., see Section 4.7). Because energy use depends on the technology, generation source, service area size and a number of other factors, specific indirect energy use projections are not feasible as part of this programmatic EIR. See Section 4.10.4 for specifics on the assumptions used in these analyses.

Table 5.5-O: Cumulative Effects on Theoretical Electricity Demand

ELECTRICITY DEMAND *(in MWh/y)*[1,2]	Existing Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU / GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Sub.	*1,076,500*	*16%*	*1,977,100*	*29%*	*1,984,300*	*29%*	*2,043,500*	*27%*
Residential, Rural/Agri.	*27,500*	*<1%*	*425,300*	*6%*	*401,600*	*6%*	*414,100*	*5%*
Residential, Interf./Wild.	*60,400*	*1%*	*522,700*	*8%*	*483,200*	*7%*	*486,800*	*6%*
RESIDENTIAL - subtotal	***116,400***	***17%***	***2,925,100***	***42%***	***2,869,100***	***42%***	***2,944,400***	***39%***
Commercial[4]	*3,208,000*	*47%*	*583,000*	*8%*	*59,000*	*9%*	*1,171,000*	*15%*
Industrial[4]	*2,419,000*	*36%*	*338,400*	*49%*	*3,398,000*	*49%*	*3,472,000*	*46%*
ECONOMIC - subtotal	***5,627,000***	***83%***	***3,967,000***	***58%***	***3,997,000***	***58%***	***4,643,000***	***61%***
Total	***6,791,400***		***6,892,100***		***6,866,100***		***7,587,400***	
ENVI Δ (Difference from EXIST)	---	---	*+100,700*	*+1%*	*+74,700*	*+1%*	*+796,000*	*+12%*
GP Δ (Difference from CURR)	---	---	---	---	*-26,000*	*-0.4%*	*+695,300*	*+10%*

Footnotes:
1. MWh/y = megawatt-hours per year (rounded to nearest 100).
2. Electricity Factors: Residential 5,626 kWh/y/du; Commercial 13.20 kWh/y/sf; Industrial 10.50 kWh/y/sf.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO & CT. Industrial uses include HI, LI & BP. Uses too variable for factors omitted.
5. *See Table 18.1 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*.

As shown in Tables 5.5-O and 5.5-P, General Plan build out (of any scenario) will contribute incrementally to the demand for energy resources within Riverside County and result in varying degrees of impacts in order to meet such demand, depending on the size, scope and location of the incremental development proposed. For both the with-project scenario (GPU/GPA960) and the cumulative GPAs scenario (CULM GP), General Plan build out would result in cumulatively considerable increases in demand for both electricity ~~(+21%)~~ and natural gas ~~(+23%)~~ to serve the additional residential units that would result, even though individual increases associated with implementing projects over time would be incrementally insignificant. For natural gas, the CULM scenario would also significantly increase incremental demand as a result of additional commercial development.

It should be noted that the theoretical demands estimated in the above tables are based on worst-case (business-as-usual) scenarios that do not take into account any energy efficiency and other conservation standards enacted by the County of Riverside or State of California. As outlined in Section 4.7, implementation of specific building energy-efficiency standards outlined in Riverside County's proposed Climate Action Plan and other energy-related measures affecting electricity supplies, are documented to reduce 2020 electricity demands by nearly half (48%). A full discussion of these measures, including their relationship to existing and proposed energy conservation efforts of both the State of California and the County of Riverside, is provided in Section 4.7.

Table 5.5-P: Cumulative Effects on Theoretical Natural Gas Demand

NATURAL GAS DEMAND *(in kcf/y)*[1,2]	Existing Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Sub.	*15,301,800*	*50%*	*28,102,600*	*56%*	*28,204,900*	*57%*	*29,047,100*	*55%*
Residential, Rural/Agri.	*391,100*	*1%*	*6,045,700*	*12%*	*5,708,200*	*11%*	*5,885,700*	*11%*
Residential, Interf./Wild.	*858,200*	*3%*	*7,429,300*	*15%*	*6,868,700*	*14%*	*6,919,900*	*13%*
RESIDENTIAL - subtotal	***16,551,100***	***55%***	***41,577,600***	***82%***	***40,781,800***	***82%***	***41,852,700***	***80%***
Commercial[4]	*8,458,000*	*28%*	*1,537,000*	*3%*	*1,579,000*	*3%*	*3,088,000*	*6%*
Industrial[4]	*5,340,000*	*18%*	*7,471,000*	*15%*	*7,502,000*	*15%*	*7,666,000*	*15%*
ECONOMIC - subtotal	***13,798,000***	***45%***	***9,008,000***	***18%***	***9,081,000***	***18%***	***10,754,000***	***20%***
Total	***30,349,100***		***50,585,600***		***49,862,800***		***52,606,700***	
ENVI Δ (Difference from EXIST)	---	---	*+20,236,500*	*+67%*	*+19,513,700*	*+64%*	*+22,257,600*	*+73%*
GP Δ (Difference from CURR)	---	---	---	---	*-722,800*	*-1%*	*+2,021,100*	*+4%*

Footnotes:
1. kcf/y = thousand cubic feet per year (rounded to nearest 100).
2. Natural Gas Factors: Residential 79,980 cfy/du; Commercial 34.8 cfy/sf; Industrial 27.6 cfy/sf.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. GPU/GPA960 = Current General Plan as amended per GPA No. 960. CULM GP = Current General Plan as amended per list of active GPAs. See Section 5.5.1 for full descriptions of each.
4. Commercial uses include CR, CO & CT. Industrial uses include HI, LI & BP. Uses too variable for factors omitted.
5. *See Table 18.2 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*.

c. Impacts

Future development will contribute incrementally to cumulative energy demand and impacts on electricity and natural gas infrastructure as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Build out of any of the General Plan scenarios will introduce new development and intensify existing development on previously vacant or less-developed lands, incrementally increasing the demand for electricity over time.

- Build out of any of the General Plan scenarios will also introduce new development and intensify existing development on previously vacant or less-developed lands, increasing the demand for natural gas.

(2) Non-Substantial Incremental Impacts

- As Riverside County builds out pursuant to any of the General Plan scenarios, energy demand increases, additional transmission lines and pipelines for conveying electricity, natural gas, etc., may be necessary to adequately meet energy demands.

- The project (and hence, the GPU/GPA960 scenario) proposes new policies and programs targeting energy efficiency and conservation directly in order to reduce greenhouse gas emissions by roughly 30% (see EIR Section 4.7, Greenhouse Gases). As a result of implementation of such measures, new development would be more energy-efficient and less wasteful of energy than existing uses or proposed uses without GPA No. 960. Thus, in terms of energy efficiency and conservation, the project would result in incremental net benefits from these additional energy savings.

d. Mitigation

As described in detail in Section 4.10.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative energy resource impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.10.3 for details on each regulation, as well as Section 4.7.3 for details on energy conservation measures derived from greenhouse gas reduction efforts within Riverside County.

- California Energy Code – CCR Title 24, Part 6: Forms the California Energy Code, (often referred to simply as "Title 24," for short). Formally titled "California's Energy Efficiency Standards for Residential and Nonresidential Buildings."
- California Green Building Standards Code - CCR Title 24, Part 11: Encompasses the "California Green Building Standards Code."
- California's Renewables Portfolio Standard - Senate Bill 1078 (2002)
- California's Renewable Energy Transmission Initiative (RETI)
- Riverside County Climate Action Plan (proposed in conjunction with GPA No. 960)
- Riverside County Wind Implementation Monitoring Program (WIMP)
- Board of Supervisors (BOS) Policy H-29 - Sustainable Building Policy
- BOS Policy H-4 - Conservation of Energy in County Facilities
- Riverside County Weatherization Program
- Riverside County Low Income Energy Assistance Program

Key General Plan Policies: See Section 4.10.3 for the text of each policy.

- Air Quality Element Policies: AQ 4.1-4.4, 5.2-5.4, 13.1, 18.3-18.5, 19.3, 20.10-20.12, 20.18-20.21 and 20.25-20.28
- Open Space Element Policies: OS 10.1, 10.2, 11.1-11.4, 12.1-12.4 and 16.1-16.14

(2) CEQA Mitigation

The following CEQA mitigation measures (MMs) were adopted as part of certification of EIR No. 441 for the RCIP General Plan in October 2003 and remain applicable to GPA No. 960 and future General Plan implementing projects:

- **Existing MM 4.8.1A:** The County [of Riverside] shall review all development proposals prior to the approval of development plans to guarantee that sufficient energy resources and facilities are available to supply adequate energy to the proposed project and associated uses.

- **Existing MM 4.8.1B:** The County [of Riverside] shall review all development plans prior to approval to guarantee that energy conservation and efficiency standards of Title 24 are met and are incorporated into the design of the future proposed project.

e. Significance

Implementation of all of the above regulations, General Plan policies and mitigation measures, would be sufficient to ensure that all of the incremental (non-substantial) cumulative impacts listed above would be less than significant. In particular, the project's incremental contribution to energy conservation efforts would be cumulatively beneficial. In terms of increased demand for energy, in particular electricity and natural gas, build out of any of the above General Plan scenarios would result in cumulatively considerable impacts to energy resources.

10. Cumulative Effects on Flood and Dam Inundation Hazards

Section 4.11 (Flood and Dam Inundation Hazards) discusses existing flooding and dam inundation hazards within Riverside County, as well as the sources used (and any updates made to them) for this data. The section also addresses flooding related hazards, such as seiche, mudflow, etc., and analyzes flood hazards that would arise from future development accommodated by the project, GPA No. 960, as well as measures (both regulatory and mitigation) to ensure impacts are less than significant. Thus, areas already covered in Section 4.11 are not repeated here. Hydrology, water quality and storm drainage issues are discussed in Section 4.19 (Water Resources).

Section 4.11 provides a complete description of flood-related hazards affecting Riverside County, as well as analysis of the existing and future flooding risks projected to occur as Riverside County builds out. This data includes Table 4.11-A (Potential Flooding Sources Studied in Riverside County), Table 4.11-B (National Inventory of Dam Data) and Table 4.11-C (Local Flood Risk Management Agencies). It also includes Figure 4.11.1 (100-Year Flood Hazard Zones) and Figure 4.11.2 (Dam Inundation Failure Zones in Riverside County).

a. Existing Conditions

In Riverside County, the three largest drainages of concern for main-stream flooding are the Santa Ana River, San Jacinto River and Whitewater River. In the western portion of Riverside County, the large rivers are dry most of the year and only pose flood threats to developments within the floodplain during general storms of long duration. In the western county, these include the Santa Ana, San Jacinto, San Gorgonio and Santa Margarita Rivers, as well as Temescal and Murrieta Creeks. Lake Elsinore and other lakes, as well as various alluvial fans throughout Riverside County, are also susceptible to flooding, for example Millard Canyon. Major floods along the San Jacinto River resulting from intense rainfall have been shown typically to peak in approximately 1.5 days with a total duration of flooding of four days.

Eastern Riverside County, being marked by extensive desert, does not possess as many major flood-prone drainages; the Whitewater and Colorado Rivers being the two principal ones. Rather, because of the arid climate and extremely porous (sandy) soils, water flows tend to pass rapidly through the region. Tributaries to the major rivers present additional flood hazards, mostly caused by local thunderstorms. Within Coachella Valley, there are many smaller washes that run out of the surrounding mountains and down into the valley floor, in some cases emptying into Whitewater River to the northwest or the Salton Sea to the southeast. The desert areas extending to the east from the Palm Springs area are also susceptible to sheet flow flooding, with flow depths of generally less than 2 feet. These types of flows leave the mouths of canyons and often follow unpredictable paths. Lastly, the desert also contains numerous washes (for example, Morongo Wash) and alluvial fans that are susceptible to flooding.

Additionally, many of the smaller drainages throughout Riverside County, particularly those running through the alluvial fans that flank Riverside County's hillsides, are susceptible to smaller-scale floods and also flash-flooding. Figure 4.11.1 in Section 4.11 shows the areas of Riverside County considered potentially at risk for flooding based on information from FEMA mapping, plus DWR and County of Riverside data. Key waterbodies are described in Section 4.11.2 and a list of all potential flooding sources studied by FEMA are provided in Table 4.11-A.

b. Future Conditions

Mainstream Flooding and Dam Inundation: Table 5.5-Q (Cumulative 100-Year Floodplain Effects), below, shows the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing (*2009* ~~2008~~) General Plan (CURR GP), the updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP), as well as GPA No. 960. As outlined in Table 5.5-Q, General Plan build out (regardless of scenario) will contribute incrementally to hazards due to development within areas prone to flooding, dam inundation, seiche, alluvial fan flooding, mudflow and other related conditions. Through the means outlined in Section 4.11.5, future development occurring pursuant to any of the General Plan build out scenarios would incrementally introduce additional people, property, homes, public facilities, roads and other infrastructure into 100-year flood hazard areas.

For build out of the current General Plan, the data indicate that the amount of land proposed for urban and suburban uses situated within the current 100-year floodplain would more than double (increase 126%). Interface/Wildland uses proposed within the floodplain would increase even more (nearly 740%) and Vacant/ Open Space lands within floodplains would decrease 75% (mainly due to conversion to developed uses). The CULM build out scenario shows similar trends.

Table 5.5-Q: Cumulative 100-Year Floodplain Effects

SCENARIO	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
EXIST (Existing Uses of Land)						
In Floodplain[2, 3]	14,860	79,330	41,620	410,300	7,720	553,830
Outside Floodplain[4]	64,440	285,920	707,000	2,383,390	24,660	3,465,410
Total	**79,300**	**365,250**	**748,620**	**2,793,690**	**32,380**	**4,019,240**
CURR GP (Current[1] General Plan Build Out)						
In Floodplain[2, 3]	*33,530*	*55,900*	*349,020*	101,410	*4,930*	*544,790*
Change from EXISTING	***+18,670***	***-23,430***	***+307,400***	***-308,890***	***-2,790***	***-9,030***
Outside Floodplain[4]	*71,930*	*242,240*	*1,956,800*	*1,178,260*	*25,220*	*3,474,450*
Total	***105,460***	***298,140***	***2,305,820***	***1,279,670***	***30,150***	**4,019,240**
GPU/GP960 (Updated General Plan with GPA 960 Build Out)						
In Floodplain[2, 3]	*34,170*	*55,420*	*349,590*	101,690	*5,200*	546,070
Change from CURR GP	***+640***	***-480***	***+570***	***+280***	***+270***	***+1,280***
Change from EXISTING	***+19,310***	***-23,910***	***+307,970***	***-308,610***	***-2,520***	***-7,760***

SCENARIO	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
Outside Floodplain[4]	*74,350*	*242,390*	*1,943,370*	1,187,240	*25,820*	3,473,170
Total	**108,520**	**297,810**	**2,292,960**	**1,288,930**	**31,020**	**4,019,240**
CULM GP (Cumulative GP with Additional Proposed GPAs Build Out)						
In Floodplain[2, 3]	*38,440*	*53,770*	*346,880*	*101,950*	*5,150*	*546,190*
Change from CURR GP	***+4,270***	***-1,650***	***-2,710***	***+260***	***-50***	***+120***
Change from EXISTING	***+23,580***	***-25,560***	***+305,260***	***-308,350***	***-2,570***	***-7,640***
Outside Floodplain[4]	*76,000*	*248,690*	*1,946,090*	*1,176,940*	25,330	*3,473,050*
Total	**114,440**	**302,460**	**2,292,970**	**1,278,890**	**30,480**	**4,019,240**

Footnotes:
1. That is, the General Plan as of end of *2009* ~~2008~~.
2. Includes updates to floodplain as proposed in GPA No. 960 (see changes described in Section 4.11.4).
3. *"IN" denotes land in any 100-year floodplain, Flooding Zone A or dam inundation zone.*
4. *"OUT" is derived from total area data for each land use group (USUB, RURAG, etc.) from Table 4.1 (Agriculture).*
5. *See Tables 9.1 through 9.3 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County Planning Dept., project application data, 2013 *and 2014*. *RCIT* GIS Dept., RCLIS layer, 100-Year Floodplains (updated), 2012.

Since the General Plan build out horizon is approximately 2060, this means that the flooding and inundation risks associated with these areas would increase incrementally over 50 years. If development were allowed to occur in an unregulated fashion, county growth would result in potentially significant impacts. However, per federal, state and county regulations, many types of habitable structures (including homes, schools, etc.) are not allowed in 100-year floodplains. Compliance with these and a variety of other regulations and programs, as described below, would ensure that risks associated with development within 100-year flood hazard and other water hazard areas would be cumulatively less than significant.

Further, in terms of the GPU scenario, which accommodates the changes proposed by the project, Table 5.5-Q indicates that its incremental contributions *to development of the current General Plan within potential flooding areas* would be insubstantial (between *0-5%* ~~1-4%~~ at most) for the various development categories. Thus, the project's contribution to flooding risks would not be cumulatively considerable.

As detailed in Section 4.11.5, future development within Riverside County (regardless of scenario) also has the potential to incrementally introduce people, property, public facilities, roads and other infrastructure into areas potentially at risk of dam inundation or flooding due to other sources, e.g., failure of a levee or of a debris basin above an alluvial fan. As with 100-year floodplain effects, without measures that reduce flooding risks, this impact would be potentially cumulatively considerable. However, compliance with existing regulations and programs, as described below, would ensure that risks associated with development in dam inundation zones and other areas potentially prone to flooding or inundation hazards due to failure of a flood control facility are less than significant.

Drainage, Runoff and Hydrology Alterations: Future development would result in the incremental alteration of drainage patterns throughout Riverside County that would contribute to cumulative changes in drainage patterns, runoff and hydrological alternations. In addition to direct drainage alterations, temporary ponding or flooding could also result from development activities, reducing the water-carrying capacity of drainages, flood control facilities, storm drains, etc. Such drainage alterations and changes in runoff conditions must be reduced to prevent serious cumulative flooding risks.

Future development would also result in new land uses that would convert permeable surfaces (such as undisturbed soils and vacant lands) to impermeable surfaces, such as buildings (rooftops), parking lots and roadways. Increased impermeable surfaces would substantially alter the existing drainage patterns by incrementally increasing surface runoff, thereby increasing flooding hazards. Impermeable surfaces and development would also divert natural runoff patterns potentially resulting in flooding. Developed areas where much of the land surface is

covered by roads, buildings and other impermeable structures have little capacity to store rainfall. As a result of accelerated runoff from disturbed areas, peak discharge, volume and frequency of floods increases incrementally in nearby streams. To prevent this urban runoff from creating flood hazards, future development must be designed to direct and channel runoff appropriately into storm drain facilities adequately sized to handle expected flows. Such measures are, in fact, included as Conditions of Approval required for implementing projects; see regulatory compliance measures, below.

Seiche: Seiche, a standing wave in a completely or partially enclosed body of water, can in certain circumstances result in inundation (flooding) of areas located along the shoreline of a lake or reservoir. In Riverside County's semi-arid climate, naturally occurring enclosed water bodies are not common and none have documented seiche risks. For man-made water bodies, such as reservoirs, these are typically built by local municipalities or water districts to provide water service to local residents and businesses. Accordingly, most land around the reservoirs' shorelines is in public holdings, which restrict private land development and minimize risk of inundation from seiche. Moreover, such public land holdings are not within the jurisdiction of unincorporated Riverside County.

Mudflows and Debris Flows: Unincorporated Riverside County contains many areas with steep slopes and mountainous areas that could be subject to mudflows in the event of large amounts or precipitation. Narrow canyons, arroyos, alluvial fans and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Areas of proposed land use-related changes with the potential for introducing or intensifying future development will contribute incrementally to increased exposure to mudflow hazards if they are: on or below a steep or unstable slope; within a steep-sided canyon; within an area with flashflood potential; on loose, unconsolidated soils; or in an area denuded of vegetation by recent wildfire, particularly if any of the other factors also occur. Flashflood potential generally exists along any canyon, swale or other low-lying area in which heavy precipitation fall may be channeled rapidly and unexpectedly. Risks to future development as a result of flashflood are minimized through the various regulatory floodplain and drainage flow control measures (as discussed under Impacts 4.11.A, 4.11.B and 4.11.C). In addition, site design and engineering requirements established for 100-year flood hazard management, e.g., under Riverside County Ordinance No. 458, generally provides sufficient measures to ensure the protection of development on alluvial fans.

c. Impacts

Future development accommodated will contribute incrementally to cumulative flooding and inundation impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). With the regulatory and mitigation measures proposed (see below), cumulative impacts would be avoided, reduced or minimized to non-substantial levels. Specifically, these impacts will include the following:

- Encroachment into areas of mapped 100-year floods (including some alluvial fans) and other delineated flood hazards areas. Encroaching land uses would incrementally increase the people, structures and property at risk from a flooding event.

- Placement of structures within 100-year flood hazard areas to accommodate future growth can incrementally contribute to the impediment or redirection of flood flows. This could expose existing people, structures and property, as well as those introduced by new development, to increased flooding risks.

- Future development would incrementally increase the structures, including habitable ones, within dam inundation zones, alluvial fan flooding zones and other areas of potential flood hazard. Such development would be at greater risk of flood hazards should a dam, levee debris basin or other critical flood control structure fail.

- Development throughout Riverside County would incrementally alter drainage patterns, streams and river courses. It would also cumulatively increase surface runoff through the introduction of non-permeable surfaces (roofs, pavement, roads, etc.). If not properly managed, this would cause hydrological changes that could expose existing and new people, structures and property to increased flooding risks.

- Future development in areas subject to seiche have the potential to threaten people, structures and property. There is no documented significant potential for seiche in any of the waterbodies within Riverside County. Based on morphology and hydrology, however, two waterbodies in Riverside County (Lake Perris and Lake Elsinore) may have the potential for seismically induced seiche. Thus, future development downstream from or within the seiche flooding zones of these waterbodies may cumulatively increase the number of people and property potentially at risk. However, setbacks and flood hazard area regulations are expected to be sufficient protection against significant risks and thus future development along or near lakes and reservoirs is considered to be at minimal risk.

- Due to its inland location, by definition there are no tsunami risks, cumulative or otherwise, in Riverside County.

- Mudflow or debris flow can occur in areas with steep slopes, particularly areas with loose soils and/or denuded of vegetation (e.g., fire burn areas) when exposed to large amounts of precipitation, and narrow canyons, arroyos and desert channels are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Growth within Riverside County will incrementally increase the people and property potentially at risk for mudslide. However, when addressed through the required soil engineering, site design and maintenance, these risks can be maintained at less than significant.

d. Mitigation

As described in detail in Section 4.11.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative flooding and inundation impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.11.3 for details on each regulation.

- FEMA Floodplain National Flood Insurance Program (see Ordinance No. 458)
- Federal Water Pollution Control Act of 1972 - Clean Water Act [CWA] Section 404
- National Pollution Discharge Elimination System (NPDES) per the CWA
- Cobey-Alquist Floodplain Management Act
- Ordinance No. 348 - Regulating Land Use
- Ordinance No. 457 - Adopting and Amending Various Building and Construction Codes
- Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program

- Ordinance No. 461 - Road Improvement Standards
- Ordinance No. 659 - Development Impact Fee (DIF) Program

Key General Plan Policies: See Section 4.11.3 for the text of each policy.

- Safety Element Policies: S 4.1-4.10, 4.12, 4.16-4.22

(2) CEQA Mitigation

The following CEQA mitigation measures were adopted as part of certification of EIR No. 441 for the RCIP General Plan in October 2003 and remain applicable to GPA No. 960 and future General Plan implementing projects:

- **Existing MM 4.9.1 A:** LOMA and LOMR-F are documents issued by FEMA that officially remove a property and/or structure from a special flood hazard area of a Flood Insurance Rate Maps (FIRM). These letters shall be accepted by Riverside County where applicable.
- **Existing MM 4.9.1 B:** Riverside County shall prohibit alteration of floodways and channelization unless alternative methods of flood risk management are found to be technically, economically and practicably infeasible.
- **Existing MM 4.9.1 C:** Riverside County shall not necessarily require all land uses to withstand flooding. These may include land uses such as agricultural, golf courses and trails. For these land uses, flows shall not be obstructed, and upstream and downstream properties shall not be adversely affected by increased velocities, erosion backwater effects, concentration of flows and adverse impacts to water quality from point and nonpoint sources of pollution.
- **Existing MM 4.9.1 D:** Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.
- **Existing MM 4.9.2A:** Riverside County shall require that all structures (residential, commercial, and industrial) be flood-proofed from the 100-year storm flows. In some cases, this may involve elevating the finished floor more than one foot.
- **Existing MM 4.9.2B:** Riverside County shall require that fully enclosed areas that are below finished floors have openings to equalize the forces on both sides of the walls.
- **Existing MM 4.9.2C:** Riverside County shall require that for agricultural, recreation or other low-density uses, flows are not obstructed and that upstream and downstream properties are not adversely affected by increased velocities, erosion backwater effects, or concentration of flows.
- **Existing MM 4.9.2D:** Provided the applicant does hydrological studies, engineers structures to be safe from flooding and provides evidence that the structures will not adversely impact the floodplain, Riverside County may allow development into the floodway fringe.

e. Significance

Implementation of the above regulations, General Plan policies and mitigation measures would be sufficient to ensure that all of the incremental cumulative impacts listed above would be less than significant. As such, the project's incremental increase in exposure to flooding hazards would not be cumulatively considerable. In total, build out of any of the above General Plan scenarios would result in cumulatively considerable impacts due to flooding hazards, including dam inundation, seiche and mudflow.

11. Cumulative Effects on Geology and Soils

Section 4.12 (Geology and Soils) discusses existing geology, seismicity and soils within Riverside County and also analyzes geological and seismic hazards from future development. Areas already covered in Section 4.12 are not repeated here; see that section for additional details on sources and existing geological setting.

Section 4.12 of this EIR provides a complete description of geological and seismic hazards affecting Riverside County, as well as analysis of the existing and future seismic and geologic risks projected to occur as Riverside County builds out. This data includes Table 4.12-A (Probable Earthquake Scenarios), Table 4.12-B (General Liquefaction Potential Zones), Table 4.12-C (Geology Hazard Areas) and Table 4.12-D (Potential Project Areas Affected by Geological Hazard Areas). It also includes Figure 4.12.1 (Alquist-Priolo Fault Zones), Figure 4.12.2 (Earthquake Probability), Figure 4.12.3 (Liquefaction Zones), Figure 4.12.4 (Steep Slopes), Figure 4.12.5 (Documented Subsidence Areas), Figure 4.12.6 (Wind Erosion Susceptibility Areas) and Figure 4.12.7 (Near-Source Zone Regions, UBC Zone Boundary).

a. Existing Conditions

Seismic Hazards: A variety of geological hazards pose threats in Riverside County, particularly those associated with earthquakes. Seismic activity can cause hazards directly due to fault rupture and, more widely, ground-shaking. It can also cause liquefaction or subsidence of soils, rockfall, seiche and more. See Section 4.12.2 for full background on these hazards, including their relative likelihoods for occurrence in the various regions of Riverside County.

Earthquake risk is very high in the heavily populated western portion of Riverside County due to the presence of three of California's most active faults: the San Andreas, the San Jacinto and the Elsinore. Risk is moderate in the eastern portion of Riverside County which includes the Coachella Valley and Blythe. Riverside County is at risk from larger, more damaging earthquakes than the moderate sized, M_w 6.7 Northridge earthquake, which in 1994 caused 54 deaths and $20-$30 billion in damage.

Liquefaction Hazards: Liquefaction is a process by which water-saturated materials (including certain types of soil and sediment) lose strength and may fail during strong groundshaking, potentially resulting in one or more type of ground failure: lateral spread, flow failure, ground oscillation or loss of bearing strength. Areas of Riverside County with soil and hydrological conditions creating susceptibility for liquefaction hazards are depicted in Figure 4.12.3. Also, because there are several faults in Riverside County capable of generating peak ground accelerations of over 0.10 g (that is, acceleration with one-tenth the force of gravity), there is a high potential for seismically-induced rockfall and landslides to occur. Figure 4.12.1 shows areas of steep slopes within Riverside County, which are areas where rockfall hazards are greatest. In addition, Riverside County's valley regions containing relatively recent sediments may be susceptible to some degree of seismic settlement. The extent of relatively young sediments with moderate to locally high potential for settlement may be correlated with areas of valley fill represented on subsidence susceptibility mapping.

Ground subsidence can disrupt surface drainage, reduce aquifer system storage, form earth fissures and damage wells, buildings, roads and utility infrastructure. In addition to seismic sources, subsidence and fissuring have also been caused by falling groundwater tables and by hydrocollapse when groundwater tables rise in Riverside County. Figure 4.12.5 depicts areas of documented subsidence and other areas of Riverside County that may be susceptible to subsidence. Subsidence has been documented in three areas of Riverside County: the Elsinore Trough, including Temecula and Murrieta; the San Jacinto Valley from Hemet to Moreno Valley; and the southern Coachella Valley.

Wind Erosion Hazards: Much of Riverside County (approximately 20%) is vulnerable to high or very high wind erosion susceptibility. The Coachella Valley, the Santa Ana River channel and the Hemet region feature zones of high wind erosion susceptibility. See Figure 4.12.6 for wind erosion risks countywide. In particular, windblown sand is a well-recognized hazard for developments in the Coachella Valley. It has even forced abandonment of dwellings and subdivided tracts in the central Coachella Valley. The primary source of sand in the Coachella Valley is the Whitewater River.

Other Geological Hazards: In terms of soil erosion, topography and the length and steepness of slopes are crucial to determining the volume and velocity of runoff. As slope's length or steepness increases, the rate of runoff increases and the potential for erosion is magnified. Heavy or frequent rainfall also plays heavily into soil erosion hazards, particularly in post-burn areas where vegetation is absent.

b. Future Conditions

For future condition related to seismic and geological hazards, Tables 5.5-R, 5.5-S and 5.5-T, below, show cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), the Updated General Plan as per GPA No. 960 (GPU/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP).

Seismic Hazards: Known and unknown fault zones criss-cross the County of Riverside. Future development within county fault hazard areas and state Alquist-Priolo earthquake fault hazard zones, would increase the potential for property loss, injury or death due to fault rupture. In terms of cumulative earthquake hazards, as measured by fault zone proximity (both county and Alquist-Priolo [state] fault zones), Table 5.5-R (Cumulative Fault Zone Effects) indicates that build out of the existing (current) General Plan will greatly increase (by nearly 200%) the amount of developed uses within the interface/wildland regions, with available open space and vacant land decreasing by nearly half (roughly *50,000* ~~48,000~~ acres). This is consistent with the conclusions in Section 4.12 that show wide swaths of Riverside County lie within regions with the potential for strong groundshaking hazards in the event of a major earthquake, as does much of Southern California.

For General Plan build out with the project (GPU/GP960 scenario), the data indicate that GPA No. 960's incremental contributions to new development within the fault zones will be negligible (under *5%* ~~3%~~ per development category) compared to that expected for the current General Plan. As such, the project's cumulative contribution to seismic hazards associated with fault rupture in Riverside County would be less than significant.

For the CULM scenario (build out of the General Plan assuming the project and all GPAs in process through 2009), incremental trends in development increasing in fault zones are generally similar to the GPU scenario. Development in fault zones would show slight incremental increases (*2-5%* ~~0-4%~~) for all categories ~~except for the Rural/Agricultural category, which would see roughly a 25% increase in development potential~~. However, these types of uses accommodate low residential densities and feature large amounts of open land (pastures, farmlands, etc.). In addition, in terms of acreage the incremental increase totals only about *1,900* ~~2,300~~ acres, which is less

than 1% of the total rural/agricultural area within unincorporated Riverside County. For this reason, the CULM scenario's incremental increase in seismic fault rupture hazards is not considered cumulatively considerable.

Table 5.5-R: Cumulative Fault Zone Effects

LAND USE SCENARIO	Urban/ Suburban	Rural/ Agriculture	Interface/ Wildlands	Vacant / Open Space	Public Facilities	Totals
EXIST (Existing Uses of Land)						
In Fault Zone[2]	4,830	8,110	20,570	112,090	2,500	148,100
Outside Fault Zone	74,470	357,140	728,050	2,681,600	29,880	3,871,140
Total	**79,300**	**365,250**	**748,620**	**2,793,690**	**32,380**	**4,019,240**
CURR GP (Current[1] General Plan Build Out)						
In Fault Zone[2]	5,050	8,210	59,600	63,970	690	137,520
Change from EXISTING	***+220***	***+100***	***+39,030***	***-48,120***	***-1,810***	***-10,580***
Outside Fault Zone	*100,000*	*290,620*	*2,246,110*	*1,215,690*	*29,300*	3,881,720
Total	***105,050***	***298,830***	***2,305,710***	***1,279,660***	***29,990***	**4,019,240**
GPU/GP960 (Updated General Plan with GPA 960 Build Out)						
In Fault Zone[2]	5,030	8,420	58,950	64,640	690	137,730
Change from CURR GP	***-20***	***+210***	***-650***	***+670***	***0***	***+210***
Change from EXISTING	***-20***	***+210***	***-650***	***+670***	***0***	***+210***
Outside Fault Zone	*103,080*	*290,080*	*2,233,900*	*1,224,280*	*30,170*	*3,881,510*
Total	***108,110***	***298,500***	***2,292,850***	***1,288,920***	***30,860***	***4,019,240***
CULM GP (Cumulative GP with Additional Proposed GPAs Build Out)						
In Fault Zone[2]	*4,940*	*10,120*	*57,290*	*64,450*	*730*	*137,530*
Change from CURR GP	***-110***	***+1,910***	***-2,310***	***+480***	***+40***	***+10***
Change from EXISTING	***-90***	***+1,700***	***-1,660***	***-48,190***	***+40***	***-200***
Outside Fault Zone	*109,090*	*293,030*	*2,235,560*	*1,214,440*	*29,590*	3,881,710
Total	***114,030***	***303,150***	***2,292,850***	***1,278,890***	***30,320***	**4,019,240**

Footnotes:
1. Defined as the General Plan as of end of *2009* ~~2008~~.
2. Includes updates to fault zones as proposed in GPA No. 960 (see changes described in Section 4.12.4).
3. *"IN" denotes land in any 100-year floodplain, Flooding Zone A or dam inundation zone.*
4. *"OUT" is derived from total area data for each land use group (USUB, RURAG, etc.) from Table 4.1 (Agriculture).*
5. *See Tables 10.1 through 10.3 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County Planning Dept., project application data, 2013 *and 2014. RCIT* GIS Dept., RCLIS layer, fault zones (updated), 2012.

Liquefaction Hazards: The cumulative effects of future development relative to potential liquefaction hazards are analyzed in Table 5.5-S (Cumulative Liquefaction Effects). The data indicate that build out of the current General Plan will continue the trend of development occurring in areas of high to very high liquefaction potential, as valley floors are favored growth areas and also contain sedimentary soils prone to liquefaction. Urban/suburban development in areas of high to very high liquefaction potential will nearly double under the CURR scenario and uses within interface/wildland areas will approach nearly 140% (a nearly 10,000-acre increase). These increases will be offset by decreased vacant/open space uses and also public facilities. Similar trends are reflected in areas of moderate, low and very low liquefaction potential.

For incremental impacts associated with the project, Table 5.5-S indicates that the with-project build out scenario (GPU/GPA960) would see a slight (*1%* ~~2%~~) reduction in development capacity within areas of high to very high liquefaction potential for both urban/suburban uses and rural/agricultural uses, *as compared to current General Plan build out* ~~as well as a 5% reduction in public facilities~~. These reductions are offset by a slight (*300-acre* ~~350-acre, 4%~~) increase for interface/wildland uses. All together, the incremental increase in liquefaction hazard potential associated with GPA No. 960 is negligible and not cumulatively considerable.

For the CULM scenario, however, the concentration on increasing urban/suburban development potential means this category would see an increase of nearly *1,600* ~~2,000~~ acres within the high to very high liquefaction hazard potential zones. This increase is offset by a *1,330-acre* ~~nearly 1,700 acre~~ reduction in acreage for rural/agricultural

lands within the same (high-very high) category. Interface/wildlands would see a slight (*2%* ~~3%~~, roughly 300-acre) increase and the remaining two categories would see negligible (30- to *150-acre* ~~300-acre~~) increases as well. There is a slight potential for the incremental urban/suburban increases in the high/very high category to be cumulatively considerable. However, adequate geoengineering techniques and requirements can avoid, reduce or minimize such impacts at the implementing project level to ensure they are not cumulatively significant. See mitigation discussion below.

Table 5.5-S: Cumulative Liquefaction Effects

Liquefaction Potential Zone[1]	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
Very High						
Existing Total	**5,140**	**91,570**	**4,790**	**15,260**	**1,870**	**118,630**
CURR GP[2] Total	8,070	89,830	12,850	5,050	460	116,260
GP*U* / *GPA* 960 Δ (Change)	-80	-180	+230	+550	+70	+590
CULM GP Δ (Change)	*+30*	*+60*	*-20*	+10	*0*	*+80*
High						
Existing Total	**9,140**	**34,950**	**2,370**	**25,090**	**5,310**	**76,860**
CURR GP[2] Total	19,160	32,660	4,150	6,320	4,180	66,470
GP*U* / *GPA* 960 Δ (Change)	-220	*+240*	+120	-250	+50	*-60*
CULM GP Δ (Change)	*+1,540*	-1,390	*+320*	+140	*-30*	+580
High / Very High - subtotal						
Existing Total	**14,280**	**126,520**	**7,160**	**40,350**	**7,180**	**195,490**
CURR GP[2] Total	27,230	122,490	17,000	11,370	4,640	182,730
GP*U* / *GPA* 960 Δ (Change)	-300	*+60*	+350	+300	*+120*	*+530*
CULM GP Δ (Change)	*+1,570*	*-1,330*	*+300*	*+150*	*-30*	*+660*
Cumulative B/O Total	***28,500***	***121,220***	***17,650***	***11,820***	***4,730***	***183,920***
Change from Exist	*+14,220*	*-5,290*	*+10,490*	*-28,530*	*-2,450*	*-11,560*
Moderate						
Existing Total	**25,390**	**77,480**	**196,860**	**1,025,250**	**15,740**	**1,340,720**
CURR GP[2] Total	*40,520*	*66,800*	*926,270*	285,410	*10,430*	1,329,530
GP*U* / *GPA* 960 Δ (Change)	+880	-730	+610	*-390*	+350	*+720*
CULM GP Δ (Change)	+3,200	-690	*-2,620*	*+300*	*+170*	*+360*
Low						
Existing Total	**8,290**	**47,270**	**73,840**	**338,820**	**2,720**	**470,940**
CURR GP[2] Total	*18,290*	*39,260*	*325,550*	88,430	*3,560*	*475,090*
GP*U* / *GPA* 960 Δ (Change)	*+310*	*-110*	*-400*	*+20*	*+260*	+80
CULM GP Δ (Change)	*+2,130*	*-900*	*-1,140*	*+180*	*+180*	+450
Very Low						
Existing Total	**2,770**	**2,950**	**2,450**	**22,060**	**480**	**30,710**
CURR GP[2] Total	3,560	4,460	15,400	4,790	120	28,330
GP*U* / *GPA* 960 Δ (Change)	+40	*-30*	*-290*	+280	+10	*+10*
CULM GP Δ (Change)	+210	+3,300	*-3,520*	+10	0	*0*
Rest - subtotal						
Existing Total	**36,450**	**127,700**	**273,150**	**1,386,130**	**18,940**	**1,842,370**
CURR GP[2] Total	*62,370*	*110,620*	*1,267,220*	378,630	*14,110*	*1,832,950*
GP*U* / *GPA* 960 Δ (Change)	+1,230	-870	*-80*	-90	*+620*	*+810*
CULM GP Δ (Change)	*+5,540*	*+1,710*	*-7,280*	*+490*	*+350*	*+810*
Cumulative B/O Total	***69,140***	***111,460***	***1,259,860***	***379,030***	***15,080***	***1,834,570***
Change from Exist	*+32,690*	*-16,240*	*+986,710*	*-1,007,100*	*-3,860*	*-7,800*
None Mapped						
Existing Total	**28,580**	**111,030**	***468,310***	***1,367,200***	**6,270**	***1,981,390***
CURR GP[2] Total	15,450	65,670	1,021,500	889,670	11,260	*2,003,560*
GP*U* / *GPA* 960 Δ (Change)	+2,140	+470	*-13,140*	*+9,060*	+130	*-1,340*

Liquefaction Potential Zone[1]	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
CULM GP Δ (Change)	+1,560	+4,160	*-5,890*	*-1,300*	0	*-1,470*
Development Totals at Build Out						
Existing Total	**79,310**	***365,240***	***748,620***	***2,793,680***	**32,390**	**4,019,240**
CURR GP[2] Total	*105,050*	*298,780*	*2,305,730*	1,279,670	*30,010*	4,019,240
GP*U* / *GPA* 960 Δ (Change)	+3,070	*-340*	*-12,870*	*+9,270*	+870	0
CULM GP Δ (Change)	*+8,670*	*+4,540*	*-12,870*	*-660*	*+320*	0
Cumulative B/O Total	***116,790***	***302,980***	***2,279,990***	***1,288,280***	***31,200***	***4,019,240***
Change from Exist	*+37,480*	*-62,260*	*+1,531,370*	*-1,505,400*	*-1,190*	*0*

Footnotes:
1. For criteria used to define liquefaction potential zones, see Table 4.12-B in Section 4.12.
2. Defined as the General Plan as of end of *2009* ~~2008~~.
3. *See Tables 11.1 through 11.4 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Liquefaction Potential Zones, updated as outlined in Section 4.12) and project application data, 2012 *and 2014*.

Wind Erosion Hazards: Lastly, growth pressure within Riverside County will result in development that causes the incremental loss, fragmentation and degeneration of areas of natural blowsand (such as sand dunes, for example) and sandy soils potentially prone to wind erosion regardless of the General Plan build out scenario. It will also result in potential incremental increases in windborne soil erosion when vegetation is removed and soils are disturbed as part of the c+onstruction process for buildings, roads and infrastructure.

The cumulative effects of future development relative to potential wind erosions hazards are analyzed in Table 5.5-T (Cumulative Wind Erosion Effects). Of all the build out scenarios, the table indicates that only under the current General Plan will there result in increased development (roughly *600* ~~1,000~~ acres) within areas of "very high" wind erosion potential. None of the other scenarios proposes additional development within "very high" hazard areas.

Within areas of "high" erosion potential, build out pursuant to the current General Plan will significantly increase the amount of disturbed areas in Riverside County. Specifically, urban/suburban development will increase over 80%, rural/agricultural uses will increase nearly 10% and development in interface/wildlands will increase nearly 225%. The amount of open and vacant acreage on "high" wind erosion potential soils will correspondingly decrease by 60%. Due to more accurate mapping, the amount of public facility uses within "high" hazard areas will decrease by roughly a third (by nearly 4,000 acres).

For build out of the General Plan with-project (GPU/GPA960 scenario), incremental changes to wind erosion hazards will be negligible. Both urban/suburban and rural/agricultural areas would decrease *very slightly* ~~by roughly 1% and p~~*P*ublic *F*~~f~~acility uses would *increase slightly (by 4%) as well* ~~decrease by nearly 10% (330 acres)~~. Within the interface/wildlands, development in "high" wind erosion hazard areas would increase by roughly 1% (roughly 1,200 acres). None of these changes are cumulatively considerable. The only large change for the GPU scenario is the roughly 3,200-acre increase in developed urban/suburban areas at "moderate" wind erosion risk. However, such an increase is not cumulatively significant since the soils' erosion potential can be adequately mitigated to less than significant levels through implementation of various mandatory regulatory and mitigation measures (see below). The CULM build out scenario shows trends similar to that of the GPU scenario. The incremental increases associated with the CULM scenario are similarly less than cumulatively significant.

Table 5.5-T: Cumulative Wind Erosion Effects

Wind Erosion Susceptibility	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
Very High[1]						
Existing Total	**390**	**10**	**70**	**490**	**40**	**1,000**
CURR GP[2] Total	980	30	70	0	0	1,080

Wind Erosion Susceptibility	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
GP*U* / *GPA* 960 Δ (Change)	0	0	0	0	0	0
CULM GP Δ (Change)	0	0	0	0	0	0
High[2]						
Existing Total	**28,910**	**100,610**	**97,580**	**439,950**	**12,350**	**679,400**
CURR GP[2] Total	52,390	108,210	315,940	174,620	8,460	659,620
GP*U* / *GPA* 960 Δ (Change)	-140	-40	+1,170	-710	+330	+610
CULM GP Δ (Change)	*+3,530*	*-2,380*	*+270*	*+290*	*-110*	*+1,600*
High / Very High - subtotal						
Existing Total	**29,300**	**100,620**	**97,650**	**440,440**	**12,390**	**680,400**
CURR GP[2] Total	53,370	108,240	316,010	174,620	8,460	660,700
GP*U* / *GPA* 960 Δ (Change)	-140	-40	+1,170	-710	+330	+610
CULM GP Δ (Change)	*+3,530*	*-2,380*	*+270*	*+290*	*-110*	*+1,600*
Cumulative B/O Total	***56,760***	***105,820***	***317,450***	***174,200***	***8,680***	***662,910***
Change from Exist	*+27,460*	*+5,200*	*+219,800*	*-266,240*	*-3,710*	*-17,490*
Moderate[3]						
Existing Total	**48,210**	**215,480**	**382,700**	**1,830,100**	**19,080**	**2,495,570**
CURR GP[2] Total	*51,470*	*185,140*	*1,508,630*	*693,850*	*17,260*	*2,457,350*
GP*U* / *GPA* 960 Δ (Change)	+3,190	-300	-14,290	+11,390	*+534*	*+530*
CULM GP Δ (Change)	*+5,180*	*+6,430*	*-13,140*	*+920*	*+460*	*-150*
Low[4]						
Existing Total	**1,740**	**48,870**	**267,890**	***523,900***	**870**	***843,270***
CURR GP[2] Total	210	4,360	480,920	411,630	4,070	901,190
GP*U* / *GPA* 960 Δ (Change)	0	0	+280	*-1,430*	+10	*-1,140*
CULM GP Δ (Change)	+10	0	-20	-1,440	0	-1,450
Moderate / Low - subtotal						
Existing Total	**49,950**	**264,350**	**650,590**	***2,354,000***	***19,950***	***3,338,840***
CURR GP[2] Total	*52,680*	*190,500*	*1,989,550*	1,105,480	*21,330*	*3,358,540*
GP*U* / *GPA* 960 Δ (Change)	+3,190	-300	-14,010	*+9,960*	*+550*	-610
CULM GP Δ (Change)	*+5,190*	*+6,430*	*-13,160*	*-520*	*+460*	*-1,600*
Cumulative B/O Total	***60,060***	***196,630***	***1,962,380***	***1,114,920***	***22,340***	***3,356,330***
Change from Exist	*+10,110*	*-67,720*	*+1,311,790*	*-1,239,080*	*+2,390*	*+17,490*
Development Totals at Build Out						
Existing Total	**79,250**	**364,970**	**748,240**	***2,794,440***	**32,340**	***4,019,240***
CURR GP[2] Total	*105,050*	*298,740*	*2,305,560*	*1,280,100*	*29,790*	*4,019,240*
GP*U* / *GPA* 960 Δ (Change)	+3,050	-340	-12,840	*+9,250*	*+880*	0
CULM GP Δ (Change)	*+8,720*	*+4,050*	*-12,890*	*-230*	*+350*	0
Cumulative B/O Total	***116,82440***	***302,450***	***2,279,830***	***1,289,120***	***31,020***	***4,019,240***
Change from Exist	*+35,570*	*-62,520*	*+1,531,590*	*-1,505,320*	*-1,320*	*0*

Footnotes:
1. For criteria used to define susceptibility categories, see Figure 4.12.6 in Section 4.12.
2. Defined as the General Plan as of end of *2009* ~~2008~~.
3. *See Tables 12.1 through 12.4 in Appendix EIR-11 for more detailed data used in these tables.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Wind Erosion Potential Zones, updated as outlined in Section 4.12) and project application data, 2012 *and 2014*.

Other Geological Hazards: For technical reasons (the sheer size of compiled topographic data that comprises Riverside County's steep slope data), it was not possible to perform a cumulative analysis for rockfall hazards. Section 4.12.6 provides a programmatic response for avoiding, reducing or minimizing rockfall hazards to the extent feasible. However, as outlined in Section 4.12.6, it cannot be ascertained at the countywide scale if such measures would be sufficient to fully reduce rockfall hazards to less than significant levels. For this reason, the project's incremental contributions to future development in areas potentially at risk for rockfall, mudslide and other slope-related geological hazards must be considered cumulatively considerable.

In terms of development on unstable geologic units and soils, as well as expansive soils, future growth may incrementally increase the potential for structure damage or interruption of utility service (through disruption of the facility). However, such impacts are not considered cumulatively considerable since the regulatory compliance measures identified below would ensure that impacts are avoided, reduce or minimized to less than significant levels. Cumulative impacts to subsurface sewer services would be similarly avoided, reduced or minimized to less than significant levels as well.

c. Impacts

Future development accommodated will contribute incrementally to cumulative geology and soil impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Like all of Southern California, Riverside County has experienced and will continue to face ground-shaking resulting from activity on local and regional faults. Thus, future development of any of the General Plan build out scenarios will incrementally increase the number of people and structures at risk of injury, death or property loss due to substantial strong seismic groundshaking.

- Landslides and rockfall can occur throughout Riverside County as a result of seismic activity and other natural processes, as well as resulting from human activity. Accordingly, future development of any of the General Plan build out scenarios will incrementally increase the number of people and structures at risk of injury, death or property loss due to substantial landslide or rockfall effects.

(2) Non-Substantial Incremental Impacts

For the risk outlined below, mandatory regulatory and/or mitigation measures (as listed below) will be sufficient to ensure adverse impacts are mitigated to cumulatively insignificant levels.

- Future development as the General Plan builds out (per any of the scenarios) will increase the potential for property loss, injury or death resulting from development where it occurs on or adjacent to known or as of yet undetected earthquake fault zones. This will incrementally expose people and structures to adverse effects due to rupture of a known earthquake fault. This risk, however, will be mitigated through compliance with various regulatory measures, including the prohibition on building on or adjacent to active faults.

- Portions of unincorporated Riverside County are susceptible to liquefaction, a destructive secondary effect of strong seismic shaking. This will incrementally expose people and structures to adverse effects due to seismic-related ground failure, including liquefaction.

- Areas potentially subject to soil erosion or topsoil loss will be incrementally exposed during future development activities as the General Plan (any scenario) builds out. Wind and water are the two biggest factors causing soil erosion, particularly where human activities have removed vegetation or otherwise disturbed the underlying soil.

- Unstable geological units and soils occur throughout Riverside County. Both natural and human activities have the potential to cause geologic instability. If improperly engineered or constructed, some

types of development, particularly those involving heavy loads (concrete dams, for example) or affecting subsurface water levels (e.g., groundwater pumping or replenishment facilities), have an increased potential to cause ground or soil failures. Accordingly, future development resulting from General Plan build out (of any scenario) would incrementally increase the potential for landslides, liquefaction, lateral spreading and subsidence as a result of placement on unstable geological units or soils.

- Expansive soils are widely distributed throughout Riverside County. Thus, any future development may incrementally increase the potential for the placement of structures and facilities in areas susceptible to damage resulting from expansive soils.

- Future development in areas outside of existing water and sewer service providers has the potentially to incrementally increase the number of structures and facilities in areas where soils are incapable of adequately supporting septic tanks or alternative wastewater disposal systems. Regulations are in-place to ensure this does not result in development on soils incapable of supporting septic tanks or other alternative wastewater disposal systems. (Development cannot be approved by the County of Riverside if sufficient waste disposal systems cannot be provided.)

d. Mitigation

As described in detail in Section 4.12.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative geological impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.12.3 for details on each regulation.

- Federal Water Pollution Control Act of 1972 (Clean Water Act)
- California Building Standards Codes, Title 24, Section 1613
- California Building Standards Codes, Part 2, Chapters 18 and 18A (Soils and Foundations), Chapters 16 and 16A (Structural Design), and Chapters 17 and 17A (Structural Tests and Special Inspections)
- Riverside County Municipal Code Chapter 15.60 - Earthquake Fault Area Construction Regulations
- Ordinance No. 547 - Implementing the Alquist-Priolo Earthquake Fault Zoning Act
- Ordinance No. 484 - Blowing Sand Control

Key General Plan Policies: See Section 4.12.2 for the text of each policy.

- Safety Element Policies: S 2.1 - 2.8, 3.1 - 3.11, 3.13, 3.14, 7.7, 7.8, 7.11

(2) CEQA Mitigation

Existing Mitigation Measures (MMs): In EIR No. 441, which was certified for the 2003 RCIP General Plan, it was determined that mitigation would be necessary in order to reduce certain impacts associated with seismic

groundshaking, fault rupture, soil and wind erosion, and topsoil loss. The mitigation measures listed below are from EIR No. 441 and remain applicable to GPA No. 960 and future General Plan implementing projects.

- **Existing MM 4.10.1A:** Before a project is approved or otherwise permitted within an Alquist-Priolo Zone, County Fault Zone, within 150 feet of any other active or potentially active fault mapped in a published United States Geologic Survey (USGS) or CGS reports, or within other potential earthquake hazard area (as determined by the [Riverside] County Geologist), a site-specific geologic investigation shall be prepared to assess potential seismic hazards resulting from development of the project site. The site-specific geotechnical investigation shall incorporate up-to-date data from government and non-government sources.

  Based on the site-specific geotechnical investigation, no structures intended for human occupancy shall be constructed across active faults. This site-specific evaluation and written report shall be prepared by a licensed geologist and shall be submitted to the [Riverside] County Geologist for review and approval prior to the issuance of building permits. If an active fault is discovered, any structure intended for human occupancy shall be set back at least 50 feet from the fault. A larger or smaller setback may be established if such a setback is supported by adequate evidence presented to and accepted by the [Riverside] County Geologist.

- **Existing MM 4.10.2A:** The design and construction of structures and facilities shall adhere to the standards and requirement detailed in the California Building Code (California Code of Regulations, Title 24), [Riverside] County Building Code, and/or professional engineering standards appropriate for the seismic zone in which such construction may occur. Conformance with these design standards shall be enforced through building plan review and approval by the Riverside County Department of Building and Safety prior to the issuance of building permits for any structure or facility.

- **Existing MM 4.10.2B:** As determined by the [Riverside] County Geologist, a site-specific assessment shall be prepared to ascertain potential groundshaking impacts resulting from development. The site-specific groundshaking assessment shall incorporate up-to-date data from government and non-government sources and may be included as part of any site-specific geotechnical investigation required in [existing EIR No. 441] Mitigation Measure 4.10.1A. The site-specific groundshaking assessment shall include specific measures to reduce the significance of potential groundshaking hazards. This site-specific groundshaking assessment shall be prepared by a licensed geologist and shall be submitted to the [Riverside] County Geologist for review and approval prior to the issuance of building permits.

- **Existing MM 4.10.2C:** The standards stated in [existing EIR No. 441] Mitigation Measures 4.10.2A and 4.10.2B shall apply to any structure of facility that undergoes expansion, remodeling, renovation, refurbishment or other modification.

- **Existing MM 4.10.3A:** As determined by the [Riverside] County Geologist, a site-specific assessment shall be prepared to ascertain potential liquefaction impacts resulting from development. The site-specific liquefaction assessment shall incorporate up-to-date data from government and non-government sources and may be included as part of any site-specific geotechnical investigation required in [existing EIR No. 441] Mitigation Measure 4.10.1A. This site-specific groundshaking assessment shall be prepared by a licensed geologist and shall be submitted to the [Riverside] County Geologist for review and approval prior to the issuance of building permits.

- **Existing MM 4.10.3B:** Where development is proposed within an identified or potential liquefaction hazard area (as determined by the [Riverside] County Geologist), adequate and appropriate measures such

as (but not limited to) design foundations in a manner that limits the effects of liquefaction, the placement of an engineered fill with low liquefaction potential, and the alternative siting of structures in areas with a lower liquefaction risk, shall be implemented to reduce potential liquefaction hazards. Any such measures shall be submitted to the Riverside County Geologist and the [Riverside] County Department of Building and Safety for review prior to the approval of the building permits.

- **Existing MM 4.10.7A:** Proponents of new development within Riverside County shall adhere to applicable policies and standards contained in the most recent version of the [California] Building Code related to the construction of structures and facilities on expansive soils.

- **Existing MM 4.10.8A:** New development within identified or potential (as determined by the [Riverside] County Geologist) wind hazard areas shall adhere to applicable provisions of Riverside County Ordinance No. 484.2 or other local, state, or federal requirements established to control or limit the windborne erosion of soil. Prior to the approval of development permits, the [Riverside] County Building and Safety Department shall confirm that the design of any proposed structure, facility, or use incorporates appropriate features to control and/or limit the windborne erosion of soil.

- **Existing MM 4.10.9A:** Riverside County, where required, and in accordance with issuance of a National Pollutant Discharge Elimination System (NPDES) permit, shall require the construction and/or grading contractor for individual developments to establish and implement specific Best Management Practices (BMPs) at time of project implementation.

- **Existing MM 4.10.9B:** Prior to any development within the county, a Grading Plan shall be submitted to the Riverside County Building and Safety Department and/or Riverside County Geologist for review and approval. As required by the County [of Riverside], the grading plan shall include erosion and sediment control plans. Measures included in individual erosion control plans may include, but shall not be limited to, the following:

  a. Grading and development plans shall be designed in a manner which minimizes the amount of terrain modification.

  b. Surface water shall be controlled and diverted around potential landslide areas to prevent erosion and saturation of slopes.

  c. Structures shall not be sited on or below identified landslides unless slides are stabilized.

  d. The extent and duration of ground disturbing activities during and immediately following periods of rain shall be limited, to avoid the potential for erosion which may be accelerated by rainfall on exposed soils.

  e. To the extent possible, the amount of cut and fill shall be balanced.

  f. The amount of water entering and exiting a graded site shall be limited though the placement of interceptor trenches or other erosion control devices.

  g. Erosion and sediment control plans shall be submitted to the County [of Riverside] for review and approval prior to the issuance of grading permits.

- **Existing MM 4.10.9C:** Where required, drainage design measures shall be incorporated into the final design of individual projects on site. These measures shall include, but will not be limited to:

  a. Runoff entering developing areas shall be collected into surface and subsurface drains for removal to nearby drainages.

  b. Runoff generated above steep slopes or poorly vegetated areas shall be captured and conveyed to nearby drainages.

  c. Runoff generated on paved or covered areas shall be conveyed via swales and drains to natural drainage courses.

  d. Disturbed areas that have been identified as highly erosive shall be (re)vegetated.

  e. Irrigation systems shall be designed, installed and maintained in a manner which minimizes runoff.

  f. The landscape scheme within the project site shall utilize drought-tolerant plants.

  g. Erosion control devices such as rip-rap, gabions, small check dams, etc., may be utilized in gullies and active stream channels to reduce erosion.

e. Significance

The analysis above indicates that future development consistent with any of the General Plan build out analyzed, including the proposed project (GPA No. 960), would contribute mostly non-substantially to incremental impacts related to geology, seismicity and soils. Implementation of existing regulations, General Plan policies and CEQA mitigation measures would reduce potential incremental effects of fault rupture hazards, groundshaking, liquefaction, landslides and rockfall, seismically induced settlement, subsidence and collapsible soils, soil erosion and loss of topsoil are either avoided or minimized to less than significant levels. Compliance with existing laws would also ensure structures, people and property are protected from cumulative geologic hazards through engineering designed according to the applicable seismic and geological risks or that development is not permitted where such risks are excessive (i.e., higher than typical for the given area or geology) and cannot be avoided.

However, even with mitigation, the project would contribute substantially to significant cumulative impacts stemming from growth leading to the potential exposure of additional people and structures to substantial strong seismic groundshaking and also to substantial adverse effects due to landslide or rockfall. Build out of the cumulative General Plan scenario would do likewise. Due to the inherently growth-inducing and growth-accommodating nature of a General Plan, there is no feasible mitigation that will fully reduce these cumulative impacts to below the level of significance, although mitigation to address these hazards is included herein. Thus, even though project effects would be individually limited, GPA No. 960's incremental contribution to cumulative groundshaking and landslide/rockfall hazards would be significant and unavoidable.

12. Cumulative Effects on Hazardous Materials and Safety

Section 4.13 (Hazardous Materials and Safety) discusses existing risks from hazardous materials, wildfires, air travel and other hazards in Riverside County, as well as the sources and updates used. It also analyzes safety hazards from future development accommodated by the project, GPA No. 960, as well as the mitigation (through

regulatory compliance) necessary to ensure impacts are less than significant. Areas already covered in Section 4.13 are not repeated here; see that section directly for additional resource details.

Section 4.13 provides a complete description of the safety hazards and hazardous material risks affecting Riverside County, as well as analysis of the existing and future risks projected to occur as Riverside County builds out. This data includes Table 4.13-A (Major Hazardous Material Sites in Riverside County), Table 4.13-B (Airport Compatibility Zone Safety and Airspace Protection Factors), Table 4.13-C (Air Facilities In and Around Riverside County), Table 4.13-D (Largest Fires in California Over the Past Decade), Table 4.13-E (California State Jurisdiction Wildfire Statistics for 2000-2010), Table 4.13-F (Housing Density Classes for Defining Types of Fire Hazard Lands) and Table 4.13-G (Minimum Fire Protection Flows).

It also includes Figure 4.13.1 (Location of Major Hazardous Materials Sites), Figure 4.13.2 (Location of Public Airports), Figure 4.13.3 (Military Airspace Over Riverside County), Figure 4.13.4 (Military Training Airspace and Training Routes Over Riverside County), Figure 4.13.5 (Weapon, Laser and Surface Danger Safety Zones at CMAGR), Figure 4.13.6 (Fire Responsibility Areas) and Figure 4.13.7 (Fire Hazard Severity Zones).

a. Existing Conditions

Hazardous Materials: Federal and state databases indicate 36 major sites of hazmat contamination in Riverside County; i.e., federal Superfund or National Priorities List (NPL), State Response or Cortese List sites. See Figure 4.13.1 and Table 4.13-A for locations and descriptions for each of these major sites. By category, Riverside County contains four "Superfund" or federally listed hazmat sites, 26 "State Response" sites and 19 contaminated sites on the "Cortese List" (some of these sites overlap lists). In addition, information from the Riverside County Department of Environmental Health (DEH) and Planning Department indicates there are nearly 9,000 individual sites in Riverside County permitted to transport, generate, handle or dispose of hazardous materials. According to state records, there are also 15 voluntary cleanup sites, 14 school cleanup sites, 12 corrective action sites and 21 tiered-permit sites, although some of these include the 36 sites identified above.

See Section 4.13 for more information on all of the various sources of existing hazardous materials and sites of potential contamination, such as LUSTs (Leaking Underground Storage Tanks) tracked by the State of California, hazardous waste generators (which also require permits from the state) and military sites (home to both past contaminations and current/on-going use of hazardous materials, particularly fuels and other petroleum products). For military sites, including closed facilities, the most significant hazardous material potentially found on or near these facilities is unexploded ordnance (e.g., bombs). Major medical facilities in Riverside County, such as Riverside County Regional Medical Center and over 20 others, also generate a variety of hazardous substances in the form of "medical wastes," which may also be biohazardous.

There are currently seven active landfills within the unincorporated Riverside County; six operated by the Riverside County Waste Management Department and one (El Sobrante) privately owned and operated. All of the landfills currently located in Riverside County are Class III landfills and accept only nonhazardous solid waste. Hazardous waste generated within Riverside County must be disposed of in Kern County or Santa Barbara County, which have active Class I landfills.

Rail and highway transportation routes, and the varied industries that use them, create the potential for hazardous materials incidents within Riverside County. Although incidents can happen almost anywhere, certain areas of Riverside County are at higher risk for inadvertent release of hazardous materials. Locations near freeways and roadways that are frequently used for transporting hazardous materials (e.g., SR-91, I-15) and locations near industrial facilities that use, store or dispose of these materials all have an increased potential for a release incident, as do locations along the county's freight railways. The amount of hazardous materials transported over

county roadways on a daily basis is unknown, but is estimated to be steadily increasing due to the growth of overall traffic and industry in Riverside County. In addition to the accidental release of gasoline, diesel, oil and other automotive products during vehicle collisions, the transport of hazardous materials on highways within Riverside County presents a risk of upset and/or release of these substances.

There are also many rail lines running through Riverside County, which often carry hazardous cargoes. Major rail lines which cross Riverside County are shown in Section 4.18 (Transportation and Traffic). The most common hazardous material incidents involving rail transport are due to train wrecks and derailments. And, not to be overlooked as a potential source of hazardous materials, particularly petroleum-based ones, are Riverside County's public airports and private fields and airstrips. Even with stringent federal regulations on hazardous materials, accidents still occur. The types of incidents most commonly occurring at airports in Riverside County are illegal disposal of hazardous materials, fuel spills and leaking underground storage tanks; that is, activities related to aircraft and airport maintenance, rather than air transport.

Riverside County is also home to an extensive network of pipeline distribution systems, including a jet fuel (JP-8) line and three high-pressure natural gas transmission pipelines. All areas with natural gas pipelines are at risk for potential pipeline failure and gas-release hazards. Petroleum products are also stored and distributed at many major points throughout Riverside County.

Airports and Aircraft Hazards: Hazards associated with air travel, such as accidents and mishaps during flight can technically occur at any point along a plane's flight path, which can span thousands of miles. The locations most likely to experience air hazards are those closest to airport runways because statistically takeoff and landing are the most common points of mishap during air flight. Airport master plans and airport land use compatibility plans are designed to keep people and property out of the most dangerous portions of the runways and ensure that land uses permitted in proximity to the airport are compatible with the air hazards.

The western part of Riverside County has some of the busiest air traffic in the United States, including very heavy commercial, as well as military, air traffic. The airspace in Riverside County is constantly occupied by aircraft arriving and departing from other airports in the region. The number of near misses reported by pilots underscores the increasing possibility of a mid-air collision over Riverside County. Accordingly, the use of airspace and aircraft overflight represents a remote hazard to many portions of Riverside County. There are also two major airports in Riverside County, March Joint Air Reserve Base (MARB) and Palm Springs International, a military air bombing range (the Chocolate Mountain Aerial Gunnery Range), 13 smaller public commercial airports and dozens of private airstrips; see Table 4.13-C.

A variety of military airspace uses can lead to conflicts between military and civilian aircraft if an error is made by one or more pilots, mechanical failure, etc. As a result, there is a very small risk of accident for the thousands of people and properties on the ground below these routes. To prevent conflicts, MOAs ("military operations areas") segregate certain non-hazardous military activities from civilian and commercial air traffic. Areas above military bases, near actual combat or other military emergencies are generally designated as "restricted airspace." MOAs in Southern California, including portions of eastern Riverside County, are shown in Figure 4.13.3 and a number of "military training routes" (MTRs), which link the various facilities of the Bob Stump Complex, as well as providing routes across the country and overlie Riverside County are shown in Figure 4.13.4.

Wildland Fire Hazards: In California, wildfire and, in particular, wildland-urban interface fires, represent the third-most destructive source of hazard, vulnerability and risk. As people and development encroach further into wildlands, these fire risks increase. In addition, increasingly dry years due to climate change, plus insect predation and other factors led to record amounts of dead and dying vegetation accumulating in the state's wildlands, further exacerbating fire hazards. As the urban environment extends into open areas, fires in wildland-urban

interfaces present unique challenges due to the complex mixture of fuels, properties and threats. According to the California Multi-Hazard Mitigation Plan (MHMP), California experiences an average of 5,000 wildland/urban interface (WUI) fires each year.

Compared to historic fire regimes, many mixed-conifer forests in California now experience more intense and severe fires. The state's chaparral shrublands also now burn more frequently. Both trends can be traced back to the prior century of fire exclusion and rigorous suppression, which has led to these altered regimes. This trend is particularly acute in Southern California where burgeoning population growth in fire-prone areas has resulted in increased ignitions through accident or arson. As a result, this has contributed to the conversion of much of the original sage scrub habitats, particularly in flatlands and low hills, to non-native grasslands and ruderal (weedy) fields. Overall, much of Riverside County is considered to have a moderate to high potential for wildland fires according to CalFire. See Section 4.13.3 for details on each of the habitat types and their relative fire hazards for Riverside County.

To ensure adequate coverage across numerous jurisdictions, the state organizes lands into three basic categories according to the agency fiscally responsible for fire response: Federal Responsibility Areas (FRAs), State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs). See Section 4.13.3.C for specifics on each. As shown in Figure 4.13.6, in Riverside County SRAs (under CalFire jurisdiction) comprise the largest portion of unincorporated territory, over 544,000 acres. LRAs under CalFire are associated mostly with the cities (plus over 13,000 acres in unincorporated areas), and there are large swaths of FRAs within Riverside County as well (nearly 53,000 acres under BLM jurisdiction and over 62,000 acres under the U.S. Forest Service).

CalFire also designates fire hazard severity zones (FHSZs), which are "geographical areas classified as Very High, High or Moderate in State Responsibility Zones or as Local Agency Very High Fire Hazard Severity Zones" pursuant to the California Fire Code. These zones are used to determine the appropriate construction materials for new buildings within WUI areas. Specifically, the regulations of the California Building Code (CBC) Chapter 7A (as amended via County Ordinance No. 787) are mandatory in SRA FHSZs and LRA very high FHSZ areas. Much of the hilly portions of unincorporated Riverside County have substantial fire risks and are designated as SRAs with moderate, high or very high fire hazard. See Figure 4.13.7.

The County of Riverside contracts with the State of California (i.e., CalFire) for fire protection. Under CalFire management, the Riverside County Fire Department (RCOFD) operates 95 fire stations in 17 battalions. Fifty-one of these stations, as well as three stations operated directly by CalFire, are located in the unincorporated portion of Riverside County (see Table 4.17.2-A in Section 4.17.2 for full details).

b. Future Conditions

Table 5.5-U (Cumulative Fire Responsibility Area Effects), below, shows the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), the Updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP). Only cumulative fire hazards are examined quantitatively. The spatial data associated with the other types of hazards in this section, most notably hazardous materials and air hazards, do not readily lend themselves to this type of analysis. They are instead approached programmatically for cumulative impacts within Riverside County.

Hazardous Materials: With the extensive distribution of hazmat sites throughout Riverside County, some of the future development will occur near sites or facilities where hazardous materials are present, regardless of the General Plan build out scenario. However, due to prohibitions on development (and/or strict remediation

requirements) for contaminated sites, the incremental effects would not be cumulatively considerable for any of the scenarios.

Effects from the accidental release of a hazardous material into the environment could have serious consequences on the environment, property and human health depending upon the size, location, type and quantity of the release. However, hazardous material uses, siting, transport and disposal are subject to extensive federal and state regulation and permit requirements. These measures ensure that risks are minimized, regardless of location. Thus, build out of Riverside County, regardless of General Plan scenario, would not result in cumulatively considerable hazardous material effects due to accidental release.

Airports and Aircraft Hazards: For any of the General Plan build out scenarios, population growth in Riverside County would create incremental increases in demand for air transportation. At the same time, growth and urbanization would also introduce incompatible land uses, people and property into airports' vicinities. To ensure incremental effects of encroachment on existing and future air operations are not cumulatively significant, the State Aeronautics Act (Public Utilities Code section 21670 *et seq.*) requires the adoption of airport land use compatibility plans by the Riverside County Airport Land Use Commission (ALUC). These plans ensure that existing and future land uses planned around public use airports are compatible and safe through a variety of limits, restrictions (e.g., on building heights, hazardous material use or storage, sensitive uses, etc.) and other land use requirements.

Wildland Fire Hazards: Future development occurring as the General Plan builds out will result in an increase in the people, property and infrastructure needing fire protection and potentially at risk of wildfire threat. The data in Table 5.5-U show the cumulative effects of scenario build out on the various Fire Responsibility Areas within Riverside County. In addition to reflecting increased uses exposed to fire hazards, the future uses indicated also reflect the amount of increased demand for (and wear-and-tear on) the various fire agencies, equipment and personnel providing the needed fire services. See Section 4.17.2 (Public Services - Fire Protection) for specifics on fire departments, staffing, etc., and Section 5.5.16 for cumulative effects on fire services.

Per Table 5.5-U, growth pressures within Riverside County will result in increased urban, suburban and rural development. Under the existing General Plan (CURR GP scenario), build out will greatly increase the amount of developed uses within the State Responsibility Area (SRA); from roughly 150,000 acres to over *500,000* ~~520,000~~ acres. Interface/wildland areas, typically at greatest risk for wildfires due to adjacent and interspersed open vegetation, account for nearly 350,000 acres of this increase alone. Similar increases would also occur within Local Responsibility Areas as well under the CURR GP scenario. As such, build out of the existing General Plan (CRR GP) would result in cumulatively considerable increases wildfire hazards within Riverside County.

Build out according to the General Plan with GPA No. 960 (i.e., the GPU/GPA960 scenario) would reduce the amount of developed uses allowed within interface/wildland areas (by over 15,000 acres) and increase the amount of vacant and open space land. These changes, however, would be offset by increased development of urban/suburban and public facility uses in SRAs and LRAs. The incremental contributions of each of these increases are individually minor. However, given the significant wildland fire hazards already associated with General Plan build out, even these increases would be cumulatively considerable.

For the CULM scenario (General Plan plus proposed GPAs), both SRAs and LRAs would see even greater increases in developed uses. This is particularly true of rural/agricultural uses in SRAs and urban/suburban uses in LRAs. Interface/wildland uses would actually decrease under the CULM scenario. However, nearly all of the acreage decreased would instead be converted to urban/ suburban or rural/agricultural uses and thus would substantially reduce cumulative impacts. Thus, overall, the CULM General Plan build out scenario would also result in incremental increases in fire hazard potential that are individually minor but cumulatively considerable.

Table 5.5-U: Cumulative Fire Responsibility Area Effects

Fire Responsibility Area Category	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
State Responsibility Area (SRA)						
Existing Total	**26,170**	**55,080**	**62,590**	**500,410**	**7,590**	**651,840**
CURR GP* Total	*20,280*	*85,620*	*407,620*	*141,250*	*8,540*	663,310
GP*U* / *GPA* 960 Δ (Change)	+2,660	+380	-15,170	+11,470	+650	-10
CULM GP Δ (Change)	*+1,550*	*+7,480*	*-9770*	*+710*	*+30*	0
Local Responsibility Area (LRA)						
Existing Total	**39,450**	**178,070**	**32,970**	**427,690**	**15,370**	**693,550**
CURR GP Total	*83,010*	*187,450*	*331,490*	*91,210*	*15,680*	708,840
GP*U* / *GPA* 960 Δ (Change)	+450	-810	+2,130	-880	+160	+1,050
CULM GP Δ (Change)	*+6,450*	*-3,600*	*-3,400*	*+370*	*+320*	+140
SRA & LRA - subtotal						
Existing Total	**65,620**	**233,150**	**95,560**	**928,100**	**22,960**	**1,345,390**
CURR GP Total	*103,290*	*272,070*	*739,110*	*232,460*	*24,220*	1,372,150
GP*U* / *GPA* 960 Δ (Change)	+3,110	-430	-13,040	+10,590	+810	+1,040
CULM GP Δ (Change)	*+8,000*	*+3,880*	*-13,170*	*+1,080*	*+350*	+140
Cumulative B/O Total	***111,290***	***276,950***	***726,940***	***232,540***	***24,570***	***1,372,290***
Change from Exist	*+11,110*	*+3,450*	*-26,210*	*+11,670*	*+1,160*	*+1,180*
Federal Responsibility Area (FRA)						
Existing Total	**11,880**	**122,260**	**652,040**	**1,783,560**	**5,080**	**2,574,820**
CURR GP Total	510	23,000	1,540,620	928,710	2,360	2,495,200
GP*U* / *GPA* 960 Δ (Change)	0	+160	-30	+210	+20	+360
CULM GP Δ (Change)	0	+80	-60	-20	0	0
None						
Existing Total	**1,790**	**9,890**	**1,200**	**81,800**	**4,350**	**99,030**
CURR GP Total	1,260	2,770	26,420	118,050	3,390	151,890
GP*U* / *GPA* 960 Δ (Change)	-70	-70	+220	-1,520	+40	-1,400
CULM GP Δ (Change)	+790	+30	+340	-1,300	0	-140
FRA & None - subtotal						
Existing Total	**13,670**	**132,150**	**653,240**	**1,865,360**	**9,430**	**2,673,850**
CURR GP Total	1,770	25,770	1,567,040	1,046,760	5,750	2,647,090
GP*U* / *GPA* 960 Δ (Change)	-70	+90	+190	-1,310	+60	-1,040
CULM GP Δ (Change)	+790	+110	+280	-1,320	0	-140
Cumulative B/O Total	***2,560***	***25,880***	***1,567,320***	***1,045,440***	***5,750***	***2,646,950***
Change from Exist	*+720*	*+200*	*+470*	*-2,630*	*+60*	*-1,180*
Development Totals at Build Out						
Existing Total	**79,290**	**365,300**	**748,800**	**2,793,460**	**32,390**	**4,019,240**
CURR GP Total	*105,060*	*298,840*	*2,306,150*	*1,279,220*	*29,970*	4,019,240
GP*U* / *GPA* 960 Δ (Change)	+3,040	-340	-12,850	+9,280	+870	0
CULM GP Δ (Change)	*+8,790*	*+3,990*	*-12,890*	*-240*	*+350*	0
Cumulative B/O Total	***113,850***	***302,830***	***2,293,260***	***1,278,980***	***30,320***	***4,019,240***
Change from Exist	*+11,830*	*+3,650*	*-25,740*	*+9,040*	*+1,220*	*0*

* "Current General Plan" defined for these purposes as the General Plan as amended through the end of *2009* ~~2008~~. *See Tables 13.1 through 13.4 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Fire Responsibility Areas, updated per CalFire 2007-2008 data, as outlined in section 4.13) and project application data, 2012 *and 2014*.

c. Impacts

Future development will contribute incrementally to cumulative impacts related to hazardous materials, wildfires, air travel and other safety hazards as Riverside County builds out over time pursuant to the County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Build out of Riverside County would result in development in previously undisturbed areas, including some with high or very-high fire hazards, particularly rural mountainous areas. This would increase the people, property and structures potentially exposed to wildland fire hazards, particularly within the expanding urban-wildland interface areas within Riverside County. Additionally, there is the potential for an increase in the occurrence of fires, particularly in urban-wildland interface areas, due to increasing human encroachment. See discussion under Impact 4.13.H. The incremental effect of growth within Riverside County would result in cumulatively considerable fire hazard increases regardless of the General Plan build out scenario, including the future growth associated with the project, GPA No. 960.

(2) Non-Substantial Incremental Impacts

- Future development would introduce more people, property and structures to potential hazards as a result of the routine transport, use or disposal of hazardous materials, for example through toxic spills or other contamination events.

- Growth would increase the use, transport and disposal of hazardous substances, increasing the risk of accidental release of hazardous materials, e.g., during transport or through accidental explosion or other accidental means.

- Future development would also increase the potential for hazardous emissions or related hazards within one-quarter mile of a school; both by increasing use of hazardous substances near existing schools and by introducing new schools potentially into proximity of hazardous materials.

- Similarly, future development would also increase the potential for hazards due to development on or near a site on the State of California's Cortese List of contaminated sites, leaking underground storage tanks, hazardous waste sites, etc.

- Future development would introduce more people, property and structures to potential hazards as a result of their proximity (generally within 2 miles) to public use airports, as well as private air facilities, heliports, military air bases, etc.

- Future development would result in more people and their vehicles needing to evacuate an area in the event of an emergency, particularly for wildfires. This additional traffic could hinder emergency response plans for public safety personnel and equipment in a disaster or emergency.

d. Mitigation

As described in detail in Section 4.13.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative hazardous material and safety impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.13.3 for details on each regulation.

- Comprehensive Environmental Response, Compensation and Liability Act

- Resource Conservation and Recovery Act
- Hazardous Materials Transportation Act
- California Emergency Services Act
- Statewide Standardized Emergency Management System
- Hazardous Waste Control Law
- Riverside County Fire Protection Master Plan
- Ordinance No. 269 – Height Limits of Structures within Certain Distances of March Field
- Ordinance No. 348 - Regulating Land Use
- Ordinance No. 448 - Airport Operations
- Ordinance No. 576 - Regulating County Airports
- Ordinance No. 615 – Hazardous Waste Storage, Treatment and Recycling
- Ordinance No. 617 – Underground Storage Tanks Containing Hazardous Substances
- Ordinance No. 651 – Disclosure of Hazardous Materials and Emergency Response
- Ordinance No. 695 - Abatement and Notices for Hazardous Vegetation
- Ordinance No. 718 - Regulating Medical Wastes
- Ordinance No. 787 - Fire Code Standards

Key General Plan Policies: See Section 4.13.3 for the text of each policy.

- Safety Policies: S 5.1 - 5.21, 6.1, 7.1 - 7.3, 7.6, 7.9 and 7.14
- Land Use Policies: LU 1.8, 5.1, 7.8, 7.9, 10.1, 15.1 - 15.9 and 31.2

e. Significance

The analysis above indicates that future development consistent with any of the General Plan build out scenarios analyzed, including the proposed project (GPA No. 960), would contribute mostly non-substantially to incremental impacts related to hazardous materials and safety issues. Non-substantial cumulative impacts associated with GPA No. 960 include: use, storage and transport of hazardous materials, accidental release of hazardous materials, hazardous emissions near schools and effects from existing site contamination, as well as safety hazards for people within two miles of a public or public-use airport, private airstrip or heliport.

Even with mitigation, however, the project would contribute substantially to significant cumulative impacts due to increased people and property in areas at risk for high or very high fire hazards, particularly within interface/

wildland areas. Build out of the cumulative General Plan scenario would do likewise. Due to the vast expanse covered by Riverside County, the wide variety of potential fire sources and fuels, and the sheer number of people and properties involved, even with the reduction of individual implementing projects to less than significant levels, the wildfire risk within Riverside County overall would remain cumulatively considerable for all of the General Plan build out scenarios. There is no feasible mitigation that would fully reduce these cumulative impacts to below the level of significance. Thus, even though project effects would be individually limited, GPA No. 960's incremental contribution to cumulative housing and population impacts would be significant and unavoidable. Build out of the cumulative General Plan scenario would also result in significant and unavoidable cumulative impacts to population and housing within Riverside County.

13. Cumulative Effects on Mineral Resources

Section 4.14 (Mineral Resources) discusses existing mineral resources in Riverside County, as well as the sources (and any updates) used. It also analyzes impacts from future development accommodated by the project, GPA No. 960, as well as the mitigation (through regulatory compliance) that would ensure impacts are less than significant. Areas already covered in Section 4.14 are not repeated here.

Section 4.14 of this EIR provides a complete description of the mineral resources and industry in Riverside County, as well as analysis of the existing and future impacts projected to occur as the county builds out. This data includes Table 4.14-A (Changes Affecting State Mineral Resource Areas) and Figure 4.14.1 (Mineral Resource Areas in Riverside County), Figure 4.14.2 (Riverside County Aggregate Resources of the Temescal Valley-Orange County and San Bernardino Production-Consumption Regions) and Figure 4.14.3 (Aggregate Resources of the Palm Springs Production-Consumption Region).

a. Existing Conditions

In Riverside County, most of the economically valuable mineral deposits known to occur in the county are located along Interstates 15, 215 and 10. Industrial minerals occurring and extracted in Riverside County currently include: clay, limestone, sand and gravel ("aggregates"), specialty sands and rock commodities. See Section 4.14.2 for specifics on the mineral commodities, locations and estimated amounts occurring in Riverside County.

The State Mining and Geology Board (SMGB) uses "Mineral Resource Zones" (MRZs) to classify lands that contain valuable mineral deposits. Use of MRZs can help identify mineral deposits to be protected from encroaching urbanization and land uses incompatible with mining. *The footnotes in Table 5.5-V provides descriptions of each of the MRZs.* After an area has been classified into MRZs, the SMGB then determines if the "classified" mineral resource deposit warrants "designation" as being of either "regional" (multi-community) or "statewide economic significance." Figure 4.14.1 in Section 4.14 identifies the areas within Riverside County with potential mineral resource deposits, according to State of California MRZ classifications. There are no sites within Riverside County designated as "locally important mineral recovery sites."

In defining economic viability, the State of California uses large, multi-county "Production-Consumption Regions" as their boundaries for study areas for aggregate production and their associated market areas. Figures 4.14.2 and 4.14.3 in Section 4.14 show the production-consumption regions occurring in Riverside County. See Section 4.14.3 for specifics on each region.

b. Future Conditions

Table 5.5-V (Cumulative Mineral Resource Zone Effects), below, shows the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), the Updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP).

It should be noted that, as shown in Figure 4.14.1 in Section 4.14, the Riverside County General Plan does not contain any "locally important mineral resource recovery sites." Since GPA No. 960 does not propose to change this, the proposed project would not have an effect on this type of resource. Similarly, build out of the CULM scenario would likewise have no effect as well.

Table 5.5-V: Cumulative Mineral Resource Zone Effects

Mineral Resource Zone Category	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
MRZ-2 in Sectors[1]						
Existing Total	**590**	**1,260**	**120**	**13,910**	**450**	**16,330**
CURR GP[2] Total	740	1,850	11,020	3,040	0	16,650
GP*U* / *GPA* 960 Δ (Change)	0	-20	0	0	+20	0
CULM GP Δ (Change)	+10	0	-10	0	0	0
MRZ-2[1]						
Existing Total	**2,060**	**4,380**	**900**	**26,350**	**1,170**	**34,860**
CURR GP[2] Total	2,780	3,560	24,010	3,190	860	34,400
GP*U* / *GPA* 960 Δ (Change)	+10	-30	-30	+50	-10	-10
CULM GP Δ (Change)	*-50*	0	*+50*	-10	0	-10
MRZ-2 and Sectors - subtotal						
Existing Total	**2,650**	**5,640**	**1,020**	**40,260**	**1,620**	**51,190**
CURR GP[2] Total	3,520	5,410	35,030	6,230	860	51,050
GP*U* / *GPA* 960 Δ (Change)	+10	-50	-30	+50	+10	-10
CULM GP Δ (Change)	*-40*	0	*+40*	-10	0	-10
Cumulative B/O Total	***3,480***	***5,410***	***35,070***	***6,220***	***860***	***51,040***
Change from Exist	*+830*	*-230*	*+34,050*	*-34,040*	*-760*	*-150*
MRZ-4[1]						
Existing Total	**4,850**	**113,390**	**171,910**	**1,418,030**	**6,300**	**1,714,480**
CURR GP[2] Total	5,020	132,200	1,405,170	170,170	8,570	1,721,130
GP*U* / *GPA* 960 Δ (Change)	-250	-500	+1,390	-140	+150	+650
CULM GP Δ (Change)	*+1,920*	*+100*	*-2,650*	*+180*	*+410*	*-40*
UNSTUDIED[1]						
Existing Total	**10,400**	**157,110**	**497,710**	**667,380**	**4,730**	**1,337,330**
CURR GP[2] Total	10,300	57,340	385,900	891,630	3,130	1,348,300
GP*U* / *GPA* 960 Δ (Change)	+170	+160	-9,320	+7,470	+110	-1,410
CULM GP Δ (Change)	*+3,580*	*+3,820*	*-6,220*	*-1,120*	*0*	*+60*
MRZ-4 & UNSTUDIED - subtotal						
Existing Total	**15,250**	**270,500**	**669,620**	**2,085,410**	**11,030**	**3,051,810**
CURR GP[2] Total	15,320	189,540	1,791,070	1,061,800	11,700	3,069,430
GP*U* / *GPA* 960 Δ (Change)	-80	-340	-7,930	+7,330	+260	-760
CULM GP Δ (Change)	*+5,500*	*+3,920*	*-8,870*	*-940*	*+410*	*+20*
Cumulative B/O Total	***20,820***	***193,460***	***1,782,200***	***1,060,860***	***12,110***	***3,069,450***
Change from Exist	*+5,570*	*-77,040*	*+1,112,580*	*-1,024,550*	*+1,080*	*+17,640*
MRZ-3[1]						
Existing Total	**57,690**	**81,390**	**77,020**	**660,290**	**17,710**	**894,100**
CURR GP[2] Total	*77,480*	*93,650*	*478,870*	*209,160*	*15,850*	*876,010*
GP*U* / *GPA* 960 Δ (Change)	+3,100	+60	-4,890	+1,890	+610	+770
CULM GP Δ (Change)	*+2,800*	*+1,660*	*-4,160*	*+730*	*-40*	*-10*

Mineral Resource Zone Category	Urban / Suburban	Rural / Agriculture	Interface / Wildlands	Vacant / Open Space	Public Facilities	Totals
MRZ-1[1]						
Existing Total	**3,700**	**7,750**	**1,140**	**7,550**	**2,000**	**22,140**
CURR GP[2] Total	8,750	9,240	1,140	2,050	1,570	22,750
GP*U* / *GPA* 960 Δ (Change)	0	0	0	0	0	0
CULM GP Δ (Change)	*+440*	*-530*	*+120*	*0*	*-30*	*0*
REST - subtotal						
Existing Total	**61,390**	**89,140**	**78,160**	**667,840**	**19,710**	**916,240**
CURR GP[2] Total	*86,230*	*103,890*	*480,010*	*211,210*	*17,420*	*898,760*
GP*U* / *GPA* 960 Δ (Change)	+3,100	+60	-4,890	+1,890	+610	+770
CULM GP Δ (Change)	*+3,240*	*+130*	*-4,040*	*+730*	*-70*	*-10*
Cumulative B/O Total	***89,470***	***104,020***	***475,970***	***211,940***	***17,350***	***898,750***
Change from Exist	*+27,080*	*+14,880*	*+397,810*	*-455,900*	*-2,360*	*-17,490*
Development Totals at Build Out						
Existing Total	**79,290**	**365,280**	**748,800**	**2,793,510**	**32,360**	**4,019,240**
CURR GP[2] Total	*105,070*	*298,840*	*2,306,110*	*1,279,240*	*29,980*	4,019,240
GP*U* / *GPA* 960 Δ (Change)	+3,030	-330	-12,850	+9,270	+880	0
CULM GP Δ (Change)	*+8,700*	*+4,050*	*-12,870*	*-220*	*+340*	0
Cumulative B/O Total	***113,770***	***302,890***	***2,293,240***	***1,279,020***	***30,320***	***4,019,240***
Change from Exist	*+34,480*	*-62,390*	*+1,544,440*	*-1,514,490*	*-2,040*	*0*

Footnotes:

1. Mineral Resource Zone (MRZ) classifications as established by the State Mining and Geology Board (SMGB):
   MRZ-1: Available geologic information indicates no significant mineral deposits present or there is little likelihood for their presence.
   MRZ-2: Available geologic information indicates significant measured (MRZ-2a) or inferred (MRZ-2b) mineral deposits present.
   MRZ-2 in Sectors: "Sectors" are MRZ-2 areas identified by SMGB as having "significant aggregate resources."
   MRZ-3: Available geologic information indicates existing mineral deposits of undetermined significance, with moderate potential for economic viability (MRZ-3a) or inferred viability (MRZ-3b).
   MRZ-4: Areas where not enough information is available to determine presence/absence of mineral deposits.
   Unstudied: Areas not studied by the SMGB.
   For more details on MRZ categories, see Section 4.14.2.B.
2. Defined as the General Plan as of end of *2009* ~~2008~~.
3. *See Tables 14.1 through 14.4 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (Mineral Resource Zones, updated per SMGB data, as outlined in Section 4.14) and project application data, 2012 *and 2014*.

As indicated in Table 5.5-V, build out of the current (*2009* ~~2008~~) General Plan will result in incremental increases in the amount of MRZ-2 *(significant mineral deposits known or inferred present)* land lost to urban/suburban and rural/agricultural development, including to a lesser degree land within Sectors (that is, significant aggregate resources). Larger amounts of both MRZ-2 and Sectors will also be converted from vacant/open space to interface/wildland uses. MRZ-4 areas *(areas without enough information)* will see similar incremental conversions. In these areas, build out would contribute incrementally to loss of potentially valuable mineral resources in Riverside County.

For the General Plan scenario that includes the proposed project (i.e., the GPU/GPA960 scenario), incremental growth accommodated by the project would have a negligible (plus or minus ~~less than~~ 50 acres *or less*) effect on MRZ-2 and Sectors within any development category. *The biggest area of change caused by project (GPU) buildout would be the loss of nearly 7,500 acres of "unstudied" lands within currently vacant areas and open space. This loss would potentially be offset by a reduction in development footprint of over 9,300 acres of "unstudied" lands in the interface and wildlands of Riverside County. This may mitigate the adverse effects. However, without additional information the extent of any mitigation value cannot be predicted. The overall net effect, at any rate, indicates that General Plan buildout with the project would result in over 1,400 fewer acres of "unstudied" areas affected by future development.* ~~Incremental effects on MRZ-4 areas will also be minimal, as the largest area of loss would only be 2% of the total (for 150 acres of additional public facility uses). Unstudied areas would be similarly affected, with losses of 2% (under 200 acres) due to new urban/suburban uses and 4% (110 acres) of additional vacant/open space area lost. Areas of undetermined significance (MRZ-3) would be similarly~~

~~affected, with the greatest incremental losses totaling 4% due to additional urban/suburban uses and public facilities; that is, 3,100 acres and 610 acres, respectively.~~ None of these losses, however, would have a cumulatively considerable effect on mineral resource availability, including aggregates.

For build out of the CULM scenario, similar trends for MRZ-2 and Sectors are observed. Table 5.5-V also indicates that this scenario would have *a minor cumulative loss* ~~somewhat greater cumulatively losses~~ of mineral resources due to ~~larger~~ increases in urban/suburban areas. Growth in these areas would *also slightly* increase losses of unstudied and MRZ-4 areas *as well* ~~by an additional 40-50% (3,900 acres and 2,300 acres, respectively)~~. These losses are not likely to be cumulatively considerable, however, because of the large inventory of vacant land (roughly 1.3 million acres) that would remain available for potential mineral resource utilization under the CULM scenario even at full build out.

c. Impacts

Future development will contribute incrementally to cumulative mineral resource and mining impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts will include the following:

- Future development pursuant to any of the General Plan build out scenarios, including that with the project, will contribute incrementally, but not significantly, to the loss of availability of known mineral resources that would be of value to the region and the residents of the State of California, including within Sectors containing significant aggregate resources.

- Future development would also contribute incrementally, but not significantly, to the loss of lands where the availability and/or economic viability of mineral resources has yet to be established (for example, MRZ-3, MRZ-4 or unstudied areas).

- Indirect incremental impacts could also occur where MRZ-2 lands are encroached upon by incompatible uses, particularly residences and other sensitive uses, and where development lies adjacent to MRZ-2 sites otherwise suitable for mining. The regulatory and mitigation measures outlined below would ensure such impacts are not cumulatively considerable.

- The incremental loss of areas with potentially viable mineral resources could also result in the need for development of mineral resources further away from the locations where they would be used. This would result in additional incremental contributions to other cumulative effects, such as traffic, air pollutants, noise and loss of biological habitat. See discussions under these sections, in particular Section 5.4 (Growth Inducement), for more information.

d. Mitigation

As described in detail in Section 4.14.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative impacts to mineral resources and resulting from mining activities. These include the following items:

Key Regulations and Programs: See Section 4.14.3 for details on each regulation.

- California Surface Mining and Reclamation Act of 1975 (SMARA), PRC sec. 2710 *et seq.*

- Ordinance No. 555 - Implementing SMARA in Riverside County

Key General Plan Policies: See Section 4.14.2 for the text of each policy.

- Open Space Element Policies: OS 14.1-14.5
- Land Use Element Policies: LU 9.6, 9.7 and 27.1-27.5

e. Significance

Implementation of all of the above regulations and General Plan policies would be sufficient to ensure that all of the incremental impacts listed above would be less than significant. As such, the project's incremental impacts to mineral resources and their availability would not be cumulatively substantial. Implementation of the above regulations and Riverside County General Plan policies would ensure that significant cumulative impacts to known mineral resources of regional or statewide significance are either avoided or minimized to less than significant.

14. Cumulative Effects on Noise

Section 4.15 (Noise) evaluates the potential for the project, GPA No. 960, to affect or be affected by noise and vibration levels within unincorporated Riverside County. This includes assessing the potential for exposure of Riverside County's population to new noise or vibration sources introduced as a result of the project, as well as the potential for increased or new populations near existing or new noise and vibration sources. It also analyzes the mitigation (both through regulatory compliance and EIR mitigation) necessary to ensure impacts are less than significant or mitigated to the extent feasible. Areas already covered in Section 4.15 are not repeated here; see that section directly for additional resource details.

Section 4.15 of this EIR provides a description of the existing noise environment within Riverside County, as well as modeling of existing and future noise impacts projected to occur as Riverside County builds out over time. This data includes Table 4.15-A (Definitions of Acoustical Terms), Table 4.15-B (Common Sound Levels and Their Noise Sources), Table 4.15-C (Human Responses to Groundborne Vibration), Table 4.15-D (Short-Term Ambient Noise Monitoring Results), Table 4.15-E (Long-Term Ambient Noise Locations), Table 4.15-F (Long-Term Ambient Noise Monitoring Results), Table 4.15-G (Traffic Noise Levels, Base Year Conditions [Existing, 2007]), Table 4.15-H (Incremental Noise Impact Criteria for Noise-Sensitive Uses), Table 4.15-I (Groundborne Vibration and Noise Impact Criteria), Table 4.15-J (County Ordinance No. 847 Sound Level Standards), Table 4.15-K (Land Use Compatibility for Community Noise Exposure), Table 4.15-L (Stationary Source Land Use Standards) (*aka* General Plan Table N-2), Table 4.15-M (Future Traffic Noise Levels, With and Without Project), Table 4.15-N (Typical Vibration Levels Associated with Construction Equipment), Table 4.15-O (Typical Maximum Noise Levels for Construction Equipment) and Table 4.15-P (Airport Compatibility Zones and Noise Levels).

It also includes Figure 4.15.1 (Short-Term and Long-Term Noise Monitoring Locations Map), Figures 4.15.2 – 4.15.4 (Typical Railroad Noise Contours, for various rail configurations), Figures 4.15.5 – 4.15.17 (Existing and Planned Noise Contours, for various public airports), Figure 4.15.18 (Military Airspace in Southern California), Figure 4.15.19 (Existing Noise Contours for Chocolate Mountain Aerial Gunnery Range), Figure 4.15.20 (March Joint Air Reserve Base, Noise Contours), Figure 4.15.21 (Military Training Airspace in the CMAGR Operating Area), Figure 4.15.22 (Special Use Airspace in Riverside County), Figures 4.15.23 – 4.15.39 (Future Noise Contours, for various public airports) and Figure 4.15.40 – 4.15.53 (Projected Roadway Noise Contours, for various street and highway configurations).

a. Existing Conditions

Land uses within Riverside County include a range of residential, commercial, institutional, industrial, recreational, agricultural and open space areas. In general, vehicular traffic is the dominant noise source in the unincorporated Riverside County area, with a myriad of other noises associated with daily life also contributing (engine startups, lawn mower operations, dogs barking, people conversing, music, construction activity, wind blowing, birds chirping, etc.) Significant noise also occurs from airplane traffic, railroads and various stationary sources as described below. Sensitive noise receptors typically include residences, schools, child-care centers hospitals, long-term health care facilities, convalescent centers and retirement homes.

Ambient Noise: Ambient noise measurements provide a snapshot of the existing noise environment for a given area and may be done in both short and long term locations (29 and 8 sites, respectively). As reported in Section 4.15, surveys of the existing noise environment were conducted in 2010 at locations representative of the areas of greatest anticipated growth across Riverside County in order to document the existing noise environment and capture the noise levels associated with typical daily operations and activities in unincorporated Riverside County. Short-term noise measurements locations are identified in Table 4.15-D and illustrated in Figure 4.15.1. Long-term noise measurement locations are identified in Table 4.15-E and also illustrated in Figure 4.15.1. The resultant monitoring data is summarized in Table 4.15-F. The full data set is included in the noise study (see Appendix EIR-7).

Roadway Noise: Freeway and highway traffic-related noise levels in unincorporated Riverside County were estimated from a variety of parameters, including traffic volumes, vehicle mix, vehicle speed and roadway geometry. In particular, average daily traffic (ADT) volumes are used for traffic noise modeling, as generated by the Riverside County Traffic Analysis Model (RIVTAM). Noise results for the cumulative scenarios were modeled by the same procedures using the cumulative traffic data set (based on the cumulative additional GPAs data set described in the introduction to Section 5.5). The resultant noise levels are modeled into traffic noise contours by computer to facilitate comparisons amongst roadways. Table 4.15-G provides the results of the base year (2007) traffic noise calculations adjacent to representative segments of the freeways and the major roads (traffic volumes above 6,000 ADT) in unincorporated Riverside County. Figures 4.15.40 to 4.15.53 in Section 4.15 show typical roadway noise contours.

Railroad Noise: Riverside County is traversed by three rail mainlines: BNSF Transcon, owned by Burlington Northern/Santa Fe (BNSF); UP Los Angeles Subdivision (UP LA Sub) and UP El Paso Line, both owned by Union Pacific (UP). On average, 85 freight trains per day pass through Riverside County and Metrolink operates 24 daily passenger (commuter rail) trains per day on the San Bernardino line and 38 per day on the West Riverside (Orange County) line. However, the amount of traffic along the principal railroad lines fluctuates considerably. Daily train traffic produces noise that may disrupt activities in proximity to railroad tracks, for example horns sounded at at-grade crossings. Figures 4.15.2, 4.15.3 and 4.15.4 in Section 4.15 provide typical railroad noise contours.

Air Travel Noise: Riverside County is served by seven public use general aviation airports along with a number of smaller airports and air fields. Most of the airports in Riverside County have published airport noise contour maps; see Figures 4.15.5 through 4.15.17 (existing and planned conditions) and Figures 4.15.23 through 4.15.39 (future conditions) in Section 4.15. Public use airports located in or affecting unincorporated Riverside County include: Banning Municipal, Bermuda Dunes, Blythe, Chiriaco Summit, Corona Municipal, Desert Center, Flabob, French Valley, Hemet-Ryan, Jacqueline Cochran Regional, Palm Springs International, Perris Valley, Riverside Municipal and (located in San Bernardino County) Chino. Noise contours from Los Angeles International and Ontario International airports are not included here because they do not extend to the Riverside County border.

Military Noise Sources: Riverside County is home to a number of military bases, including three active facilities: the Chocolate Mountain Aerial Gunnery Range (part of the Bob Stump Training Range Complex), March Joint Air Reserve Base and the Naval Surface Warfare Center. The Naval Warfare Center is not associated with aircraft, munitions or other significant military noise sources, however, the other two are active sources of these noises. See Figure 4.15.19 for noise contours for the Chocolate Mountain Aerial Gunnery Range and Figure 4.15.20 for noise contours for the March Joint Air Reserve Base. Military activities can have various effects on the ambient noise environment, mainly due to aircraft noise (including supersonic flight) and ordnance delivery. Ground-based noise and vibration can also be generated from artillery fire, ground-based arms, artillery and ordnance, detonation of high explosives and demolition charges, vehicles and operation of fixed and portable equipment, etc. Military facilities also have noise from typical non-military sources, such as vehicles and ORVs, commercial and industrial operations, landscaping and agricultural activities, etc.

Stationary Noise Sources: Stationary noise sources present in residential areas include HVAC and landscaping maintenance equipment (leaf-blowers, lawnmowers, etc.). Commercial uses often include larger, rooftop-mounted HVAC equipment which can produce point-source noise that most directly affects adjacent land uses. Amplified sound, e.g., from personal, home or automotive audio equipment, outdoor loudspeakers and music or theatrical performances, is another source. Conditional use permits, as well as Riverside County Ordinance No. 847, establish limitations on time and magnitude of noise for these sources.

Agricultural, Industrial, Recreational and Other Major Noise Sources: Agricultural operations may produce significant noise during planting and harvesting times from equipment operation. Agricultural noise may be disturbing to neighboring residential areas, particularly as urban development intrudes into agricultural lands. Industrial land uses can be associated with a variety of noise impacts, including shipping and loading facilities, concrete crushing facilities, recycling activities and other large mechanical or hydraulic equipment use, as well as natural gas extraction facilities, water treatment facilities and mining activities throughout Riverside County. Recreational lands and wildlife habitat are also impacted by noise from recreational uses, including sports park activities and ORV uses, particularly the uncontrolled use of ORVs. Noise intrusion into wildlife habitat drives off wildlife and, with prolonged use, may effectively reduce the amount of land used as habitat by various species.

b. Future Conditions

As noted above, for existing (baseline) conditions, noise data was developed both directly (through onsite measurement) and indirectly (through computer modeling), particularly for roadway noise levels. Similarly, for future conditions, computer modeling was used to estimate expected noise levels for a variety of situations, including various configurations and volumes for air traffic, railroad lines and roadways (both freeway and local networks). Future condition results for the expected build out conditions of Riverside County as it would exist if the General Plan was updated per GPA No. 960 (i.e., GPU/GP960 scenario) are presented in Section 4.15, as noted previously. Likewise, data for build out of the existing General Plan was developed as part of EIR No. 441, which was certified for the RCIP General Plan in October 2003, and is thus collected in Section 4.13 of that EIR. (Note: that data was not rerun as part of this analysis since the document has already been approved and the roadway network has since changed.) An additional set of data was run, however, for build out (future) conditions for the CULM GP scenario. Because the noise modeling results are voluminous, they are not included in this section. The data is presented instead in Appendix EIR-12.

Lastly, because mobile noise sources (i.e., vehicular traffic) generate the vast majority of sound affecting ambient noise levels, this cumulative analysis compares the roadway noise levels projected for each of the build out scenarios. Additional modeling for hypothetical air and rail noise levels were not performed as these transportation noise sources are minor contributors overall to the ambient noise environment. Also, future noise

contours for both air and rail are included in the figures presented in Section 4.15 of this EIR, for example, see Figures 4.15.23 through 4.15.39 for future noise conditions for airports within Riverside County.

Analysis of Riverside County noise data indicates that build out of any of the analyzed General Plan scenarios (including the General Plan as amended per GPA No. 960, i.e., the "GPU/GPA960 scenario") would increase noise levels as a result of increased development. These impacts would incrementally contribute to cumulatively considerable noise levels and result in significant noise exposures to sensitive receptors at both existing and future uses. As discussed in greater detail in Section 4.15, future development will contribute incrementally to cumulative noise impacts as Riverside County builds out (develops) over time pursuant to the Riverside County General Plan.

As demonstrated by both the existing setting and future noise level data, the noise conditions in which existing uses are occurring and, more importantly (for the purposes of this EIR), in which future uses and sensitive receptors would be exposed, have been increasing over time. Data indicate that the effect of General Plan build out, with or without the project's proposed General Plan changes, would be potentially significant for any development that introduces new sensitive receptors into areas in which exterior noise levels exceed 55 dBA. It would likewise be significant for incremental traffic noise increases attributable to the project that would result in either an existing noise level (at any point) that exceeded 55 dBA or in an incremental increase exceeding any of the levels noted in Table 4.15-H of Section 4.15.

c. Impacts

Future development will contribute incrementally to cumulative noise and vibration impacts, both short-term (construction) and long-term (operational) as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Future development would incrementally increase rural, suburban and urban uses in Riverside County resulting in new noise-sensitive land uses in areas of existing excess noise or areas in which county growth would eventually lead to excess noise levels.

- Future development would contribute incrementally to increased traffic volumes on county roads, resulting in noise increases affecting sensitive land uses along existing and future roads. As a result, new development, particularly residential uses along and adjacent to major transit corridors, could be exposed to noise levels that exceed Riverside County's noise standards. Existing sensitive uses (residences, schools, etc.) would also be subject to these higher noise levels. Mitigation, such as setbacks and insulation are feasible for new uses. However, noise levels would increase incrementally over time to levels exceeding Riverside County noise standards, exposure of existing sensitive uses would be significant and unavoidable. Mitigation of the extremely small but numerous incremental increases that lead to this significant impact is infeasible due to the extremely widespread nature of the impacts.

- Future development would introduce new uses that increase noise levels several ways. First, new development would contribute noise from its construction and from the construction of needed new roads, infrastructure, public services, etc. Construction would result in temporary (short-term) noise impacts. Once completed, some of these new uses could be associated with stationary noise sources, possibly exceeding applicable noise standards. A stationary source that exposes sensitive receptors to

noise levels exceeding these standards may be significant if not reducible through regulatory compliance or mitigation measures.

- Under any of the General Plan build out scenarios, future development of noise-sensitive uses would occur in areas that either are currently exposed to or would be exposed to future traffic, airport or railroad noise levels that exceed the current standards, resulting in incremental increases in the number of people and properties exposed. Such development could also cause incremental exposure to noise from non-transportation (stationary) noise sources that exceed standards. Where setbacks and other mitigation measures are not feasible or do not sufficiently lower noise levels, such impacts would be cumulatively considerable.

- Future development associated with build out of any of the General Plan scenarios (including the with-project scenario) would contribute to incremental increases in traffic, resulting in corresponding incremental increases in traffic noise. Where this causes ambient noise levels to either exceed the threshold of acceptability (65 dBA CNEL, for example) or to become further unacceptable in areas already exceeding noise thresholds, such ambient noise increases would be cumulatively significant.

- For existing noise-sensitive land uses, however, due to the widespread and pervasive nature of noise impacts, it is generally not be feasible to mitigate the impact fully for all affected receptors. Thus, this cumulative impact would be significant and unavoidable, even with the implementation of all feasible mitigation.

- Future development near major rail lines or truck routes would also introduce new sensitive receptors into areas affected by existing groundborne vibration, incrementally increasing the people and properties exposed. In general, the potential for vibration-induced structural damage from such sources would be low, but disruptions or annoyance to occupants could occur if the uses were close enough to such sources. However, such vibration-induced disruption/annoyance can be avoided by not approving vibration-sensitive uses in areas where FTA vibration criteria (Table 4.15-I in Section 4.15, for example) are exceeded and requiring setbacks of sufficient distance to ensure vibration levels are within acceptable limits. Thus, compliance with regulations, as well as existing mitigation measures would ensure that operational vibration effects on new development are not cumulatively considerable.

(2) Non-Substantial Incremental Impacts

- Future development (of any of the General Plan build out scenarios, including the with-project scenario) will require construction activities that will cause incremental increases in temporary, short-term vibrations. These vibrations would be disruptive if located near sensitive receptors and will result in various levels of temporary groundborne vibration. Construction vibration can affect existing buildings (i.e., through structural damage) and their occupants (i.e., through activity disruption, annoyance, etc.) if they are located close enough to the construction sites. However, the temporary nature of the construction activities means that the disturbance would be of limited duration and, for this reason, would not be cumulatively significant. See also Impact 4.15-B discussion.

- Future development would necessitate construction activities which could affect nearby noise-sensitive receptors. Where these increases individually or cumulatively exceed applicable Riverside County standards, even if temporarily or only periodically, such impacts would be cumulatively considerable. In many cases, the peak sound levels would be extremely brief and overall ambient noise levels would remain within acceptable limits. At times, however, construction requirements and/or the proximity of the sensitive land use (e.g., within 150 feet or less) would make significant noise impacts unavoidable,

even though temporary. Because of the close distances involved, mitigation of sound levels to less than significant are technologically impossible. Thus, future development from any of the General Plan build out scenarios may result in cumulatively significant short-term noise impacts that would be significant and unavoidable.

- Future development resulting from build out of any of the General Plan scenarios may result in incremental increases in new noise-sensitive land uses that would be exposed to noise from operations at public and private airports, airstrips and helipads. Around larger public airports, noise levels can exceed acceptable standards in certain areas, as shown by noise-contour maps of existing, future and ultimate build out operational conditions for public airports. Compliance with ALUC, Riverside County and other applicable standards, as well as existing mitigation measures (see below), would ensure that airport-related noise impacts on future development are not cumulatively considerable.

d. Mitigation

As described in detail in Section 4.14.3, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative noise and vibration impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.14.3 for details on each regulation.

- Federal Noise Control Act of 1972
- Federal Aviation Administration (FAA) Standards - CFR, Title 14, Part 150
- California Building Standards Code - CCR Title 24
- California Noise Insulation Standard - CCR Title 24
- Riverside County Airport Land Use Compatibility Plans
- County Ordinance No. 847 - Regulating Noise

Key General Plan Policies: See Section 4.14.2 for the text of each policy.

- Noise Element Policies: N 1.1, 1.2, 1.7, 2.2, 3.2, 3.5, 4.4, 6.4, 7.1-7.4, 9.3, 9.7, 10.1-10.4, 11.1-11.5, 12.1, 12.2, 13.1-13.4, 14.2, 15.2 and 16.1-16.3
- Land Use Element Policies: LU 1.8, 4.1, 15.1, 15.2, 16.9, 16.10, 29.6, 30.6, 31.3 and 32.10
- Open Space Element Policies: OS 14.5
- Circulation Element Policies: C 3.27-3.29, 6.7, 9.4, 9.5, 13.7, 14.3, 20.8 and 23.9

(2) CEQA Mitigation

The following CEQA mitigation measures (MMs) were adopted as part of certification of EIR No. 441 for the RCIP General Plan in October 2003 and remain applicable to GPA No. 960 and future General Plan implementing projects:

Existing Mitigation Measures: In EIR No. 441, a number of mitigation measures were imposed to reduce long-term impacts from mobile and stationary noise sources. These measures remain applicable to this project and would also apply to future development.

- **Existing MM 4.13.1A:** Prior to the issuance of any grading plans, the County [of Riverside] shall condition approval of subdivisions adjacent to any developed/occupied noise-sensitive land uses by requiring applicants to submit a construction-related noise mitigation plan to the County [of Riverside] for review and approval. The plan should depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project through use of such methods as:

  a. The construction contractor shall use temporary noise attenuation fences where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses.

  b. During all project site excavation and grading on site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

  c. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.

  d. The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 am and 7:00 pm Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

- **Existing MM 4.13.1B:** The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours specified for construction equipment. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by [Riverside] County staff.

- **Existing MM 4.13.2A:** All new residential developments within the County [of Riverside] shall conform to a noise exposure standard of 65 dBA L_{dn} for outdoor noise in noise-sensitive outdoor activity areas and 45 dBA L_{dn} for indoor noise in bedrooms and living/family rooms. New development, which does not and cannot be made to conform to this standard, shall not be permitted.

- **Existing MM 4.13.2B:** Acoustical studies, describing how the exterior and interior noise standards will be met, shall be required for all new residential developments with a noise exposure greater than 65 dBA L_{dn}. The studies shall also satisfy the requirements set forth in Title 24, Part 2 of the California [Building]

Code (Noise Insulation Standards), for multiple-family attached homes, hotels, motels, etc. No development permits or approval of land use applications shall be issued until an acoustic analysis is received and approved by the [Riverside] County Planning Department.

- **Existing MM 4.13.2C:** The County [of Riverside] shall require that proposed new commercial and industrial developments prepare acoustical studies, analyzing potential noise impacts on adjacent properties, when these developments abut noise-sensitive land uses. The County [of Riverside] will require that all direct impacts to noise-sensitive land uses be mitigated to the maximum extent practicable.

- **Existing MM 4.13.2D:** Ensure that all new schools, particularly in subdivisions and specific plans, are sited more than 2 miles away from any airport.

- **Existing MM 4.13.3A:** Acoustical studies shall be required for all new noise-sensitive projects that may be affected by existing noise from stationary sources.

- **Existing MM 4.13.3B:** To permit new development of residential and noise-sensitive land uses where existing stationary noise sources exceed [Riverside] County's noise standards, effective mitigation measures shall be implemented to reduce noise exposure to or below the allowable levels of the zoning code/noise control ordinance.

- **Existing MM 4.13.3C:** No industrial facilities shall be constructed within 500 feet of any commercial land uses or within 2,800 feet of any residential uses without the preparation of a noise impact analysis. This analysis shall document the nature of the industrial facility as well as "noise producing" operations associated with that facility. Furthermore, the analysis shall document the placement of any existing or proposed commercial or residential land uses situated within the noted distances. The analysis shall determine the potential noise levels that could be received at these commercial and/or residential land uses and specify measures to be employed by the industrial facility to ensure that these levels do not exceed [Riverside] County noise requirements. Such measures could include, but are not limited to, the use of enclosures for noisy pieces of equipment, the use of noise walls and/or berms for exterior equipment and/or on-site truck operations, and/or restrictions on hours of operations. No development permits or approval of land use applications shall be issued until an acoustic analysis is received and approved by [Riverside] County staff.

- **New Mitigation Measures:** The new mitigation measure below is proposed to help minimize the effect of operational vibrations on existing uses. Compliance with this measure would ensure that potential adverse impacts of operational groundborne vibrations on new development are reduced to less than significant levels.

- **New MM 4.15.B-N1:** Prior to the issuance of any grading permit for new development involving vibration-sensitive land uses (which shall include, but not be limited to: hospitals, residential areas, concert halls, libraries, sensitive research operations, schools and offices), the project proponent shall provide evidence to the County of Riverside that placement of such uses within the area would not exceed groundborne vibration or groundborne noise impact criteria identified by the FTA (for example, the standards shown in Table 4.15-I [of Section 4.15] of this EIR) or as otherwise deemed appropriate for the situation by the County of Riverside.

e. Significance

As outlined above, future development accommodated by any of the General Plan build out scenarios, including that with the project (GPA No. 960), would result in cumulatively considerable increases in ambient noise levels and in the number of people and noise-sensitive land uses exposed to substantial noise levels. It would also incrementally increase ambient noise levels throughout Riverside County to cumulatively considerable levels in some places (where regulatory and mitigation measures are insufficient to reduce noise impacts). These measures would be sufficient when applied to new development, but are not feasible for existing development. Thus, for impacts to existing noise-sensitive uses, however, the wide-spread, diffuse nature of the noise impacts, particularly those from increase traffic volumes resulting from build out of any of the General Plan scenarios, as well as from the project itself, would result in cumulatively significant impacts that cannot be feasibly reduced to acceptable noise levels. Thus, the project would result in incremental generation or cumulative exposure of existing uses to excessive noise in some areas, or would result in a cumulatively substantial permanent or temporary increase in ambient noise levels. These cumulative impacts would be significant and unavoidable for the reasons outlined herein. For the impacts listed as not considerable, implementation of the regulatory programs and mitigation measures listed above would be sufficient to ensure that incremental impacts are not cumulatively significant. This includes incremental airport noise impacts and groundborne vibration impacts.

15. Cumulative Effects on Parks and Recreation

Section 4.16 (Parks and Recreation) of this EIR discusses existing parks and recreational facilities, including trails and bikeways, within Riverside County, as well as the sources used and the updates made to them for this data. It also analyzes the demand on existing and the need for future parks, trails and recreation facilities that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (through regulatory compliance) necessary to ensure impacts are less than significant. As a result, areas already covered in Section 4.17 are not repeated here; see section directly for additional resource details.

Section 4.16 of this EIR provides a complete description of existing park, trail and recreation facilities within Riverside County, as well as analysis of the existing and future need for such facilities projected as Riverside County builds out. This data includes Table 4.16-A (Park and Recreation Jurisdictional Totals), Table 4.16-B (Existing and Proposed Parks and Recreation) and Table 4.16-C (Theoretical Parkland Needs, With and Without the Project). It also includes Figure 4.16.1 (Existing Parks and Recreational Resources), Figure 4.16.2 (Countywide Trails and Bikeways Map), Figure 4.16.3 (Existing Trail Cross-Sections) and Figure 4.16.4 (Proposed Trail Cross-Sections).

a. Existing Conditions

Riverside County parks, trails, bikeways and other recreational areas and uses offer residents and visitors a myriad of recreational opportunities, while providing valuable buffers within built-up urban spaces. The locations of existing parks and recreation areas in unincorporated Riverside County are shown in Figure 4.16.1. A summary of all the existing parks within unincorporated Riverside County is provided in Table 4.16.B. Large swaths of open space and recreational lands fall under state or federal jurisdictions and many of these facilities, particularly the National Parks and Forests stretch beyond Riverside County. Table 4.16-A summarizes the parks and recreation areas under state and federal jurisdiction.

The County of Riverside currently maintains 35 regional parks encompassing roughly 22,300 acres total. More than half of these parks are located in the western portion of Riverside County, with the other facilities scattered throughout the eastern desert, central mountains and Colorado River regions. There are four park and recreation

districts covering portions of Riverside County: Beaumont-Cherry Valley, Desert, Jurupa and Valleywide. Together, they provide approximately 27 neighborhood and community parks on approximately 275 acres of parkland. Additionally, some County Service Areas (for example, CSA 134) also provide local park or trail maintenance services, often for parks and trails constructed as part of new development projects. The cities within Riverside County also offer numerous park and recreational facilities; currently 215 parks spanning over 1,500 acres. However, these city facilities are outside the scope of the County of Riverside's jurisdiction (though they may still be affected by growth within Riverside County, see discussions below). Note: the cities of Jurupa Valley and Eastvale are treated as unincorporated land for the purposes of this EIR section since their incorporation dates (July 2011 and October 2010) post-date this EIR's NOP date of April 2009.

The Riverside County Regional Park and Open Space District (Park District) acquires, manages, develops and maintains 27 neighborhood and regional parks throughout Riverside County. The Park District maintains approximately 71,700 acres of land including 150 miles of multi-purpose recreational trails, seven archeological sites, 16 wildlife reserves and natural areas. It also operates one boxing facility, manages four nature centers and patrols six historic sites, and provides annual interpretive programs to more than 82,000 students. The Park District's park and open space resources provide enjoyment to residents of Riverside County and visitors alike. There are also a number of off-road vehicle (ORV) parks within Riverside County operated by the USFS and BLM on federal lands, as well as numerous private recreational facilities throughout the county.

There are also many miles of trails located throughout Riverside County in a variety of designs for pedestrians, equestrians, bicyclists and (on some) all-terrain vehicle enthusiasts to enjoy. The General Plan outlines standards for several trail types. Existing trails and proposed trail alignments are shown in Figure C-7 of the General Plan for the countywide system; more detailed maps are included in the Area Plans. Figure 4.16.2, below, shows the countywide system map. In addition to pedestrian uses, the Riverside County trail system includes plans for bicycle use, with three types of bike paths plus a combination trail for bikes and pedestrians. The General Plan Circulation Element contains specifications and cross-sections for each of these trails, as well as standards for their construction and maintenance. See Figure 4.16.3 for existing trail cross-sections and Figure 4.16.4 (later in this section) for proposed cross-sections.

As part of GPA No. 960, an extensive revamping of the standards and specifications for both trails and bikeways is proposed to enable the realization of trails types that better suit the level of use and connectivity needed. This includes revising the existing "regional trail" standard to include two trail sub types that distinguish between the urban and rural usage associated with developed areas and the open space trails used more for regional connectivity and in open space both within and between developed areas. Other lesser changes are also proposed for other trails and bikeways. For text of relevant General Plan policies and trail standards, including those revised as part of GPA No. 960, see Section 4.16.3.

b. Future Conditions

In general, the introduction of new development into an area brings with it an attendant new demand for resources, including recreational opportunities and, in particular, parklands. State laws, in particular the Quimby Act, establish minimum standards for the amount of parkland to be provided for a given population. Per its implementation via Riverside County Ordinance No. 460, this minimum is 3.0 acres of parkland per 1,000 population or comparable in-lieu fee payment. Individual park and recreation districts or CSAs may have other standards.

Spatial analysis was performed to examine the cumulative effects of the various General Plan build out scenarios on demand/need for recreational opportunities. In addition, theoretical modeling was performed for each build out scenario to examine the hypothetical park needs associated with each as dictated by Quimby Act standards.

These analyses reflect the range of impacts associated with *theoretical* parkland needs for the specific land uses indicated for each scenario. See Section 4.16.5.B for details on the specifications, assumptions and methodology applied to the analyses presented here.

Table 5.5-W (Cumulative Theoretical Parkland Effects), below, shows the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), the Updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP). The same modeling procedures were used to estimate theoretical park acreage needs based on the populations predicted (i.e., under Section 5.5.2, cumulative population and housing effects) for each build out scenario. By controlling these variables in the modeling process, valid comparisons amongst the scenarios are possible.

Note, these data should not be construed as the *actual* specific park demands that would arise for a given area. Such determinations will be made on a project-by-project basis as development occurs and may vary based on the surrounding area. For areas within a park and recreation district, that agency will have final say on the future park and recreational facilities needed, as well as where, how and to what standards such facilities are developed. Each agency has developed its own plans, standards and requirements. Thus, because of the scope of these various countywide build out scenarios, individual districts and area plan calculations were not feasible for this analysis.

Per Table 5.5-W, General Plan build out will contribute incrementally to growth in populations throughout Riverside County which will utilize existing recreational facilities and add to the demand for additional recreational uses. Even with no project, build out of the current General Plan (CURR GP scenario) shows that over *3,400* ~~1,500~~ acres of additional parklands, more than double the existing amount, will be necessary to serve expected urban/suburban populations. The project (GPU/GPA960 scenario) would incrementally increase the need for parklands by *2%* ~~3%~~ (*80* ~~140~~ acres) and the cumulative (CULM) build out scenario would *also* incrementally add *50* ~~280~~ acres ~~(7%)~~. Neither of these increases is cumulatively considerable in terms of demand for additional parklands.

Table 5.5-W: Cumulative Theoretical Parkland Effects

PARKLANDS *(Total Acres)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*1,540*	*92%*	*3,430*	*68%*	*3,460*	*69%*	*3,560*	*69%*
Residential, Rural/Agriculture	*40*	*2%*	*740*	*15%*	*700*	*14%*	*720*	*14%*
Residential, Interface/Wildand	*90*	*5%*	*910*	*18%*	*840*	*17%*	*850*	*17%*
Total	***1,670***		***5,080***		***5,000***		***5,130***	
Difference (from EXIST)	---	---	*+ 3,410*	*204%*	*+3,330*	*+199%*	*+3,460*	*+207%*
Difference (from CURR)	---	---	---	---	*+50*	*+1%*	*+50*	*+1%*

Footnotes:
1. Calculations use 3.0 acres of parkland per 1,000 population. All values rounded to nearest 10.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.16 for actual values.
3. Build out scenarios: CURR GP = Current (*2009* ~~2008~~) General Plan; GP/GPA960 = Current (*2009* ~~2008~~) General Plan with changes proposed by GPA No. 960; TOT CULM GP = Current (*2009* ~~2008~~) General Plan, plus GPA No. 960, as well as changes proposed by existing GPAs approved or applied for through the end of 2009 (see Table 5.5-A).
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.5.a and 20.5.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factor from EIR No. 441, 2003.

Growth pressures within Riverside County will result in development that causes the incremental increases in use of existing parks, trails and other recreational facilities, both within unincorporated Riverside County and its cities, regardless of the General Plan build out scenario. Provision of additional facilities, as per the policies and regulations discussed below, would offset many of these impacts. However, due to the sheer size of the population growth, overall impacts to existing facilities would be cumulatively considerable for any of the build

out scenarios, including that encompassing GPA No. 960. Similarly, future development pursuant to any of the scenarios would also increase demand for additional trails and bikeways within new development and increase use of existing trails and bikeways, particularly those that connect new uses to existing destinations (schools, bus stops, retail areas, etc.).

c. Impacts

Future development will contribute incrementally to cumulative impacts to parks, trails and other recreational facilities as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Future development per any of the scenarios would result in population growth in Riverside County, incrementally increasing the number of people using existing neighborhood and regional parks, trails, bikeways and other recreational facilities. Where new facilities are not provided to offset such increased use, this would contribute to cumulatively substantial increases in the wear and tear on existing facilities.

(2) Non-Substantial Incremental Impacts

- As noted earlier, future development per any of the scenarios would result in population growth in Riverside County, incrementally increasing the number of people using existing neighborhood and regional parks, trails, bikeways and other recreational facilities. As compared to the existing (CURR) General Plan build out scenario, incremental effects on parks and recreational facilities, including trails and bikeways, associated with either the with-project (GPU/GPA960) scenario or the cumulative (CULM) scenario would be less than significant (3%-7%).

- Incremental population growth over time will necessitate construction of new or expansion of existing parks and recreational facilities. The construction or expansion of such facilities could have an adverse physical effect on the environment. However, compliance with existing regulations, Riverside County ordinances, mitigation measures from EIR No. 441 and General Plan policies, as outlined throughout this EIR, would be sufficient to ensure that resultant environmental impacts are less than significant.

d. Mitigation

As described in detail in Section 4.16.3, a variety of regulatory compliance measures would be implemented to avoid, reduce and minimize adverse cumulative park, trail and recreation impacts. These include the following:

Key Regulations and Programs: See Section 4.16.3 for details on each regulation.

- Quimby Act - CGC section 66477

- Ordinance No. 328 - Rules and Regulations for the Government of County or District Owned or Operated Parks and Open Space Areas

- Ordinance No. 460 - Regulating the Division of Land

Key General Plan Policies: See Section 4.16.3 for the text of each policy.

- Land Use Element Policies: LU 9.2 and 25.1-25.4
- Open Space Element Policies: OS 20.3, 20.5 and 20.6,
- Circulation Element Policies: C 4.9, 15.1-15.4, 16.1, 16.2, 16.7, 17.2, 17.3 and 18.1-18.3

e. Significance

Implementation of all of the above regulations and General Plan policies would be sufficient to ensure that all of the non-substantial incremental cumulative impacts listed above would be less than significant. As such, the project's incremental increase in demand for additional opportunities and the environmental effects of meeting such needs, would not be cumulatively considerable for build out of the General Plan as amended either per the proposed project (GPA No. 960) or the cumulative projects list (see Table 5.5-A). However, in terms of wear and tear on existing park and recreation facilities, including trails, incremental increases in use as county population grows will be cumulatively significant for either cumulative scenario (with-project or with all GPAs).

16. Cumulative Effects on Public Facilities

Section 4.17 (Public Facilities) of this EIR discusses existing public facilities, such as fire and law enforcement and solid waste disposal (landfills), as well as medical, educational and library facilities. Infrastructure not covered in Section 4.17 are discussed elsewhere; e.g., parks and recreation in Section 4.16, electricity and other energy sources in Section 4.10 and water supplies in Section 4.19. Section 4.17 discusses the data sources used for this topic and any General Plan updates made to them. It also analyzes the demand on existing public facilities and the need for future facilities that would arise from future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both through regulatory compliance and EIR mitigation) necessary to ensure individual project impacts are less than significant. As a result, areas already covered in Section 4.17 are not repeated here; see that section directly for additional resource details.

Section 4.17 of this EIR provides a complete description of existing public facilities within Riverside County, as well as analysis of the existing and future need for such facilities projected as Riverside County builds out. Specifically, fire protection is covered in Section 4.17.2 and includes: Figure 4.17.1 (Fire Stations in Riverside County) and Figure 4.17.2 (Fire Responsibility Areas), plus Table 4.17-A (Cities Served by The Riverside County Fire Department, i.e., CalFire), Table 4.17-B (CalFire Aid Agreements), Table 4.17-C (Fire Stations Serving Riverside County), Table 4.17-D (Theoretical Fire Station Needs With and Without the Project), Table 4.17-E (Theoretical Fire Station Needs for Areas of New Development Potential) and Table 4.17-F (Comparison of Theoretical Fire Support Needs at General Plan Build out).

Law enforcement is covered in Section 4.17.3 and includes: Figure 4.17.3 (Police and Sheriff Station Locations), plus Table 4.17-G (County Sheriff's Department Substations Serving Riverside County), Table 4.17-H (Theoretical Law Enforcement Needs With and Without the Project), Table 4.17-I (Theoretical Law Enforcement Needs for New Development Potential Area) and Table 4.17-J (Theoretical Law Enforcement Needs at General Plan Build out).

Solid waste management is covered in Section 4.17.4 and includes: Figure 4.17.4 (Landfill Locations in Riverside County), plus Table 4.17-K (Solid Waste Disposal Facilities in Riverside County), Table 4.17-L (Active Landfills in Riverside County), Table 4.17-M (Fifteen-Year Disposal Capacity Projections for Riverside County), Table 4.17-N (Theoretical Solid Waste Generation for Existing and Build out Conditions), Table 4.17-O (Theoretical

Solid Waste Generation for New Development Potential Areas) and Table 4.17-P (Comparison of Theoretical Solid Waste Generation at General Plan Build out).

Schools are covered in Section 4.17.5, which includes: Figure 4.17.5 (Public School Locations in Riverside County), plus Table 4.17-Q (Total School Enrollment for Riverside County School Districts), Table 4.17-R (Theoretical Student Generation With and Without the Project), Table 4.17-S (Theoretical Student Generation for New Development Potential Areas), Table 4.17-T (Theoretical Student Generation at General Plan Build out) and Table 4.17-U (Total Project-Related Student Population Changes by School District).

Libraries are covered in Section 4.17.6, which includes: Figure 4.17.6 (County Public Library Locations in Riverside County), plus Table 4.17-V (County Libraries Serving Riverside County) and Table 4.17-W (Theoretical Library Services Need Projections).

Medical facilities are covered in Section 4.17.7, which includes: Figure 4.17.7 (Hospital Locations in Riverside County), plus Table 4.17-X (Riverside County Family Care Clinics and Related Facilities), Table 4.17-Y (Theoretical Medical Service Needs With and Without the Project), Table 4.17-Z (Theoretical Medical Needs for Areas of New Development Potential) and Table 4.17-AA (Theoretical Medical Service Needs at General Plan Build out).

a. Existing Conditions

Fire Protection Services: The County of Riverside contracts with the State of California (the California Department of Forestry and Fire Protection, also now known as "CalFire") for fire protection. Under CalFire "Riverside Operational Unit" management, the Riverside County Fire Department (RCOFD) operates 95 fire stations in 17 battalions with about 230 pieces of equipment. Fifty-one of these stations, as well as three stations operated directly by CalFire, are located in the unincorporated portion of Riverside County. See Table 4.17-A. In addition to all of unincorporated Riverside County, the CalFire Riverside Unit serves small portions of San Diego and Orange counties, and also operates 18 city fire departments and one community services district (CSD) fire department for the Rubidoux CSD. The RCOFD also responds to a number of cities and communities through mutual and automatic aid agreements and also provides dispatch under contract. See Table 4.17-B.

Within its service area, RCOFD provides fire suppression, emergency medical, rescue and fire prevention services and is equipped to fight both urban and wildland emergency conditions. The department also provides weed abatement, ambulance response, swift water rescue and a Level 1 hazardous material team. The State of California (CalFire) also has primary responsible responsibility for managing fires on lands designated "State Responsibility Areas" (SRAs). A variety of local fire agencies, for example city fire departments, have jurisdiction over "Local Responsibility Areas" (LRAs). And on federal lands, Federal Responsibility Areas (FRAs), federal agencies (BLM or U.S. Forest Service) are responsible. Within Riverside County, the CalFire Riverside Unit is responsible for 544,180 acres of SRA, plus 2,630 acres in San Diego County and 620 acres in Orange County. As the contract fire protection agency for various cities within Riverside County, CalFire is also responsible for 13,206 acres of LRA land within Riverside County. Other agencies, such as city fire departments, etc., are responsible for 572 acres of LRA. On federal lands (FRA) within Riverside County, the BLM is responsible for 52,650 acres and the U.S. Forest Service for 62,520 acres. For a full discussion on SRAs, LRAs, etc., see Section 4.13 (Hazardous Materials and Safety).

Law Enforcement Services: Riverside County provides community policing and operates and maintains a number of correctional facilities under the Riverside County Sheriff's Department, which has 4,500 established positions, including roughly 2,300 sworn personnel. The Sheriff's Department is a "demand response" agency that maintains limited patrol services. Nine Sheriff Department stations are located throughout Riverside County

to provide area-level community service. See Table 4.17.3-A in Section 4.17.3.A for the locations of these substations. The Sheriff's Department also operates the Moreno Valley Police Department station in the City of Moreno Valley, providing law enforcement services under contract. The Sheriff's Department also operates five adult correction or detention centers located throughout Riverside County. The Riverside County Probation Department operates the juvenile detention facilities.

The County of Riverside requires the payment of developer mitigation fees prior to the final inspection by the Building and Safety Department for residential units. The fees are for the construction and acquisition of public facilities. The Sheriff's Department's ability to support the needs of future growth is dependent upon their financial ability to hire additional deputies. In addition, a growing population would require that the Sheriff's Department secure sites and construct new detention facilities on a timely basis.

Solid Waste Management: The Riverside County Waste Management Department (RCWMD) is responsible for the efficient and effective landfill disposal of non-hazardous county waste. To accomplish this, the RCWMD operates six active landfills and administers a contract agreement for waste disposal at the private El Sobrante Landfill, as well as oversees several transfer station leases and a number of recycling and other special waste diversion programs. As all of the private haulers serving unincorporated Riverside County ultimately dispose of their waste to County-owned or contracted facilities, they are not further discussed separately here; their county waste is included in the data discussed here.

All of the active landfills currently located in Riverside County are rated as Class III landfills per CCR Title 27 and only accept nonhazardous, municipal solid wastes. Franchise solid waste collection companies are granted permits to collect commercial and residential waste throughout unincorporated Riverside County under the County of Riverside's general operating authority. These companies are regulated by the Riverside County Department of Environmental Health (RCDEH). In addition, Riverside County landfills accept wastes collected in incorporated cities. Within these cities, solid wastes are either collected by the city as a municipal service or are collected by private firms pursuant to a franchise agreement with the city.

The RCWMD is specifically charged with the responsibility of: 1) implementing programs that adhere to the goals, policies and objectives outlined in Riverside County's Source Reduction and Recycling Element (SRRE) to ensure that unincorporated Riverside County achieves 50% diversion of solid waste from landfill disposal; 2) implementing programs that adhere to the goals, policies and objectives outlined in Riverside County's Household Hazardous Waste Element to reduce the amount of HHW disposed within landfills; 3) continuing to meet the solid waste disposal needs of all Riverside County residents into the future; and 4) maintaining and updating the CIWMP and reporting to the CIWMB on Riverside County's progress in complying with AB 939.

As part of its long-range planning and management activities, the RCWMD also ensures that Riverside County has a minimum of 15 years of capacity, at any time, for future landfill disposal. The RCWMD also maintains closed landfills and historic "dump sites" within the county and is involved in the closure and post-closure of 30 disposal sites, requiring in some cases construction, monitoring and maintenance activities. In general, waste originating from anywhere within Riverside County may be accepted for disposal at any of Riverside County's sites. In practice, to minimize truck traffic and vehicular emissions, each landfill has a service area that dictates where trash is received from. In Section 4.17.4.A, Tables 4.17-K and 4.17-L describe the solid waste disposal facilities in Riverside County.

All RCWMD sites have the potential for expansion. Currently, the Lamb Canyon Landfill is in the design and permitting stage for its next expansion (Phase 3) to provide capacity for an additional 30-plus years beyond the estimated closure date of 2021. The closure dates listed for RCWMD sites are estimated dates and subject to change based on actual tonnage received and any future RCWMD re-permitting activities. The specific

operational details, such as daily, yearly and lifetime capacities, intake volumes and estimated closure dates, are provided in Table 4.17-K for each active landfill serving Riverside County. The 15-year projection of disposal capacity is prepared each year by the RCWMD as part of the annual reporting requirements for the Countywide Integrated Waste Management Plan (CIWMP). The most recent 15-year projection submitted to the State Integrated Waste Management Board by the RCWMD is shown in Table 4.17-L. Riverside County's projection is disposal-based, accounting for both growth in disposal needs or demand (4% per year) and diversion requirements.

Schools: A total of 23 school districts serve Riverside County. Most of these are "Unified School Districts" providing schooling for grades K (kindergarten) through 12. Occasionally, differing grades are provided by separate districts, e.g., the Perris Union High School District only serves grades 9-12. Riverside County Office of Education (RCOE) provides educational and administrative support services to the school districts and over 430,000 students living in Riverside County. It also acts as an intermediary between the State of California and the local school districts.

RCOE reports a total of 467 K-12 school sites, including 17 charter schools, 273 elementary sites, 75 middle/junior high sites, 69 high school sites and 33 continuation/adult education sites, as well as 16 Head Start/preschool program sites. RCOE also reports that the average State of California funding per pupil is $5,011 for elementary districts, $6,022 for high school districts and $5,239 for unified districts. The Riverside County Public School Directory for 2010-2011 indicates there are more than 18,740 teachers and 17,480 non-teaching school employees serving the County of Riverside. Table 4.17-P in Section 4.17.5.A indicates student enrollment levels for the 2009-2010 and 2010-2011 school years. The 18 charter schools and four "independent study" schools located in Riverside County are privately run and not included. Since provision of private educational services, such as charter schools, is based on economic factors, rather than state mandate, they are not further discussed or analyzed in this section. There are also several community college districts providing advanced educational instruction in Riverside County, as well as a number of private, public and technical/professional schools of higher education.

Overcrowding in public schools is caused by increases in student enrollment. In April 2003 (the most recent year of data available), the State Department of Education established a list of schools and school districts identified as overcrowded under criteria set by the State of California. To be classified as a "Critically Overcrowded School," a school must have a pupil density greater than 115 pupils per acre for grades K-6 and 90 pupils per acre for grades 7-12. Within Riverside County, five elementary schools within the Riverside Unified School District were identified as such. No other schools or school districts within Riverside County were included in the state list.

Libraries: The County of Riverside operates a system of 32 libraries and two book mobiles. The names and locations of these county libraries are presented in Table 4.17-V in section 4.17.6.A. The Riverside County Library System operates an automated network that currently deploys over 350 computer/terminal workstations in a number of library branches and can also be accessed by Riverside County residents via Internet. The library system manages the library catalog of the 1.3 million items in the library system and the annual checkout of over 3.5 million books, audios and videos. In 2010, the Riverside County Library System reported over 681,000 "registered borrowers" utilizing county library services. In addition to providing the opportunity to review and/or check-out materials for personal use, the County of Riverside also operates a number of specific programs including adult and family literacy, and after-school and pre-school programs. Based on 2010 reported registered borrowers (681,117) and current square footage of library facilities available (333,884), at present facilities provide approximately 0.49 square feet of space per registered borrower (not the county population as a whole).

The County of Riverside's ability to support the needs of future growth is dependent upon its ability to secure sites for, construct and stock new libraries on a timely basis. At present, there is no specific funding mechanism for expansion of library facilities.

Medical Facilities: The County of Riverside operates the Riverside County Regional Medical Center (RCRMC) in Moreno Valley, which in turn operates a number of adjunct clinics. The Riverside County Department of Public Health also operates ten separate clinics throughout the county. Additional medical facilities and services, such as private/for profit and municipal facilities, exist within the county and are not addressed in this analysis. The RCRMC is a 520,000-square foot state-of-the-art tertiary care and level II adult and pediatric facility, licensed for a total of 439 beds and with a staff of approximately 2,100. The RCRMC provides upwards of 200,000 annual patient visits in its specialty outpatient clinics and 100,000 annual patient visits to its emergency room/trauma unit. The community-based clinics operated by the Riverside County Department of Public Health provide a wide array of family care services. See Table 4.17.6-A for full list of clinics and locations.

b. Future Conditions

The ongoing growth of Riverside County over time will introduce people, property and structures into previously undeveloped areas and also increase urban densities through infill and expansion, all of which would require adequate public services and facilities to ensure their health, safety and well-being. In terms of future conditions, a variety of data and analyses were collected or performed to determine what effects build out of Riverside County over time (in any of the respective scenarios, including cumulative) would have on existing public facilities, as well as the demand for future services. The results of these analyses are shown in tables below. For the methods used in calculating the individual metrics shown, see the respective subsections of Section 4.17.

The tables show the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), the Updated General Plan as per GPA No. 960 (GP/GPA960) and the cumulative General Plan as per the additional GPAs proposed or approved through 2009 (CULM GP) (see Table 5.5-A). See Sections 5.5.1 and 5.5.2 for specifics on each scenario.

It should be noted that the public services addressed here encompass the jurisdictions and responsibilities of numerous independent public agencies, both within and at times outside of Riverside County. Thus, for baseline (existing) services a theoretical value is used rather than actual data because of the variability in existing conditions and the amount of data available. See table footnotes for specifics. For all of the metrics, the same modeling procedures used to estimate theoretical needs in Section 4.17 were used. Estimates consist of *theoretical* data because specific area-by-area calculations for each resource, using each independent agency's own variables and procedures were beyond the scope of this programmatic analysis. Also, controlling these variables in the modeling process by using standardized factors countywide enables valid comparisons amongst the various scenarios without inconsistencies caused by varying models amongst agencies.

These data should not be construed as the *actual* specific demands for public facilities that shall arise for a given location. Such determinations will be made on a project-by-project basis as development occurs and may vary based on the surrounding area. For resources or areas overseen by a specific public entity (e.g., individual school districts), that agency will have final say on the future facilities needed, as well as where, how, when and to what standards such facilities are ultimately developed. Further, each agency has its own plans, standards and requirements that will apply. The values presented here are for comparative planning purposes only.

The theoretical projections are also based on the assumption that all the land uses proposed under each scenario are actually developed fully and as mapped/planned. As such, each represents the theoretical, worst-case scenario and likely over-states the actual real-world development potential likely to result. Actual future development of

individual parcels and areas mapped in the various build out scenarios, including those of GPA No. 960, are subject to the discretion of many hundreds to thousands of individual property owners, including private individuals, business entities and even various public agencies and other entities. The County of Riverside has little to no control over the decision to propose development (new or redeveloped) on a given site although the County of Riverside is the entity with discretion for review and approval of such development applications for most cases within unincorporated Riverside County. Demand for additional development is often a result of many interrelated factors, including population growth and economic demand, as well as location, local supply, infrastructure availability, costs, etc.

Review of the theoretical demand calculations in the tables *below* ~~above~~ reveal several trends, which is expected since each is derived from the same population and land use data. In general, build out of the current General Plan (CURR scenario) will result in cumulatively significant impacts across the gamut of public services. For many, the demand for services will be roughly doubled over the next 50 or so years. This applies to schools, as evidenced by the predicted *151%* ~~207%~~ increase in the expected number of students by 2060. Law enforcement services show *700 (205%)* ~~nearly 1,400 (213%)~~ additional sworn officers being needed. Library services show *over 2.8* ~~nearly 2.3~~ million volumes would be needed to serve the projected build out population of Riverside County. Similarly, demand for medical services would also be significantly affected, as indicated by the projected *209%* ~~210%~~ increase in the number of hospital beds that would be needed to serve the population of Riverside County at build out. Further, these projections are merely indicators for the overall needs of each public service; for example, to meet the needs of the students projected per Table 5.5-AA, affected primary school districts will need to incrementally add schools, teachers, support staff, etc., for elementary, middle and high school, as the student census increases. Secondary education services and facilities, such as continuing education and adult schools, junior colleges, vocational schools and universities, as well as private schools, specialty schools, etc., will be similarly affected.

Table 5.5-X: Cumulative Effect on Theoretical Demand for Fire Protection

FIRE STATIONS NEEDED[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*96*	*34%*	*176*	*50%*	*176*	*51%*	*182*	*50%*
Residential, Rural/Agriculture	*2*	*1%*	*38*	*11%*	*36*	*10%*	*37*	*10%*
Residential, Interface/Wildand	*5*	*2%*	*46*	*13%*	*43*	*12%*	*43*	*12%*
RESIDENTIAL - subtotal	***104***	***37%***	***260***	***74%***	***255***	***74%***	***262***	***71%***
Commercial[4]	*122*	*47%*	*13*	*4%*	*13*	*4%*	*25*	*7%*
Industrial[4]	*55*	*20%*	*77*	*22%*	*78*	*22%*	*79*	*22%*
ECONOMIC - subtotal	***172***	***23%***	***90***	***26%***	***91***	***46%***	***104***	***29%***
Total	***280***		***350***		***346***		***366***	
ENVI Δ (Difference from EXIST)	---	---	*+70*	*+25%*	*+65*	*+23%*	*+186*	*+31%*
GP Δ (Difference from CURR)	---	---	---	---	*-4*	*-1%*	*+17*	*+5%*

Footnotes:
1. Based on standards from EIR No. 441: one fire station needed per 2,000 dwelling units (residential) and one station per 3.5-million square feet of commercial or industrial land use. All values rounded to nearest 10.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.7.a and 20.7.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

Table 5.5-Y: Cumulative Effect on Theoretical Demand for Law Enforcement

LAW ENFORCEMENT *(# of Sworn Officers)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*770*	*93%*	*1,710*	*68%*	*1,730*	*69%*	*1,780*	*70%*
Residential, Rural/Agriculture	*20*	*2%*	*370*	*15%*	*350*	*14%*	*360*	*14%*
Residential, Interface/Wildand	*40*	*5%*	*450*	*18%*	*320*	*17%*	*420*	*16%*
Total	***830***		***2,530***		***2,500***		***2,560***	
ENVI Δ (Difference from EXIST)	---	---	*+1,700*	*205%*	*+1,670*	*+201%*	*+1,730*	*+208%*
GP Δ (Difference from CURR)	---	---	---	---	*-30*	*-1%*	*+30*	*+1%*

Footnotes:
1. Calculations use 1.5 sworn officers per 1,000 population pursuant to EIR No. 441's Mitigation Measure 4.15.C, adopted in October 2003. All values rounded to nearest 10.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.
3. Build out scenarios: CURR GP = Current (*2009* ~~2008~~) General Plan; GP/GPA960 = Current (*2009* ~~2008~~) General Plan with changes proposed by GPA No. 960; TOT CULM GP = Current (*2009* ~~2008~~) General Plan, plus GPA No. 960, as well as changes proposed by existing GPAs approved or applied for through the end of 2009 (see Table 5.5-A).
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.8.a and 20.8.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factor from EIR No. 441, 2003.

Table 5.5-Z: Cumulative Effect on Theoretical Solid Waste Generation

SOLID WASTE GENERATED *(tons/y)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*78,400*	*3%*	*144,100*	*4%*	*144,600*	*4%*	*148,900*	*4%*
Residential, Rural/Agriculture	*2,000*	*0.1%*	*31,000*	*1%*	*29,300*	*1%*	*30,200*	*1%*
Residential, Interface/Wildand	*4,400*	*0.2%*	*38,100*	*1%*	*35,200*	*1%*	*35,500*	*1%*
RESIDENTIAL - subtotal	***84,800***	***4%***	***213,200***	***7%***	***209,100***	***6%***	***194,600***	***6%***
Commercial[4]	*99,600*	*4%*	*106,000*	*14%*	*108,900*	*14%*	*213,000*	*6%*
Industrial[4]	*2,808,700*	*92%*	*2,923,400*	*81%*	*2,935,700*	*80%*	*2,877,100*	*88%*
ECONOMIC - subtotal	***2,089,700***	***96%***	***3,316,000***	***93%***	***3,044,600***	***94%***	***3,999,800***	***94%***
Total	***2,274,100***		***3,242,600***		***3,253,700***		***3,427,400***	
ENVI Δ (Difference from EXIST)	---	---	*+968,500*	*+43%*	*+979,600*	*+43%*	*+1,153,300*	*+51%*
GP Δ (Difference from CURR)	---	---	---	---	*+11,100*	*+1%*	*+184,800*	*+6%*

Footnotes:
1. Based on standards from EIR No. 441 (tons/year): 0.4100 per dwelling unit, 0.0024 per commercial square foot and 0.0108 per industrial square foot. All values rounded to nearest 100.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.6.a and 20.6.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

Table 5.5-AA: Cumulative Effect on Theoretical Student Generation

STUDENTS GENERATED *(# students)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*156,120*	*92%*	*286,730*	*68%*	*287,760*	*69%*	*296,350*	*69%*
Residential, Rural/Agriculture	*3,980*	*2%*	*61,680*	*15%*	*58,250*	*14%*	*60,040*	*14%*
Residential, Interface/Wildand	*8,760*	*5%*	*75,800*	*18%*	*70,080*	*17%*	*70,600*	*17%*
Total	***168,860***		***424,210***		***416,090***		***426,990***	
ENVI Δ (Difference from EXIST)	---	---	*+255,350*	*+151%*	*+247,230*	*+146%*	*+258,130*	*+2153%*
GP Δ (Difference from CURR)	---	---	---	---	*-8,120*	*-2%*	*+2,780*	*+1%*

Footnotes:
1. Based on standards from EIR No. 441 (# of students per dwelling unit): 0.3690 elementary, 0.2010 middle and 0.2460 high school. All values rounded to nearest 10. Note: Each school district has its own factors and is responsible for the actual planning and implementation of its school facilities.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.

3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.9.a and 20.9.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

Table 5.5-AB: Cumulative Effect on Theoretical Library Demand

LIBRARY DEMAND *(# volumes)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	*%*	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*1,079,200*	*92%*	*2,854,800*	*68%*	*2,881,800*	*69%*	*2,967,800*	*69%*
Residential, Rural/Agriculture	*32,700*	*2%*	*614,200*	*15%*	*583,300*	*14%*	*601,400*	*14%*
Residential, Interface/Wildand	*71,800*	*5%*	*754,600*	*18%*	*701,800*	*17%*	*707,100*	*17%*
Total	***1,383,700***		***4,223,600***		***4,166,900***		***4,276,200***	
ENVI Δ (Difference from EXIST)	---	---	*+2,840,000*	*+205%*	*+2,783,300*	*+201%*	*+2,893,500*	*+209%*
GP Δ (Difference from CURR)	---	---	---	---	*-56,700*	*-1%*	*+52,600*	*+1%*

Footnotes:
1. Based on standard from EIR No. 441: 2.5 volumes per person. All values rounded to nearest 100.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.10.a and 20.10.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

Table 5.5-AC: Cumulative Effect on Theoretical Hospital Demand

HOSPITAL DEMAND *(# of beds)*[1]	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*970*	*93%*	*2,170*	*68%*	*2,190*	*69%*	*2,260*	*69%*
Residential, Rural/Agriculture	*20*	*2%*	*470*	*15%*	*440*	*14%*	*460*	*14%*
Residential, Interface/Wildand	*50*	*5%*	*570*	*18%*	*530*	*17%*	*540*	*17%*
Total	***1,040***		***3,210***		***3,160***		***3,260***	
ENVI Δ (Difference from EXIST)	---	---	*+2,170*	*+209%*	*+2,120*	*+204%*	*+2,220*	*+213%*
GP Δ (Difference from CURR)	---	---	---	---	*-50*	*-2%*	*+50*	*+2%*

Footnotes:
1. Based on EIR No. 441 standard: 1.9 hospital beds per 1,000 population. All values rounded to nearest 10.
2. "Existing" values per theoretical baseline calculations, see applicable portion of Section 4.17 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial uses include CR, CO and CT. Industrial uses include HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.11.a and 20.11.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

For a few public services, current General Plan build out would contribute fewer, but still significant, cumulative increases. These include fire protective services, which have a projected increase in demand of *25%* ~~70%~~ over existing needs. These demands take the form of increased numbers of both people and property needing protection from fires, both urban and wildfires. For fire services, cumulative impacts are particularly significant due to the extensive incremental expansion of urban fringes and rural development into interface/wildland and open, undeveloped areas that are at greater risk for wildland fires (see Section 4.17.2) and also more remote, which results in longer response times and greater difficulty in providing services.

For solid waste disposal *capacity* ~~facilities~~, the projected increase is *also* ~~a much more modest, but still~~ cumulatively significant, *43%* ~~16%~~ over the next 50-plus years. The various waste stream reduction and recycling (diversion) laws enacted by the state and implemented at the county and city level continue to contribute to the lower rates of cumulative increase being projected. Nevertheless, because of existing environmental constraints, landfill siting difficulties and also the long-term environmental impacts inherent in landfill operations (particularly emissions from trucks hauling wastes), EIR No. 441, certified for the current General Plan, found these cumulative impacts to be significant for existing waste disposal facilities.

As shown in the tables above, build out of each of the various General Plan scenarios shown will contribute incrementally to utilization of existing public facilities and demand for additional public facilities and services in Riverside County. On a cumulative basis, the effect of General Plan build out with the project, GPA No. 960, added to it (i.e., the GPU/GPA960 scenario) would generally be *very slightly reduced (1-2%).* ~~incrementally small; an increase of roughly 4% in most cases (3% for fire protection demands).~~ *Compared to the environmental baseline, however, the incremental increases in demand on public services would* ~~In nearly all cases, however, these small, incremental increases would nevertheless~~ be cumulatively considerable due mainly to the constraints upon the County of Riverside's ability to mitigate demands. See impacts, below, for more details. ~~The 1% incremental increase associated with the project projected for solid waste disposal needs is not cumulatively significant.~~

For the cumulative projects (CULM) scenario, ~~similar trends are seen, with~~ most services *would see* ~~seeing~~ an incremental increase of *1-6%.* ~~around 7%. The exception is for fire services, which show only a 3% increase, as this scenario focuses much more of its development within areas of existing and emerging urbanization.~~ For this alternative, all of the projected cumulative impacts would be significant, *particularly* ~~including~~ the increase in demand for solid waste disposal ~~(projected at 6%~~ due to the increased amount of commercial land uses proposed~~)~~.

c. Impacts

Future development will contribute incrementally to cumulative impacts to public services and facilities as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Fire Protection Services

- Future development would introduce additional people and property requiring fire protection and emergency response services. This would result in additional fire and emergency responses from existing facilities, increasing wear and tear on equipment and necessitating additional facilities and staff. Where the incremental increase in demand exceeds available services, this impact would be cumulatively significant for any of the build out scenarios.

- When new development is located outside the normal radius for acceptable response times, in particular in the urban fringe and wildland areas, additional wildland fire hazards would be created or exacerbated, with people and property at increased risk due to delayed response. In areas without adequate services nearby, this could result in the exposure of people and property to high fire hazard conditions without adequate fire protection.

- Fire and emergency vehicles and equipment responding would experience increased wear and tear due to additional distances traveled. Increased travel times would also decrease the number of calls that could be responded to during a shift. When demand is great enough in a given region, additional fire facilities would be built. However, the provision of additional services would also require financial resources to support additional manpower, equipment and fire stations or other facilities.

- Existing fire facilities may be expanded or new facilities constructed to ensure adequate levels of service and response times. In particular, new fire stations would be needed to serve outlying wildland and urban fringes as growth expands into these areas. In areas where development remains sparse and new facilities are not added, response times may drop below acceptable levels. This impact would be cumulatively significant.

- The construction of new fire stations has the potential to cause adverse environmental impacts in their own right. They will, however, be subject to a number of regulatory measures, Riverside County building codes, CEQA mitigation measures, etc., which should be sufficient to ensure no significant environmental impacts occur. See discussion for Impact 4.17-A in Section 4.17.2.

- Overall, future growth within unincorporated Riverside County, including as a result of GPA No. 960, will substantially contribute to a significant cumulative impact on fire protection personnel, equipment and facilities.

(2) Law Enforcement Services

- New development would introduce additional people and property requiring law enforcement services, including emergency response. This would result in additional routine and emergency responses from existing facilities and create demand for additional facilities and staff. Where the incremental increase in demand exceeds available services, this impact would be cumulatively significant for any of the build out scenarios.

- When new development is located outside the normal radius for acceptable response times, in particular in the urban fringe and wildland areas, hazards related to personal safety and crime would be created or exacerbated, and people and property would be at increased risk due to delayed response. In areas without adequate services nearby, this could result in the exposure of people and property to higher safety hazards and security risks.

- Law enforcement (e.g., County Sheriff Department) vehicles and equipment responding to calls would experience increased wear and tear due to additional distances traveled. Increased travel times would also decrease the number of calls that could be responded to during a shift. When demand is great enough in a given region, additional facilities (i.e., Sheriff Dept. substations) would be built. However, the provision of additional services would also require financial resources to support additional manpower, equipment, substations, correctional facilities, legal/judicial services, etc.

- Existing law enforcement facilities may be expanded and/or new facilities constructed to ensure adequate levels of service and response times throughout Riverside County. In particular, new substations would be needed to serve outlying wildland and urban fringes as growth expands into these areas. In areas where development remains sparse and new facilities are not added, however, response times may drop below acceptable levels. This impact would be cumulatively significant, regardless of build out scenario.

- The construction of new substations has the potential to cause adverse environmental impacts in their own right. They will, however, be subject to a number of regulatory measures, Riverside County building codes, CEQA mitigation measures, etc., which should be sufficient to ensure no significant environmental impacts occur. See discussion for Impact 4.17-B in Section 4.17.3.

- Overall, future growth within unincorporated Riverside County, including as a result of GPA No. 960, will substantially contribute to a significant cumulative impact on law enforcement (e.g., County Sheriff Department) personnel, equipment and facilities.

(3) Solid Waste Management

- The growth population from new residential uses and jobs and economic activity from new commercial, industrial and institutional uses occurring as Riverside County builds out over time would result in a corresponding increase the amount of solid waste generated by these various uses. The disposal of this additional waste would incrementally increase the wastes going into existing landfills, potentially hastening the end of their usable lives, and contribute to the need for new or expanded sanitary landfill facilities.

- Continued growth within Riverside County will incrementally increase the amount of refuse and other solid waste generated, also causing a corresponding increase in the need for disposal services, including hauling, sorting, recycling, ABOP and hazardous materials disposal, as well as an increased need for landfill space. It would also incrementally increase the number (and/or duration) of truck trips occurring within Riverside County for the collection of said wastes.

- The increase in disposal need may hasten existing landfills in reaching their permitted capacity, decreasing their expected lifespan. This incremental contribution of growth, as projected for the proposed project, GPA No. 960, or any of the other General Plan build out scenarios, will result in incremental, but non-substantial, cumulative impacts to existing landfills.

- Continued long-range planning by the Riverside County Waste Management Department will ensure that new disposal facilities (landfills) are developed to meet increasing needs and, in particular, to accommodate the loss of existing landfills as they reach permitted capacity and lifespan. The construction of additional landfills will result in additional incremental environmental impacts in their own right that would be addressed through both existing mitigation (e.g., from this EIR as well as EIR No. 441) and additional mitigation as deemed necessary based on project-specific analyses.

- All future development will be required to comply with all applicable state, federal and county requirements for solid waste disposal, including the Countywide Integrated Waste Management Plan (CIWMP). Accordingly, such development should not interfere with the implementation, attainment or compliance with any of these statutes or regulations. Nor will it cause inconsistencies with applicable statutes and regulations related to solid waste, including the CIWMP.

(4) Schools

- New development will incrementally introduce additional people, particularly schoolchildren, requiring school services within Riverside County. This would result in the need for additional classroom space, as well as teaching and support staff at levels exceeding current capacity. Where increased demand (increased student populations) exceeds available school services and space, impacts will be cumulatively substantial, for any of the General Plan build out scenarios, including that associated with GPA No. 960. Mitigation for such impacts will be provided in accordance with Riverside County Ordinance No. 575 and state law pursuant to the Leroy F. Green School Facilities Act (aka Senate Bill 50), which prohibits local agencies from imposing school impact mitigation fees, dedications or other requirements in excess of those provided by statute. However, to the extent the financial resources generated pursuant to statute are not sufficient to satisfy demand, cumulatively significant school impacts would result.

- Where increases trigger new school facilities or expansion of existing facilities, environmental impacts may occur in association with their construction and/or operation. Adverse environmental impacts would be associated with construction of new school sites/ facilities to the extent their location,

construction methods or operations affect the surrounding area. The construction of additional school facilities, particularly large campuses associated with high schools, have the potential to result in additional cumulatively significant environmental impacts in their own right.

(5) Library Services

- New development will incrementally introduce additional people utilizing library services within Riverside County. This would result in the need for additional library space, reading material and media, as well as librarians and support staff. Where increased demand exceeds available library services, impacts will be cumulatively substantial for any of the General Plan build out scenarios, including that associated with GPA No. 960, if not met with additional services and facilities.

- Mitigation of cumulative impacts to library services will be contingent upon the ability of Riverside County to provide adequate funding and the availability of suitable library sites. Where such financial resources are not sufficient to meet increased need, or where increased service provision lags behind the incremental increase in demand, cumulatively significant impacts to library services will result.

- Where increases trigger the need for new libraries or the expansion of existing facilities, environmental impacts may occur in association with their construction and/or operation. However, due to the relatively small footprints typically associated with libraries, their typically centralized, urban locations, as well as the potential for existing buildings to be retrofitted as libraries, environmental impacts associated with the construction of new facilities can feasibly be limited to less than significant levels.

(6) Medical Facilities and Services

- New development will incrementally introduce additional people within Riverside County needing a wide range of health and medical services. This would result in a corresponding increase in the need for additional medical facilities, including community clinics, hospitals, mental health services, specialty services, skilled nursing facilities, rehabilitation units, pharmacies, imaging and diagnostic laboratories and services, public health services, etc., as well as the skilled staff needed to operate them. Where increased demand exceeds available services, impacts would be cumulatively substantial for any of the General Plan build out scenarios, including that associated with GPA No. 960, if not met with additional services and facilities.

- Mitigation of cumulative impacts to Riverside County medical services will be contingent upon the ability of Riverside County to provide adequate funding and the availability of suitable sites. Where such financial resources are not sufficient to meet increased need, or where increased service provision lags behind the incremental increase in demand, cumulatively significant impacts will result. This may be particularly true for remote, rural or other underserved areas distant from existing major medical centers.

- Where increases trigger the need for new or expanded medical facilities, environmental impacts may occur in association with their construction and/or operation. For community clinics and other smaller scale facilities, the relatively small typical footprints and their typically centralized, urban locations, as well as the potential for retrofitting of existing buildings, environmental impacts associated with the construction of new medical or health facilities can feasibly be limited to less than significant levels.

- For major medical centers that will be needed to serve growing regions, however, adverse environmental impacts would be associated with construction of new facilities to the extent their location, construction

methods and operations affect the surrounding area. Thus, the large campuses typically associated with major medical centers have the potential to result in additional significant environmental impacts in their own right.

d. Mitigation

As described in detail in Section 4.17, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative impacts to public services and facilities. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.17.3 for details on each regulation.

- California Government Code, Section 51178: Fire safety standards
- California Building Code, PRC Sections 4290-4299: Addressing fire safety
- California Integrated Waste Management Act: Solid waste diversion regulations
- Assembly Bill 341 (Chesboro, 2011): Solid waste diversion regulations
- Leroy F. Greene School Facilities Act (SB 50): School development fee requirements and limits on CEQA mitigation (CGC Section 65995, in particular)
- County Integrated Waste Management Plan
- Riverside County Fire Protection Master Plan
- Riverside County Ordinance No. 659 - Development Impact Fees Program
- Riverside County Ordinance No. 787 - Fire Code Standards
- Riverside County Conditions of Approval (developed and issued on a project-by-project basis to address the specific project's effects)

Key General Plan Policies: See Section 4.17 for the text of each policy.

- Land Use Element Policies: LU 5.1, 5.2, 7.8, 10.1 and 31.2
- Safety Element Policies: S 5.1-5.9, 5.11, 5.12 and 5.14-5.21

(2) CEQA Mitigation

Existing Mitigation Measures: EIR No. 441, which was prepared and certified for the 2003 RCIP General Plan, contains a number of mitigation measures (MMs) imposed to reduce, avoid or minimize significant impacts related to various public facilities. Since these MMs were programmatic in nature, they remain applicable to this project (GPA No. 960) as well as potentially to any other future development occurring in Riverside County over time.

- **Existing MM 4.15.2A:** The County [of Riverside] shall require as a part of the development review process, proponents of new businesses, recreational and commercial land uses such as shopping centers, health clubs, large hotels over 200 rooms, convention centers and commercial recreational activities to provide onsite security.

- **Existing MM 4.15.2B:** The TLMA [County Transportation and Land Management Agency] shall inform the Riverside County Sheriff's Department of the existence of all new homeowner's associations within the county. The Riverside County Sheriff's Department shall coordinate with homeowner's associations to establish a Neighborhood Watch Program.

- **Existing MM 4.15.2C:** Riverside County shall meet and maintain a goal of 1.5 sworn officers per 1,000 population, as recommended by the International City Managers' Association.

- **Existing MM 4.15.2D:** The County [of Riverside] shall require the development applicant to pay the County Sheriff's established development mitigation fee prior to issuance of a certificate of occupancy on any structure as they are developed. The fees are for the acquisition and construction of public facilities.

- **Existing MM 4.15.3A:** Riverside County shall work with its franchise hauling companies to expand curbside and commercial recycling services throughout the unincorporated area of the county.

- **Existing MM 4.15.3B:** Riverside County shall follow State [of California] regulations in implementing the goals, policies and programs identified in the Riverside County[wide] Integrated Waste Management Plan in order to achieve and maintain a 50% reduction in solid waste disposal through source reduction, reuse, recycling and composting.

- **Existing MM 4.15.3.C:** In accordance with State [of California] regulations, Riverside County shall prepare an annual report of progress for the CIWMB to determine [Riverside] County's progress toward meeting its diversion goals and objectives, to project [Riverside] County's waste disposal needs and to determine if any of the elements that comprise the Riverside CIWMP require revision to include additional disposal capacity, reflect new or changed local and regional solid waste management issues, or reflect new or changed goals and objectives.

- **Existing MM 4.15.3D:** In accordance with CCR Section 18788, Riverside County shall review the Riverside CIWMP every five years to determine if [Riverside] County's waste management practices remain consistent with waste diversion goals and objectives and to assess if revision is required.

- **Existing MM 4.15.3E:** The County [of Riverside] shall require all future commercial, industrial and multifamily residential development to provide adequate areas for the collection and loading of recyclable materials (i.e., paper products, glass and other recyclables) in compliance with the State Model Ordinance, implemented on September 1, 1994, in accordance with AB 1327, Chapter 18, California Solid Waste Reuse and Recycling Access Act of 1991.

- **Existing MM 4.15.3F:** The County [of Riverside] shall require all development projects to coordinate with appropriate [Riverside] County departments and/or agencies to ensure that there is adequate waste disposal capacity to meet the waste disposal requirements of the project, and the County [of Riverside] shall recommend that all development projects incorporate measures to promote waste reduction, reuse, recycling and composting.

- **Existing MM 4.15.6A:** Riverside County shall provide a minimum of approximately 0.5 square foot of library space and 2.5 volumes per county resident.

- **Existing MM 4.15.7A:** Riverside County shall perform a periodic medical needs assessment to evaluate the current medical demand and level of medical service provided within each Area Plan. A periodic medical needs assessment shall be conducted every three years.

- **Existing MM 4.15.7B:** Riverside County shall fund the new construction and/or expansion of existing medical facilities according to the level of demand for medical services. The level of demand would be based on and determined by the outcome of the periodic medical needs assessments.

e. Significance

Implementation of all of the above regulations, General Plan policies and mitigation measures, would help reduce, avoid or minimize the various cumulative impacts to public services and facilities. However, while public service impacts associated with the project, GPA No. 960, are *individually* less than significant, for some public services, incremental impacts will remain *cumulatively* substantial, even with the implementation of all feasible mitigation. Specifically, incremental increases in demand for fire protection and law enforcement services, schools, libraries and medical services will be cumulatively significant under any of the build out scenarios examined herein, including the project (GPA No. 960). Due to the continued implementation of waste diversion and other measures, as well as effective long-range planning and the stable funding of its programs, the incremental contribution of future development arising from the project's General Plan changes would not result in cumulatively significant impacts on existing or future landfills.

17. Cumulative Effects on Transportation and Circulation

Section 4.18 (Transportation and Circulation) evaluates the potential for the project, GPA No. 960, to affect or be affected by the circulation network and transportation within unincorporated Riverside County, as well as its municipal areas (cities) and adjoining jurisdictions (Orange County, San Bernardino County, etc.). This analysis includes assessment of the functionality of both the existing and proposed circulation networks (freeways, expressways, highways and the arterial roadways) within Riverside County. For procedural reasons related to the standard methodology used for traffic studies, the section also addresses cumulative traffic impacts, both directly and tangentially (as traffic is an *inherently* cumulative problem). It also analyzes the mitigation (both through regulatory compliance and EIR mitigation) necessary to ensure impacts are less than significant or mitigated to the extent feasible. Areas already covered in Section 4.18 are not repeated here; see section directly for additional resource details.

Section 4.18 of this EIR provides a description of the existing circulation (roadway) network within Riverside County, as well as modeling existing and future circulation (traffic) impacts projected to occur as Riverside County builds out over time. In total, the circulation networks for both freeways and expressways (generally divided roads with controlled entries and exits) and for arterial roadways (generally county, city and private roads, though not exclusively), five scenarios were modeled and mapped, as per below. Modeling performed for these analyses by the Riverside County Transportation Department used the Riverside County Traffic Analysis Model (RIVTAM). See Appendix EIR-4, section D, for RIVTAM validation report (correlating actual traffic counts to RIVTAM model output).

- **Baseline:** Traffic counts and volumes for base year 2007 as modeled by the Riverside County Transportation Department in RIVTAM and validated with actual roadway counts for the arterial

network and uses Caltrans "Traffic Volumes on California State Highways, 2009" for freeways and expressways. See Tables 4.18-D and 4.18-E in Section 4.18, plus Figures 4.18.1(1-21) through 4.18.5(1-21) in Appendix EIR-4, Section E, for data. Note: This scenario is equivalent to the "Existing Conditions" scenario used throughout the rest of this cumulative analysis section.

- **Baseline Plus Project**: Per Section 4.18, this scenario is the "existing land use and roadway network for all locations outside of Riverside County boundaries (e.g., within cities) and build out of GPA No. 960 land use and roadway network for all County of Riverside facilities." When the 2003 General Plan build out results are added to it, it is roughly equivalent to the "GPU/GP960" scenario. See Figures 4.18.11 through 4.18.14, plus volume and LOS data for Baseline versus Baseline Plus Project in Figures 4.18.15 (1-21) and 4.18.16 (1-21), respectively.

- **2003 General Plan:** This scenario depicts traffic conditions expected upon build out of the existing (defined as 2003 in section 4.18) General Plan and build out of the cities' as well, that is, essentially the without-project (or "status quo") scenario. For data for this scenario, see Figures 4.18.17(1-21) through 4.18.21(1-21). [Note: This scenario is roughly equivalent to the "Current General Plan" build out scenario used elsewhere in this cumulative analysis section.]

- **GPA No. 960 Build Out:** The General Plan circulation network as updated pursuant to the changes proposed under GPA No. 960 at build out. Per Section 4.18, this scenario "represents build out of GPA No. 960 plus build out of all cities land use and roadway network." Thus, it is roughly equal to the project "delta," that is difference between existing and with-project build out conditions. See Figures 4.18.22 (1-21) through 4.18.27 (1-21), in particular Figure 4.18.23 (1-21) which shows the proposed network changes by Area Plan.

- **Cumulative Growth:** This scenario depicts the cumulative General Plan as outlined at the beginning of Section 5.5. That is, it encompasses the additional proposed GPAs as well as the project and is consistent with the "CULM" scenario used throughout this section. See Figures 4.18.28(1-21) through 4.18.31(1-21).

Each of the above figures consists of a set of 21 individual maps depicting the modeling results indicated by Area Plan. For each scenario data included directional daily volumes for freeways and expressways, as well as for the arterial network. Level of service results were also mapped similarly for both types of network. Due to their voluminous nature, all of the exhibits for Section 4.18 are included in the accompanying technical appendix (specifically, Section E of Appendix EIR-4). Additional figures accompanying Section 4.18 (also in Appendix EIR-4.E) include: Figure 4.18.6 (Western Riverside County Park-And-Ride Locations), Figure 4.18.7(1) (Riverside Transit Agency System Map), Figure 4.18.7(2) (SunBus System Map), Figure 4.18.8 (Metrolink Routes Map), Figure 4.18.9 (Riverside County Trails and Bikeway System) and Figure 4.18.10 (Public Airports in Riverside County). Lastly, Figure 4.18.32 (1-21) shows Metrolink service by Area Plan, and Figure 4.18.33 (1-21) does the same for bus rapid transit and express bus routes. All of the above figures are encompassed in technical appendix EIR-4, Section E. A general, countywide overview map of the circulation network can be found in the General Plan, Figure C-1, with detailed maps presented in the Area Plans.

In addition to spatial data, the section includes a number of tables as well: Table 4.18-A (Uninterrupted Traffic Flow Facilities Level of Service), Table 4.18-B (Interrupted Traffic Flow Facilities Level of Service), Table 4.18-C (Segment Volume Capacities/Level of Service for Riverside County Roadways), Table 4.18-D (Baseline Roadway Levels of Service for Freeways and State Routes), Table 4.18-E (Baseline Roadway Levels of Service for Roadway Segments One-mile or Greater (Arterial Road Network)), Table 4.18-F (Daily Truck Volumes on Freeways in Riverside County (Bi-Directional)), Table 4.18-G (Population, Household, Employment and Trip Generation

Comparison), Table 4.18-H (Vehicle Miles Traveled [VMT] Summary), Table 4.18-I (Vehicle Hours Traveled [VHT] and Average Travel Speed Summary), Table 4.18-J (Baseline and Baseline Plus Project (County Growth) Freeway and State Route Segment Levels of Service [LOS]), Table 4.18K (Baseline and Baseline Plus Project Roadway Comparison for Segments One Mile or Greater (Arterial Road Network)), Table 4.18-L (Baseline to GPA No. 960 Freeway and Expressway Comparison), Table 4.18-M (Baseline to GPA No. 960 Comparison for Segments One Mile or Greater (Arterial Road Network)), Table 4.18-N (Summary of Operating Characteristics – Miles of Roadways, Arterial Road Network), Table 4.18-O (Summary of Operating Characteristics – Lane Miles of Roadway, Arterial Road Network), Table 4.18-P (Matrix for Comparing Scenarios and Impacts (County Roads)), Table 4.18-Q (Matrix for Comparing Scenarios and Impacts (City Roads)) and Table 4.18-R (Mitigation Recommendations for GPA No. 960 (Build out)).

a. Existing Conditions

Vehicular Circulation and Roadway Network: Due to the interrelationship of urban and rural activities (employment, housing and services), and the low average density of existing land uses, the private automobile is the dominant mode of travel within Riverside County. Mass transit travel currently represents less than 2% of all trips made in Riverside County. Public transportation, where service is available, is utilized primarily by a transit-dependent population (senior citizens, students, low-income residents and the physically disabled) that generally do not have access to automobiles. Riverside County's industrial and agricultural economies depend on safe and efficient goods movement. Thus, the County of Riverside maintains an extensive network of low volume rural roads in sparsely settled areas to service goods movement and the agricultural industry across the nearly 200-mile expanse of Riverside County. Large trucks are the primary means of transporting such goods, with freight rail forming the critical backbone of the goods movement industry in Riverside County.

Riverside County is linked to Los Angeles and Orange counties principally by State Route (SR) 60 (Pomona freeway), Interstate 10 (I-10) (San Bernardino freeway), SR-91 (Riverside freeway) and SR-74 (Ortega highway). Interstate 15 (I-15) plus minor conventional highways (SR-79, etc.) provide southern links to San Diego County. To the north, links to San Bernardino County in the west are provided by I-15 and I-215, as well as by other major and minor local roadways. To the east, the I-10 freeway provides a connection to destinations in Arizona; I-15 and I-215 provide access through San Bernardino County to Nevada, including its primary recreation areas associated with Las Vegas and Lake Mead. In addition, the I-15 also provides access south to San Diego and its many tourist and recreational amenities, and to Mexico via I-5 and I-805.

The internal highway system includes numerous county roadways, as well as roadways within each of the 29 cities in Riverside County. These major roadways include Alessandro Boulevard, Cajalco Road, Center Street, Domenigoni Parkway, Grand Avenue, La Sierra Avenue, Magnolia Avenue, Monterey Avenue, Murrieta Hot Springs Road, Palm Drive, Ramon Road, Ramona Expressway, Rancho California Road, Temescal Canyon Road, Van Buren Boulevard, Washington Street and others.

To gauge the effectiveness of a given roadway within Riverside County's network, several metrics are used including "Level of Service" (LOS), a key measure of facility capacity. The 2010 Highway Capacity Manual (HCM) (5th Edition) defines the term Level of Service (LOS) as "a quantified stratification of a performance measure or measures that represent quality of service, measured on an A - F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst." Tables 4.18-A and 4.18-B provide lists descriptions of the quality of traffic flow for each LOS for uninterrupted and interrupted traffic flow, respectively.

Accordingly, Riverside County has established daily traffic volume range breaks for Circulation Element roadways to correspond to the various levels of service (A-F) for each facility type, consistent with the 2010 Highway

Capacity Manual. See Table 4.18-C of Section 4.18 for this table. The ranges of average daily traffic (ADT) volume described for each roadway facility (collector, arterial, secondary, etc.) at each LOS are intended to provide quantifiable ranges to achieve the qualitative performance outlined in the two tables mentioned above.

Thus, performance of the existing roadway system in Riverside County was analyzed by evaluating key roadway segments in terms of daily traffic volumes (either through direct roadway counts or modeled data), facility characteristics and levels of service. Figures 4.18.1 through 4.18.5 (including subfigures 1 through 21 for each representing each of the Area Plans within Riverside County), located in Appendix EIR-4, Section E, provide specific information related to existing roadway network, traffic flow, traffic volumes and level of service.

According to the analysis presented by the Riverside County Transportation Department in Section 4.18, they determined that the majority of Riverside County's roadway and highway system operate at LOS D or better. This means that motorists on most roadways do not experience substantial delays, even during peak travel hours, and roadway segments are generally operating under capacity. Some roadway and highway segments within Riverside County, however, are heavily congested. Table 4.18-D of Section 4.18 identifies segments of interstate and state routes identified by Riverside County Transportation where the daily traffic volumes indicate LOS E or F conditions. In addition, as indicated in Table 4.18-C, the Transportation Department also notes that under existing conditions, there are a number of interstate and state route segments in Riverside County that operate at or over capacity (e.g., LOS E or LOS F).

Using the Transportation Department's proposed levels of service (i.e., Table 4.18-B), Section 4.18 finds that the only major freeway operating at or below capacity along its entire length through Riverside County is the I-10. The other major freeways (I-15, I-215 and SR-60) only operate at or above capacity on certain segments in Riverside County (others operate within acceptable ranges). For example, SR-91 operates at LOS F between the Orange County line and its junction with SR-60/I-215 in the City of Riverside. Non-freeway state routes that also operate at or over capacity include: SR-62 between Indian Avenue and the San Bernardino County line (LOS F), SR-74 through Lake Elsinore (LOS F) and west of Hemet (LOS E) and SR-111, which hits LOS E on several segments in the Indian Wells/Palm Desert area. All other freeways and State routes have daily traffic volumes that indicate LOS D or better.

Park-and-Ride Facilities: Park-and-ride facilities provide resources that encourage increased vehicle occupancy, which reduces the number of vehicles using roadways and highways in Riverside County. In western Riverside County, nine park-and-ride facilities are operated by Caltrans (with a total of 1,024 parking spaces). The Riverside County Transportation Commission (RCTC) also provides twelve park-and-ride facilities providing 859 spaces, and four private commercial developments provide privately operated park-and-ride facilities providing 320 spaces total. There are no park-and-ride facilities located in eastern Riverside County. See Figure 4.18.6 in Appendix EIR-4, Section E, for location maps.

Public Transit Systems: Fixed-route transit services and demand response (dial-a-ride) transit services are provided by the Riverside Transit Agency (RTA) in the western portion of Riverside County and by the SunLine Transit Agency (SunLine) in the Coachella Valley. According to Section 4.18, RTA operates 36 fixed bus routes, eight commuter bus routes and demand responsive services within a 2,500 square-mile area of western Riverside County. RTA's fixed routes have been designed to establish transportation connections between all the cities and unincorporated communities in western Riverside County and to make commuter connections with transit services in neighboring counties, including OmniTrans in San Bernardino County, OCTA in Orange County and Metrolink (passenger rail) as well. At the end of 2010, RTA operated 97 full-size compressed natural gas buses, 97 dial-a-ride vans, 74 fixed-route vans and ten trolleys. In FY 2010, approximately 7.9 million passengers boarded vehicles operated by RTA, with an average of 26,500 passengers on weekdays and nearly 10,800 on weekend days. All RTA vehicles are wheelchair-accessible, and all full-size buses are equipped with bike racks.

SunLine provides public transit services for the Coachella Valley area, covering approximately 1,120 square miles and homes for about 435,000 residents. As of September 2010, SunLine operated 13 fixed routes with 524 stop locations and served roughly 3.6 million passengers annually. SunLine also operates the SunDial System, providing curb-to-curb demand responsive (dial-a-ride) service. At the end of 2010, SunLine operated a fleet of 125 vehicles, including buses and SunDial vans. In addition to the above, specialized public transportation services are also available through four municipal operators: the cities of Riverside, Corona, Banning and Beaumont. Additionally, the RCTC supports a number of specialized transportation programs including shared ride and vanpool services, social service dial-a-ride and specialized services for seniors and persons with disabilities. The Greyhound Bus Line also provides private transportation services linking the principal population centers of the county with other regions. Existing bus routes are shown in Figure 4.18.7 of Appendix EIR-4.

Waterways and Waterborne Travel: Unlike other parts of the United States, Riverside County does not have navigable waterways providing for significant transport of people and goods between destinations. Water travel is limited to recreational uses in designated regional and local recreational areas.

Passenger / Commuter Rail: Two types of rail passenger services are available in Riverside County: Intercity service provided by AMTRAK and commuter rail service operated by Metrolink. Along rail routes between the West Coast and points east, AMTRAK serves Riverside County at two train stations plus several locations where AMTRAK provides bus links to train stations. In the Coachella Valley, the Palm Springs AMTRAK station provides access to AMTRAK's Texas Eagle and Sunset Limited Services, which provide connections to points west including Los Angeles and to points east including Tucson, Arizona and El Paso, Texas. The downtown Riverside Metrolink/AMTRAK station serves the western portion of Riverside County as a stop along AMTRAK's Southwest Chief Service. The Southwest Chief connects Los Angeles to points east including Flagstaff, Albuquerque, St. Louis and Chicago.

Three Metrolink commuter rail lines serve western Riverside County and provide connections to destinations in Los Angeles, Orange, San Bernardino and Ventura Counties. These three lines are: the Riverside and 91 Lines, which connect downtown Riverside and Union Station in Los Angeles via northern (Ontario) and southern (Orange County) routes, respectively; and, the Inland Empire Line which runs through Riverside as it links San Bernardino to Oceanside in San Diego County. As of December 2010 (most recent data at the time of EIR preparation), five commuter rail stations serve Riverside County: Riverside-Downtown, Pedley, Riverside-La Sierra, Corona-North Main and West Corona. Existing passenger rail routes are presented on Figure 4.18.8 in the Appendix EIR-4.E. Planned commuter rail service (Metrolink) is shown in Figure 4.18.32 (1-21).

Airports and Aviation Services: Palm Springs International Airport, located within the City of Palm Springs, is the only airport within Riverside County providing passenger air service; however, Ontario International Airport in San Bernardino County is located close to the northwestern boundary of Riverside County and provides a convenient travel option for residents of western Riverside County. The County of Riverside owns and operates five public use general aviation airports: French Valley, Hemet-Ryan, Jacqueline Cochran Regional, Chiriaco Summit and Blythe. All but one (Hemet-Ryan) are located within unincorporated territory. As shown in Figure 4.18.10 (in Appendix EIR-4, Section E), a number of other public use general aviation airports are located throughout Riverside County, mainly within cities. A joint use (civilian/military) facility, March Air Reserve Base/Inland Port Airport, is located in Riverside County along Interstate 215 north of the City of Perris. In addition to its military functions, the facility is permitted to accommodate up to 21,000 civilian air flights a year and is expected to expand such operations in the future. The Chocolate Mountain Aerial Gunnery Range (CMAGR) east of the Salton Sea is an extremely active military training facility for fighter jets and other operations, though no formal airport exists on the site. (See Section 4.13 for additional details on military uses.) Existing airport locations are presented on Figure 4.18.10 in the Appendix EIR-4.E.

The Riverside County Airport Land Use Commission (RCALUC) adopts and implements Airport Land Use Compatibility Plans (ALUCPs) establishing criteria for acceptable land uses in the vicinity of airports (known as Airport Influence Areas) to protect and promote the safety and welfare of the residents of the airport vicinity and users of the airports while ensuring the airports' continued operation. Per state law (Public Utilities Code), General Plans must be consistent with ALUCPs unless certain key findings are made by the jurisdiction's decision-makers. A determination of consistency may be subject to conditions of approval recommended by RCALUC for application to the project by the local agency.

Truck Travel and Goods Movement: The primary generators of truck traffic in Riverside County are agricultural and industrial uses. Since agriculture is transitioning to an urban land use pattern in many portions of Riverside County, overall truck traffic volume generated by agricultural uses is expected to decline in the future. However, relocation and replacement of individual agricultural processing plants and other new industries can significantly alter both regional and localized patterns and concentrations of truck traffic in cities and established communities in Riverside County. As healthy industrial growth is expected within Riverside County, industrial truck traffic will continue to increase. Overall, truck trips are expected to increase as Riverside County approaches build out. Currently, trucks comprise at least 15% of the daily traffic volume on some of the primary goods movement corridors in Riverside County: I-15 from Temecula to Ontario, SR-60 westward from I-215 and the I-10 in the Coachella Valley and San Gorgonio Pass areas.

Because of the operational characteristics of trucks, their net effect on traffic flow is two to three times that of an equivalent number of passenger cars on level terrain, and could be considerably more than that on long upgrades, such as I-215/SR-60 eastbound in the Box Springs area and I-10 westbound west of Palm Springs. Traffic engineers describe the effect of trucks in terms of passenger car equivalents or PCEs. Thus, a roadway with 15% truck traffic could be regarded as having lost 30-45% of its capacity to trucks in terms of PCEs. Typically during peak commuting periods, however, the proportion of trucks in traffic is much lower; usually no more than 4-6%. Table 4.18-E in Section 4.18 lists daily truck volumes for selected facilities and locations in Riverside County and Appendix EIR-4, Section C, presents truck traffic volumes on all State of California facilities in Riverside County.

b. Future Conditions

As automotive travel vastly overshadows the other forms of transportation outlined above, the modeling and analyses performed for future conditions focuses on the roadway networks used by motor vehicles in and through Riverside County.

As detailed in Section 4.18, in order to forecast future traffic conditions at the theoretical build out of Riverside County, as well as estimate cumulative build out conditions for the cities within the county, socioeconomic data (SED) was developed by the Riverside County Center for Demographic Research (RCCDR). This data was used to represent the land use build out plans of both Riverside County and its cities. Land use plans were converted to SED using the methodology outlined in General Plan Appendix E-1 (Socioeconomic Build Out Projections, Assumptions and Methodology). This SED development process was used for each of the above scenarios, which were then modeled by the Riverside County Transportation Department via RIVTAM to forecast traffic volumes and other conditions for the various roadway segments studied. The results of these studies are included in Appendix EIR-4.

Table 5.5-AD (Cumulative Traffic Impacts), below, summarizes the cumulative conditions for the three General Plan build out scenarios examined in this section: Existing General Plan (CURR GP), which is the "2003 General Plan" scenario described above; the Updated General Plan as per GPA No. 960 (GP/ GPA960), which is roughly equivalent to the "Baseline Plus Project" scenario above, with the "2003 General Plan" results added to it; and, lastly, the cumulative General Plan as per the additional proposed GPAs through 2009 (CULM GP), the

"cumulative" scenario is presented. Existing conditions (i.e., "Baseline" per above) are also addressed. See Section 5.1 for full details on the specifics for each scenario and Section 4.18 for specifics on the traffic modeling scenarios. It should be noted that the same modeling procedures were used to model each of the build out scenarios.

As noted in Section 4.18, "Figures 4.18.1 [through] 4.18.31 [1-21, respectively] contained in Appendix EIR-4, [Section E] present information related to the analysis scenarios described above, including roadway network assumptions, Metrolink and BRT [bus rapid transit]/ express bus assumptions, traffic flow and levels of service."

As shown in the table below, build out of any of the analyzed General Plan scenarios (including the General Plan as amended per GPA No. 960, i.e., the "GPU/GPA960 scenario") would increase traffic levels as a result of growth and increased development, both in Riverside County and in the cities. These impacts would incrementally contribute to cumulatively considerable traffic volumes and result in significant traffic impacts at affected segments and intersections serving both existing and future uses. As discussed in greater detail in Section 4.18, future development will contribute incrementally to cumulative transportation and circulation impacts as Riverside County builds out (develops) over time pursuant to the Riverside County General Plan.

Table 5.5-AD: Cumulative Traffic Impacts

SCENARIO:	EXIST	CURR GP Build Out		GPU/GPA960 Build Out		CULM Build Out		
STATISTIC	Existing Conditions[1] (Baseline)	Current Gen. Plan[2] Build Out	*DELTA: CURR GP minus EXIST*	Gen. Plan Updated per GPA 960[4]	*DELTA: GPA 960 - CURR GP*	Gen. Plan plus Addn'l GPAs[5]	*DELTA: CULM - CURR GP*	*DELTA: CULM TOTAL minus EXIST*
Population[5] *(persons)*	**2,030,649**	**4,795,157**	+2,764,508	**4,775,846**	-19,311	**4,920,961**	+125,804	+2,890,312
Households[5] *(households)*	**653,858**	**1,489,444**	+835,586	**1,483,735**	-5,709	**1,524,740**	+35,296	+870,882
Employment[6] *(jobs)*	**731,232**	**2,114,052**	+1,382,820	**2,055,489**	-58,563	**2,077,997**	-36,055	+1,346,765
Trip Generation[6] *(trips)*	**8,180,157**	**17,918,938**	+9,738,781	**17,669,642**	-249,296	**17,951,189**	+32,251	+9,771,032
Vehicle Miles Traveled[7] *(miles)*	**54,527,493**	**155,196,166**	+100,668,673	**146,483,727**	-871,244	**148,156,298**	-7,039,868	-94,371,195
VMT Per-Capita[7] *(V/C)*	**26.85**	**32.37**	+5.50	**30.67**	-1.7	**30.11**	-2.26	+3.26
Vehicle Hours Traveled[8] *(hrs)*	**1,957,669**	**8,161,713**	+6,204,044	**7,064,338**	-1,097,375	**7,135,247**	-1,026,466	+5,177,578
Average Speed[8] *(mph)*	**25.00**	**23.25**	-1.75	**23.93**	+0.68	**20.76**	-2.49	-4.24

Footnotes:
A. All values over 100 rounded to nearest 10 after calculation except for those with decimals, which are not rounded.
1. Referred to as "Baseline" in Section 4.18 and Appendix EIR-4.
2. Referred to as "2003 General Plan" or "Existing General Plan" scenario in Section 4.18 and Appendix EIR-4.
3. Referred to as "Baseline-Plus Project" scenario in Section 4.18 and Appendix EIR-4.
4. Referred to as "General Plan with GPA No. 960" scenario in Section 4.18 and Appendix EIR-4.
5. Referred to as "Cumulative Growth" scenario in Section 4.18 and Appendix EIR-4.
6. Data from Table 4.18-F (Population, Housing, Employment and Trip Generation Comparison) in Section 4.18.
7. Data from Table 4.18-G (Vehicle Miles Traveled Summary) in Section 4.18.
8. Data from Table 4.18-G (Vehicle Miles Traveled Summary) in Section 4.18.
9. Data from Table 4.18-H (Vehicle Hours Traveled and Average Travel Speed Summary) in Section 4.18.

Source: Riverside County Transportation Department, Section 4.18 (Transportation and Circulation), Tables 4.18-F, 4.18-G and 4.18-H, 2012, and cumulative data from Appendix EIR-4, 2012.

As shown in the table above, each of the General Plan build out scenarios will generate additional population and employment sources, and therefore, additional vehicle trips compared to existing conditions (i.e., the Baseline scenario). According to the analysis presented in Section 4.18 and summarized above, growth resulting from the General Plan changes proposed by GPA No. would increase vehicle trips in Riverside County by 29% over baseline conditions. With no project, continued growth in Riverside County merely according to the existing General Plan (plus build out of the cities) would increase total number of vehicle trips within Riverside County by 119% over baseline conditions. Thus, even though the amount of growth accommodated by the project itself is decreased by 3%, overall countywide trip generation would still increase by a cumulatively considerable amount. When the additional growth proposed under the added GPAs of the cumulative (CULM) scenario is taken into account, future traffic levels increase even further. Thus, traffic impacts under any of the build out scenarios analyzed in this EIR would be cumulatively significant.

In addition to Table 5.5-AD, above, per the County Transportation Department, Tables 4.18-K and 4.18-L in Section 4.18 show some of the "numerous facilities" expected to operate at unacceptable levels of service under the updated (with-project) General Plan (i.e., GPU/GPA960 scenario), "even with the updated policies identified in GPA No. 960," such as the revised LOS ranges. The analysis also finds that the "Baseline Plus Project" build out scenario would "more than double" the miles of roadway that would operate at LOS E or LOS F.

c. Impacts

Future development will contribute incrementally to cumulative traffic, transportation and circulation impacts as Riverside County builds out over time pursuant to the Riverside County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Future implementation of the Riverside County roadway network as proposed under GPA No. 960 (GPU/GPA960 scenario) is designed to generally improve traffic conditions throughout Riverside County compared to that projected under build out of the Existing General Plan (CURR GP scenario). This is due to the refined roadway network design (i.e., revisions to better suit developing land use and circulation patterns) proposed under GPA No. 960. However, build out of Riverside County pursuant to the proposed project changes would still result in incremental traffic increases over time that will cumulatively contribute to deficient operations within Riverside County's circulation network, as well as adversely affect certain roadways within the cities of Riverside County, as well as areas outside the county (adjacent cities, counties, etc.). The proposed Circulation and Land Use Element policy changes incorporated into GPA No. 960 will partially address and improve these deficient conditions. However, a number of deficiencies will remain and additional implementation actions (i.e., the specific mitigation measures listed below) are necessary for some facilities to reduce cumulative traffic impacts to less than significant levels. For other transportation facilities, even with additional improvements, not all will be able to be mitigated to less than significant levels (i.e., due to physical, jurisdictional or environmental constraints for example) and will be subject to cumulatively significant unavoidable impacts.

- Future development would incrementally increase rural, suburban and urban uses in Riverside County resulting in new vehicle trips by travelers and commuters in previously little-traveled areas, areas of existing traffic congestion (i.e., currently unacceptable LOS), existing roadways of insufficient size or capacity to accommodate the resultant traffic increases and also new roadways. Incremental effects to these various roadway types, including those within the unincorporated county, its cities, state and federal highways, and adjoining roadways outside Riverside County, regardless of build out scenario, would result

in cumulatively considerable impacts where LOS or other applicable metric is or becomes unacceptable. According to the traffic analysis performed by the Riverside County Transportation Department, Section 4.18 (Transportation and Circulation) notes that, "Of the 153 identified roadways in Table 4.18-L, 99 roadways have mitigation designations recommended for adoption. The remaining 54 roadways require coordination with other jurisdictions and/or are constrained by existing development or environmental considerations." Thus, in locations constrained by existing development, geology, biology or other limiting factors or hazards, Riverside County's ability to fully mitigate such impacts through road widening, signalization and other improvements would be impaired resulting in cumulatively considerable impacts that cannot be mitigated to less than significant levels. Lacking jurisdiction over territory outside Riverside County's boundaries, the County of Riverside would similarly be constrained from fully mitigating to less than significant levels some of the cumulatively significant impacts occurring on roadways outside Riverside County.

- For roadway facilities, existing or future (build out) conditions are defined to have a significant adverse effect on traffic conditions if the roadway segment's Level of Service (LOS) shows operations falling to an unacceptable LOS (typically LOS E or F) as per the applicable adopted LOS targets (e.g., General Plan Figure C-3). As indicated in Section 4.18 (for example, in Tables 4.18-D and 4.18-E), since some roadway segments already operate at unacceptable LOS, additional traffic generated as Riverside County grows over time would further add to congestion, regardless of build out scenario. Tables 4.18-K and 4.18-L in Section 4.18 indicate the roadway segments expected to operate at unacceptable levels of service under the updated General Plan (with-project, i.e., GPU/ GPA960 scenario), "even with the updated policies identified in GPA No. 960," such as the revised LOS ranges.

- As growth occurs within Riverside County and its cities (pursuant to any of the build out scenarios), the increased population and employment sources will result in cumulatively considerable increases in both the vehicle miles traveled (VMT) and the VMT per-capita value (see Table 4.18-G or 5.5-AE). This VMT increase would lead incrementally to additional time spent in traffic by commuters, increased wear and tear on vehicles negotiating the traffic, increased noise and increased emission of air pollutants and greenhouse gases. Because not all roadways operating at (or forecast to operate in the future at) unacceptable standards can be mitigated, the growth associated with this project will incrementally contribute to cumulatively significant impacts on vehicle miles traveled.

- The VMT increases described above would in part be offset over time as new commercial and employment destinations are developed in local proximities for today's more isolated and under-served communities and also would be additional network (roadway) improvements expanding existing capacity and/or providing alternate routes to desired destinations. In these cases, congestion impacts would be temporary, that is limited to the period of use before planned improvements are implemented. Where the LOS change proposed under GPA No. 960 delays the implementation of improvements, growth in Riverside County will incrementally contribute to significant, but short-term, impacts. In most cases, provision of the roadway improvements called for in the proposed Circulation Element roadway networks will be sufficient to bring roadway operations to within acceptable limits. However, where improvements are not possible (i.e., for the reasons outlined in Table 4.18-R), impacts would be long-term rather than short-term, and cumulatively significant and unavoidable, as previously described, for any of the build out scenarios examined.

- Regardless of build out scenario, growth within Riverside County (and even just accounting for the growth that will occur within the cities of Riverside County) will incrementally increase the number of facilities and the total roadway lane-miles within the network over time compared to baseline conditions. The increases will, however, be slightly less for both the GPU/GPA960 and the CULM build out

scenarios compared to build out of the Existing General Plan (CURR GP scenario) due to the network refinements previously noted. Nevertheless, this incremental increase in lane-miles traveled will result in cumulatively considerable impacts for any of the build out scenarios based on the criteria described in Section 4.18.

- Table 5.5-AD indicates that total vehicle miles traveled (VMT) and also VMT per capita will be improved (i.e., decreased) for both the project (GPU/GPA960) and cumulative (CULM) build out scenarios. However, all of the General Plan build out scenarios will result in cumulatively considerable increases in both metrics as compared to existing conditions (EXIST scenario).

- Growth in Riverside County and its cities over time (pursuant to any of the build out scenarios) will also incrementally increase the vehicle hours traveled (VHT) as additional travelers seek to use roads without enough existing and/or future capacity to efficiently carry the new demand. (See Table 4.18-H in Section 4.18 or Table 5.5-AD, above.) The result is an increase in congestion, meaning slower travel times with trips taking longer to cover the same distance. This VHT increase would lead incrementally to additional time spent in traffic by commuters, increased wear and tear on vehicles negotiating the traffic, increased noise and increased emission of air pollutants and greenhouse gases. Per Section 4.18, several factors can influence this measure, such as the presence or absence of alternative travel routes, trip distributions over the course of a day or the way trips balance destinations and direction of travel during a given period of the day (for example, traveling off-peak instead of peak). The project's proposed change in LOS standards would further exacerbate this impact by delaying the point at which mitigation may be triggered (warranted) for new development contributions to additional traffic. For example, VHT values (and the associated cumulative impacts) will remain high if it takes longer to trigger a road's necessary congestion-alleviating improvements scheduled under the General Plan.

- Not all roadways will achieve acceptable levels of service as called for by the RCTC Congestion Management Plan (CMP) for Riverside County. As noted in Table 4.18-R, even with mitigation (including planned improvements), not all roadway segments can achieve acceptable levels of service. Where roadways addressed under the CMP cannot be brought up to operating within the standards deemed acceptable by the CMP, said roadways will conflict with the achievement of the CMP's objectives. This inconsistency will be cumulatively considerable for the circulation facilities at issue for any of the build out scenarios addressed.

(2) Non-Substantial Incremental Impacts

- Future growth within Riverside County as a result of any of the General Plan build out scenarios will contribute incrementally to changes in air traffic patterns, including increases in air traffic at some airport locations and expansion of air services or facilities at some airports. The increase or expansion of air operations will incrementally increase the areas potentially at risk from air-related safety hazards. Such incremental increases, however, would be non-substantial and would not be cumulatively significant. Further, no new airports or expansions are included in GPA No. 960.

- Future growth within Riverside County as a result of any of the General Plan build out scenarios will contribute incrementally, but non-substantially, to increased demand for rail and air travel and increased use of these systems. Waterborne travel effects will be minimal (and not individually or cumulatively significant) as recreational water uses are the only type occurring in Riverside County; there are no navigable waterways used in Riverside County. Any incremental increases in usage that would occur in association with GPA No. 960 would be non-substantial and not cumulatively significant. Further, no new air, rail or water facilities are included in GPA No. 960.

- Future growth within Riverside County as a result of any of the General Plan build out scenarios will also contribute incrementally to increases in road hazards due to design issues or incompatible uses. These incremental hazards, however, will be avoided, reduced or minimized to cumulatively less-than-significant levels through adherence to Riverside County Transportation design, engineering, construction, operation and maintenance standards.

- Future development would introduce new uses that require both new roads and, in some locations, improvements to existing roads. The construction of such roads would result in temporary traffic impacts to existing roads due to lane closures or narrowing, equipment encroachments, delays, detours, increased traffic on alternate routes and other effects. Due to their temporary nature, however, these construction impacts are generally do not rise to the level of cumulatively considerable.

- Roadway improvements to existing roads plus the addition of new roads will incrementally increase the need for and demand upon roadway maintenance. Such increases will not be cumulatively significant, however, according to Section 4.18. As indicated under Impact 4.18.F, a process exists that will ensure that proper road maintenance is supported by the demand levels which contribute to maintenance revenue, making the impact less than significant for GPA No. 960.

- Future growth within Riverside County (pursuant to any of the build out scenarios, including the with-project GPU/GPA960 scenario) will trigger roadway improvements and new road construction that will have short-term, non-substantial cumulative impacts on portions of the roadway network and the travelers that use it. Section 4.18.5 notes that since GPA No. 960 includes adequate policies to ensure construction-related-impacts are reduced, "traffic circulation [will be] maintained and impacts... maintained at less-than-significant levels." Use of the Riverside County Transportation Improvement Plan (TIP), in particular, to establish and prioritize the timing and construction of Riverside County roadway projects will ensure such cumulative impacts are less than significant.

- Where incremental traffic increases cause roadway segments to operate below applicable standards, the resultant congestion could indirectly affect the safety and well-being of residents and visitors to Riverside County by delaying response times for emergency services, such as ambulances, fire trucks and law enforcement. Similarly, delays to trucks and other goods movement could slow delivery schedules and increase the cost of shipping through greater fuel consumption. These delays, however, are not expected to be cumulatively considerable overall for GPA No. 960.

- Similarly, increased traffic congestion, reduced operating levels and construction impacts would also incrementally contribute to inadequate emergency access at times for any of the build out scenarios. Such incremental increases will be non-substantial and not cumulatively significant however, as GPA No. 960 incorporates policies to ensure adequate emergency vehicle access according to Impact 4.18.H in Section 4.18.5.

- Where incremental traffic increases cause roadway segments to operate below applicable standards, the resultant congestion could result in delays to mass transit services (namely, buses), which would delay commuters' transit times and possibly cause fare increases to cover increased fuel costs (if passed on to customers). These delays, however, are not expected to be cumulatively considerable overall for GPA No. 960.

- Future growth within Riverside County as a result of any of the build out scenarios, including the with-project GPU/GPA960 scenario, will incrementally increase the demand for and use of public transit, bikeways and pedestrian facilities. These increases will not be cumulatively considerable, however,

because, as pointed out in Impact 4.18.I in Section 4.18.5, GPA No. 960 incorporates policies to ensure adequate transit, bicycle and pedestrian facilities. These policies will also ensure that the performance and safety of such facilities are likewise maintained. Therefore this cumulative impact is considered less than significant.

d. Mitigation

In general, the revisions to the Riverside County roadway network are designed specifically to alleviate unacceptable operating levels. Thus, the principle form of "mitigation" for many of the roadway traffic impacts discussed above and in Section 4.18 is to construct new roads and improve existing roads to achieve the build out conditions (i.e., number of lanes, signals, locations, etc.) shown in the General Plan Circulation Element network maps, as proposed pursuant to the project, GPA No. 960. However, in addition, as described in Section 4.18.5, a variety of other measures would be implemented to avoid, reduce and minimize adverse cumulative traffic, transportation and circulation impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Programs: See Section 4.18.3 for details on each regulation.

- State Transportation Improvement Program (STIP)
- California Complete Streets Act - AB 1358 (2008)
- California Global Warming Solutions Act - AB 32 (2006d)
- California Sustainable Communities and Climate Protection Act - SB 375 (2008)
- SCAG 2012 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS)
- RCTC Riverside County Congestion Management Program (CMP)
- Riverside County CETAP (Community and Environmental Transportation Acceptability Process)
- County Ordinance No. 413 - Regulating Parking on County Roadways
- County Ordinance No. 452 - Regulating Speed Limits on County Roadways
- County Ordinance No. 460 - Subdivision of Land
- County Ordinance No. 461 - Roadway Improvement Standards and Specifications
- County Ordinance No. 499 - Encroachment on County Roadways
- County Ordinance No. 659 - Development Impact Fee [DIF] for Residential Projects
- County Ordinance No. 671 - Establishing Consolidated Fee Program for Land Use

- County Ordinance No. 673 - Establishing a Transportation Uniform Mitigation Fee [TUMF] Program for the Coachella Valley
- County Ordinance No. 748 - Mitigating Traffic Congestion Through Signalization
- County Ordinance No. 824 - Establishing a Transportation Uniform Mitigation Fee [TUMF] Program for Western Riverside County
- County Ordinance No. 859 - Establishing Water-Efficient Landscape Requirements

Key General Plan Policies: See Section 4.18.2 for the text of each policy.

- Circulation Element Policies: C 1.2, 1.3, 1.7, 1.8, 2.1-2.7, 3.1-3.4, 3.6-3.8, 3.14- 3.17, 3.23, 3.24, 4.1-4.3, 4.6-4.9, 6.3, 6.5, 6.6, 7.1-7.4, 7.7, 7.8, 8.3, 8.4, 8.7, 8.8, 9.1, 9.2, 11.1, 11.6, 12.2, 13.1, 13.3-13.5, 13.7, 14.1, 14.2, 15.1-15.6, 16.1-16.8, 17.1, 17.3, 17.4, 18.1-18.3, 20.1, 20.3-20.16, 21.1-21.7, 23.4-23.9, 25.1 and 25.2
- Land Use Element Policies: LU 14.6

(2) CEQA Mitigation

The following CEQA mitigation measures (MMs) were adopted as part of certification of EIR No. 441 for the RCIP General Plan in October 2003 and remain applicable to GPA No. 960 and future General Plan implementing projects:

Existing Mitigation Measures: In EIR No. 441, a number of mitigation measures were imposed to reduce impacts from existing and future traffic increases. According to Section 4.18.5, these measures remain applicable to this project and would also apply to future development.

- **Existing MM 4.16.1A:** As part of its review of land development proposals, the County [of Riverside] shall require project proponents to make a "fair share" contribution to required intersection and/or roadway improvements. The required intersection and/or roadway improvements shall be based on maintaining the appropriate level of service (LOS D within Community Development Areas designated by the 2002 Riverside County General Plan and within adjacent jurisdictions; LOS C within those portions of unincorporated Riverside County outside of Community Development Areas). The fair share contribution shall be based on the percentage of project-related traffic to the total future traffic.
- **Existing MM 4.16.1B:** As part of its review of land development proposals, the County [of Riverside] shall ensure sufficient right-of-way is reserved on critical roadways and at critical intersections to implement the approach lane geometrics necessary to provide the appropriate levels of services.

New Mitigation Measures: Section 4.18 proposes the following new mitigation measures to help minimize the effect of growth on existing and future roadways. Compliance with these measures would help mitigate significant transportation and circulation impacts.

- **New MM 4.18.1A-N1:** As part of its review of land development proposals, the County of Riverside shall require project proponents to make a "fair share" contribution to required intersection and/or roadway improvements. The required intersection and/or roadway improvements shall be based on maintaining the appropriate level of service (LOS D or better). The fair share contribution shall be based on the percentage of project-related traffic to the total future traffic.

- **New MM 4.18.1B-N1:** As part of its review of land development proposals, the County of Riverside shall ensure sufficient right-of-way is reserved on critical roadways and at critical intersections to implement the approach lane geometrics necessary to provide the appropriate levels of services.

- **New MM 4.18.1C-N1:** Where needed and where appropriate, the County of Riverside shall seek ways and means to increase the capacity of Circulation Element roadways by such measures as adding through-travel lanes or additional turning lanes without increasing the right-of-way width requirement for the classification of the facility.

- **New MM 4.18.1D-N1:** Where needed and where appropriate, the County of Riverside shall collaborate with the California Department of Transportation (Caltrans) and other appropriate agencies to add auxiliary and mainline lanes on the freeway system within available rights-of-way.

- **New MM 4.18.1E-N1:** The County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop direct connections between the HOV/HOT lanes at the following freeway interchanges: I-15 at SR-91, SR-60 at SR-91/I-215 West junction, SR-60 at I-215 East junction, and at other locations as needed. To the extent that such improvements may be possible within existing rights-of-way, environmental impacts would be less than significant.

- **New MM 4.18.1F-N1:** Where appropriate the County of Riverside shall collaborate with Caltrans and other appropriate agencies to develop HOV lanes along the entire length of I-215 within Riverside County and along I-10 between the San Bernardino County line and Indio.

e. Significance

The Circulation Element policies provide a framework for development and implementation of the multi-modal transportation system envisioned by the General Plan, as proposed by the project, GPA No. 960. However, even with the identified policies, numerous faculties will operate at unacceptable levels of service. As outlined above, future development accommodated by any of the General Plan build out scenarios, including that with the project (GPA No. 960), would result in cumulatively considerable increases in traffic levels with related decreases in roadway segments operating at acceptable standards at various locations throughout Riverside County based on both existing and projected traffic volumes and roadway configurations.

As a result, some roadways within Riverside County would also conflict with applicable congestion management plan standards or policies, such as level of service standards and travel demand measures. Implementation of the various regulatory programs and mitigation measures listed above would help reduce the above cumulative impacts, but according to Section 4.18.5, would not be fully sufficient to ensure that all cumulative impacts are reduced to less-than-significant levels. The changes proposed under GPA No. 960 (and included in the GPU/GP960 scenario) serve to reduce the predicted traffic generated and raise the LOS improvement trigger ranges, resulting in a forecast of lower traffic impacts when compared to the existing General Plan (i.e., CURR GP scenario). When compared against the existing environmental conditions (the EXIST scenario), however, the project will still result in cumulatively considerable traffic impacts as a result of General Plan implementation.

For the impacts listed as not considerable, implementation of the regulatory programs, policies and mitigation measures listed above would be sufficient to ensure that incremental impacts are not cumulatively significant. This includes incremental airport, water and rail impacts, road hazards, emergency access deficiencies and effects to non-motorized travel, such as mass transit, bikeways and pedestrian trails.

18. Cumulative Effects on Water Resources

Section 4.19 (Water Resources) discusses existing water resources, including hydrology, groundwater, imported water and infrastructure for both water and sewer. It analyzes demand on existing water supplies, as well as the need for additional supplies to serve future development accommodated by the changes proposed by the project, GPA No. 960, as well as the mitigation (both through regulatory compliance and EIR mitigation) necessary to ensure individual project impacts are less than significant or at least reduced where feasible. As a result, areas already covered in Section 4.19 are not repeated here; see Section 4.19 directly for additional resource details.

As part of its data and analysis, Section 4.19 provides a number of related figures and tables, including: maps of the water districts, watersheds and hydrological regions of Riverside County (Figures 4.19.1 through 4.19.5), areas covered by MS4 permits (Figures 4.19.6 through 4.19.8), master drainage plans (Figure 4.19.9) and groundwater basins (Figure 4.19.14), information and diagrams related to imported water supplies (Figures 4.19.10 through 4.19.13, plus Figure 4.19.25), county water supplies (Figures 4.19.15 through 4.19.17) and wastewater/sewer providers (Figure 4.19.32), as well as service area boundary maps for the water districts serving Riverside County (Figures 4.19.18 through 4.19.24 and Figures 4.19.26 through 4.19.31).

The numerous tables in Section 4.19 include: Table 4.19-A (Summary of Water and Sewer Providers), Tables 4.19-B through 4.19-D on water quality issues, Table 4.19-E (County Master Drainage Plans and Area Drainage Plans), Tables 4.19-F through 4.19-J and 4.19-AT on imported water issues, Table 4.19-K (Adjudicated Waters), Table 4.19-L (Groundwater Basins), Tables 4.19-M and 4.19-N on well data and Tables 4.19-O through 4.19-AA on a variety of data on Metropolitan Water District (MWD), as well as other water districts serving Riverside County: Tables 4.19-AB through 4.19.AD on Eastern Municipal Water District (WD), Tables 4.19-AE through 4.19-AG on Western Municipal WD, Tables 4.19-AH through 4.19-AJ on San Bernardino Valley Municipal WD, Tables 4.19-AK through 4.19-AM on Jurupa Community Services District, Tables 4.19-AN through 4.19-AP on Rubidoux Community Services District, Tables 4.19-AQ through 4.19-AW on Coachella Valley Water District, Tables 4.19-AX through 4.19-AZ on Desert Water Agency, Tables 4.19-BA through 4.19-BB on San Gorgonio Pass Water Agency, Tables 4.19-BC through 4.19-BE on San Jacinto Mountain Area, Table 4.19-BF (Groundwater Basins Underlying Non-Served Areas), Table 4.19-BG (Sewer and Wastewater Treatment Providers) and Table 4.19-BH (Wastewater Treatment Facilities). In addition, Tables 4.19-BI through 4.19-BN address various calculations and comparisons for theoretical water supplies and wastewater generation for the project and other scenarios. Lastly, Tables 4.19-BO through 4.19-BQ address spatial effects to hydrology, groundwater basins and master drainage plans within Riverside County.

a. Existing Conditions

Historically, water supply issues have been of critical import to California, in general, and interior counties like Riverside County, in particular. Factors, such as hydrology, distribution system capacities, competing demands and regulatory constraints, all present enormous challenges. Capturing and storing water in above-normal years for use in below-normal years remains critical to water supply sufficiency, as does ensuring adequate infrastructure, storage and conveyance facilities.

As set forth in Sections 4.19.3 and 4.19.4, the State of California (via the State Water Project), as well as wholesale and retail water agencies throughout Riverside County, maintain and carefully manage diversified water supply portfolios of imported supplies, local surface water supplies, groundwater, recycled water, desalinated supplies, etc. As detailed in Section 4.19.4, the water demands associated with Riverside County (regardless of the General Plan build out scenario proposed) are ultimately part of demands that are forecast and accounted for by the relevant wholesale and retail agencies. As EIR No. 521 is a programmatic document covering a number of countywide issues, and not does not propose or implement any specific development, only a "first tier" water

supply analysis is presented in Section 4.19. Future development will still be required to prepare/obtain any water supply analyses required by law when specific proposals are made.

Hydrology: For planning, analytical and other specified purposes, the California Department of Water Resources (DWR) organizes the state into ten major surface water drainage regions, two of which (the South Coast Region and the Colorado River Region) include portions of Riverside County. Detailed information and analyses have been prepared for these regions by DWR and that information is updated on an ongoing basis as part of the California Water Plan update process. Generally, the western one-third of Riverside County lies within the South Coast Region, west of the San Jacinto Mountains, and the eastern two-thirds of Riverside County lie within the Colorado River Region. Designated watershed areas are included within each region, several of which partially lie within Riverside County. Figure 4.19.3 shows the major watersheds as they fall within Riverside County. Additional information about the conditions existing in these watersheds is provided in Section 4.19.2.

Topographically, most of the South Coast Region is composed of several large, undulating coastal and interior plains. The coastal and interior valleys of the South Coast Hydrologic Region feature Mediterranean climates characterized by mild, wet winters and warm, dry summers. Roughly 40% of the South Coast Region is developed with urban or suburban uses. Although agricultural land uses remain important in the region, such uses are increasingly giving way to urbanization. Of the total water supply to the region, more than half is used by native vegetation, evaporates to the atmosphere, is used for agricultural crops and managed wetlands, or flows to other states, the Pacific Ocean and salt sinks, like saline groundwater aquifers. The remaining portion, identified as consumptive use of applied water, is distributed among urban and agricultural uses, or diverted to managed wetlands. Figure 4.19.4 shows the South Coast Hydrologic Region.

The major water course in the American Southwest, the Colorado River spans six states and stretches into Mexico. It is controlled by a number of dams along its length, including Parker Dam, which is the origin point for the Colorado River Aqueduct, which runs west and south to its terminus at Lake Mathews in western Riverside County. Once water enters the lower Colorado River mainstream, its use is subject to the "Law of the River," a collection of laws, regulations and agreements that dictate how and where Colorado River water is distributed (see Appendix EIR-8 for more information). The Colorado River also forms the eastern-most boundary of the County of Riverside. Within the county, the Colorado River basin extends from the eastern slopes of the San Bernardino and San Jacinto Mountains east to the state border. California's largest inland body of water, the Salton Sea, lies within this region. Figure 4.19.5 shows the Colorado River Hydrologic Region.

Water Quality: Water quality is an ongoing core issue for nearly all the watersheds and groundwater basins in Riverside County. Non-point source pollution control, salinity management and emerging contaminants are all key water quality issues. In urban areas, population and economic growth not only affect water demand, but add contamination challenges from increases in wastewater and industrial discharges and urban runoff. In rural areas, failing septic systems, agricultural chemical usage and livestock operations contribute to local surface water sediment and contamination from disturbed areas. In the South Coast Region, surface and groundwater salinity (i.e., total dissolved solids, TDS) are an ongoing challenges, particularly as reclaimed water and groundwater recharge become increasingly important for urban water supplies. Groundwater contamination from industrial uses and other sites (such as the infamous Stringfellow Acid Pits) in the form of volatile organic compounds (VOCs) and heavy metals, in particular, is another water quality concern in the region. In the Colorado River Region, the highest priority water quality issues include: the need for surface water quality monitoring, the quality of imported water, the need for onsite treatment systems, high nitrate levels, leaking underground storage tanks and impacts from animal feed lots and dairy operations. The Salton Sea remains a particular challenge for the region due to its extremely high TDS concentration (about 40% saltier than ocean water).

Statewide (Imported) Water Supplies: Like more than two-thirds of California's residents, much of the drinking water used by Riverside County residents is supplied by the State Water Project (SWP), which delivers water originating from the San Francisco-San Joaquin Bay-Delta (the Delta) and is operated by the California DWR. See Figure 4.19.10. The SWP's water supply capability depends on rainfall, snowpack, runoff, reservoir storage, pumping capacity from the Delta and legal environmental constraints on project operations. Its water supply comes primarily from storage at Lake Oroville (fed from the Sierra Nevada Mountains) and high runoff flows in the Delta, with water deliveries that have ranged from 1.4 million acre-feet (AF) in dry years to roughly 3.7 million AF in wet years.

On an annual basis, the DWR establishes SWP water allocations to State Water Contractors (SWCs) according to a variety of factors, including watershed status (i.e., the amount of rain and snow water expected), environmental needs, contractual water rights and other factors which are discussed in detail in Section 4.19.3. The end result is the release of a delivery reliability report that forecasts SWP water yields. It is important to note that even with water contracts outlining how much water a SWC is "entitled" to each year, these "entitlements" only quantify the *maximum* SWP water each contractor can expect. They do not guarantee water delivery. This variability and year-to-year uncertainty lies at the heart of many of Southern California's ongoing water supply issues. Tables 4.19-G and 4.19-H in Section 4.19.3 outline the contractual water delivery amounts associated with the State Water Contractors that serve Riverside County. Table 4.19-J details regional water balance data and Section 4.19.3.D details factors affecting water delivery reliability according to the 2011 State Water Plan Final Delivery Reliability Report. Issues affecting reliability include water availability at the source (including droughts), water rights and priorities, regulatory restrictions on SWP Delta exports (delta smelt protections, adaptive management needs, etc.), climate change effects and infrastructure limitations (levee failures, etc.).

Water imported from the Colorado River is regulated pursuant to a complicated mixture of statutes, contracts and regulations that date back over 100 years. Chief among these is the 2003 Quantification Settlement Agreement (QSA) executed by Imperial Irrigation District (IID), CVWD and MWD. The QSA establishes the baseline Colorado River water use for each of the agencies and facilitates the transfer of water from agricultural agencies to urban uses.

Local Water Supplies: While imported water makes up a large portion of the region's supply of drinking water, local sources are an important part of the overall water resources for Riverside County. The chief source of local water supplies is groundwater, which is discussed in detail in Section 4.17.4.B for groundwater basins in Riverside County. Other local sources of water include surface water (rivers, streams, etc.) and recycled water (such as that reclaimed from wastewater treatment plants, among others), as well as desalination, graywater and other less-prominent sources.

Section 4.17.4 also includes detailed descriptions of the water supplies, services and resources associated with each of the water agencies that serve Riverside County. A particular emphasis is given to the Metropolitan Water District of Southern California (MWD), since it is the major water importer and wholesale supplier serving most of Southern California, including most of western Riverside County. Following MWD, descriptions are provided for the other large wholesale water agencies serving Riverside County, first for western Riverside County and then for eastern. Accompanying these are brief descriptions of the individual retail water providers that rely on these wholesalers. Details on the wholesale water districts include topics such as each district's water supply sources (imported, groundwater, recycled, etc.), amounts, reliability, infrastructure and contingency plans. Forecasts for water supply and demand (typically from 2010 to 2035 as per Urban Water Management Plan requirements) and various water-year budgets (average year, single dry year, multiple dry years) are also included. Lastly, the sufficiency of planned supplies are summarized. For agencies that have (retail) subagencies and/or provide wastewater (sewer) treatment services, these are also briefly detailed. Areas that lie outside of the service areas of

existing water agencies are also detailed in Subsection 4.19.4.I according to the underlying groundwater basin that would by necessity would be used.

Wastewater and Sewer: As noted above, a number of water districts also provide sanitary sewer and wastewater treatment services. For the rest of Riverside County, individual properties rely on individual septic systems for sewage disposal where sanitary sewer connections to a wastewater treatment provider are not available. Wastewater, sewer and septic system issues are discussed in detail in Section 4.19.4.J.

b. Future Conditions

Over time, ongoing growth will increase the amount of people, property, structures and new uses in Riverside County, which will generate additional demand for water supplies, sewer disposal and wastewater treatment. New development, particularly in previously undeveloped, vacant areas, such as wildlands and fringe areas, will also affect existing hydrology and require additional water services, such as treatment, pumping and conveyance facilities for potable water and wastewater, as well as storm drainage, etc. The tables below indicate the relative scope of cumulative impacts to supplies, demand and infrastructure for both water and sewer (wastewater) expected in Riverside County. Cumulative impacts to other water resources issues, such as water quality and hydrology, are addressed qualitatively in the subsequent *sub*section.

Table 5.5-AE (Cumulative Effect on Theoretical Potable Water Demand) provides a summary of demand for potable water within the County according to theoretical estimates associated with existing land uses, as well as for each of the General Plan build out scenarios listed. Table 5.5-AG (Cumulative Effect on *Water District Service Areas* ~~Theoretical water Supply and Suppliers~~) examines theoretical water supply needs according to major water district. Table 5.5-AF (Cumulative Effect on Theoretical Wastewater Treatment Demand) summarizes theoretical demand for wastewater treatment facilities (as indicated by wastewater generation). *Lastly, Table 5.5-AH (Cumulative Effect on Groundwater Basins) shows development effects on the various groundwater basins underlying Riverside County. To ensure* ~~For ensuring~~ worst-case effects are shown, the calculations assume 100% of the wastewater generated is collected by sanitary sewer systems and processed at wastewater treatment facilities. In reality, a certain amount of the wastewater generated would be disposed of via onsite waste treatment systems (particularly individual septic systems). For water demand, all values are assumed to be for potable water; no use of recycled, reclaimed or graywater, which would reduce demand, is assumed. Also, no SBX-7x7 (Water Conservation Act of 2009) required water conservation reductions were included in any of these calculations, even though in reality reductions of up to 20% by 2020 are to be pursued per this law. These assumptions ensure the scenarios model "worst case" conditions.

As shown in tables below, build out of each of the various General Plan scenarios shown will contribute incrementally to utilization of existing water and sewer infrastructure, as well as increase demand for water from both local and imported sources. In addition to introducing additional demand for water and sewer, future development will alter existing hydrology, increase urban runoff while decreasing groundwater recharge and affect water quality.

Table 5.5-AE: Cumulative Effect on Theoretical Potable Water Demand

WATER DEMAND[1] *(in acre-feet per year)*	Existing[2] Conditions	%	General Plan Build Out Scenarios					
			CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	*193,200*	*78%*	*354,900*	*63%*	*356,200*	*64%*	*366,800*	*62%*
Residential, Rural/Agriculture	*4,900*	*2%*	*76,700*	*13%*	*72,100*	*13%*	*74,300*	*13%*
Residential, Interface/Wildand	*10,800*	*4%*	*93,800*	*17%*	*86,800*	*16%*	*87,400*	*15%*
RESIDENTIAL - subtotal	***209,000***	***84%***	***525,100***	***93%***	***515,000***	***92%***	***528,500***	***89%***

WATER DEMAND[1] (in acre-feet per year)	Existing[2] Conditions	%	General Plan Build Out Scenarios CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Commercial[4]	25,300	10%	20,800	4%	21,800	4%	41,200	7%
Industrial[4]	14,200	6%	20,600	4%	20,700	4%	21,200	4%
ECONOMIC - subtotal	***39,500***	***16%***	***41,400***	***8%***	***42,500***	***8%***	***62,400***	***11%***
Total	***248,500***		***566,500***		***557,500***		***590,900***	
ENVI Δ (Difference from EXIST)	---	---	*+318,000*	*+128%*	*+309,000*	*+124%*	*+342,400*	*+138%*
GP Δ (Difference from CURR)	---	---	---	---	*-8,900*	*-2%*	*+24,500*	*+11%*

Footnotes:
1. Based on standards from EIR No. 441: residential (1.01 AFY/du), commercial (3.50 AFY/sf) and industrial (0.97 AFY/sf). All values rounded to nearest 100 after calculations. AFY = acre-feet per year.
2. "Existing" values per theoretical baseline calculations, see Section 4.19.5 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial includes CR, CO and CT. Industrial includes HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.3.a and 20.3.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Factors from EIR No. 441, 2003.

Table 5.5-AF: Cumulative Effect on Theoretical Wastewater Treatment Demand

WASTEWATER GENERATED[1] (in million gallons/year)	Existing[2] Conditions	%	General Plan Build Out Scenarios CURR GP[3]	%	GPU/ GPA960[3]	%	CULM GP[3]	%
Residential, Urban/Suburban	16,100	58%	25,500	51%	29,600	52%	30,500	50%
Residential, Rural/Agriculture	400	1%	6,400	11%	6,000	10%	6,200	10%
Residential, Interface/Wildland	900	3%	7,800	13%	7,200	13%	7,300	12%
RESIDENTIAL - subtotal	***17,400***	***62%***	***43,600***	***75%***	***42,800***	***51%***	***43,900***	***72%***
Commercial[4]	2,100	38%	2,600	4%	2,700	5%	5,200	8%
Industrial[4]	8,000	29%	11,700	20%	11,700	20%	12,000	20%
ECONOMIC - subtotal	***10,100***	***37%***	***14,300***	***24%***	***14,400***	***25%***	***17,100***	***28%***
Total	***27,500***		***57,900***		***57,200***		***61,100***	
ENVI Δ (Difference from EXIST)	---	---	*+30,400*	*+111%*	*+27,900*	*+108%*	*+33,600*	*+122%*
GP Δ (Difference from CURR)	---	---	---	---	*-6,700*	*-13%*	*+3,200*	*+5%*

Footnotes:
1. Factors used: residential (230 gpd/du), commercial (1,200 gpd/ac) and industrial (1,500 gpd/ac). gpd = gallons per day. du = dwelling unit. ac = acre. All values rounded to nearest 100 after calculations.
2. "Existing" values per theoretical baseline calculations, see Section 4.19.5 for actual values.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. See Section 5.5.1 for descriptions of each GP scenario.
4. Commercial includes CR, CO and CT. Industrial includes HI, LI and BP. Uses too variable for factors omitted.
5. *See Tables 20.4.a and 20.4.b in Appendix EIR-11 for more detailed data used.*

Source: Riverside County Planning Dept., Project Application Data, 2013 *and 2014*. Residential factor from EIR No. 441, 2003, and Vallecitos Water District, 2008.

Table 5.5-AG: Cumulative Effect on *Water District Service Areas* ~~Theoretical Water Supply and Suppliers~~

Major Water Agency[1] (in acres ~~-feet/year~~)[2]	Urban/ Suburban	Rural/ Agriculture	Interface/ Wildlands	Public Facilities	Open Space/ Vacant	Total
Eastern Municipal Water District						
Existing[3-1]	**14,480**	**47,600**	**26,350**	**3,550**	**100,390**	**192,370**
CURR GP[4-2]	*34,010*	*49,560*	*80,200*	*5,130*	*32,370*	*201,270*
GP*U* / *GPA* 960 Δ (Change)[5-3]	+1,380	-1,370	-1,910	+510	+1,380	-10
CULM GP Δ (Change)[5-3]	*+2,270*	*+5,8890*	*-8,270*	*+40*	*+80*	*0*
Western Municipal Water District						
Existing[3-1]	**32,370**	**28,470**	**25,320**	**6,430**	***88,920***	***181,510***
CURR GP[4-2]	34,400	35,430	80,530	6,210	*31,000*	*187,570*
GP*U* / *GPA* 960 Δ (Change)[5-3]	+1,950	-2,180	+100	+100	0	-30
CULM GP Δ (Change)[5-3]	*+660*	*+190*	*-1,540*	*0*	*+690*	*0*

Major Water Agency[1] *(in acres ~~-feet/year~~)*[2]	Urban/ Suburban	Rural/ Agriculture	Interface/ Wildlands	Public Facilities	Open Space/ Vacant	Total
San Gorgonio Pass Water Agency						
Existing[3-1]	**5,690**	**4,720**	**3,990**	**2,430**	***83,280***	***100,110***
CURR GP[4-2]	2,350	8,430	50,510	0	*9,160*	*70,450*
GP*U* / *GPA* 960 Δ (Change)[5-3]	-240	+3,230	-4,070	0	+1,150	+70
CULM GP Δ (Change)[5-3]	+270	+370	-640	0	0	0
WESTERN REGION – SUBTOTAL						
Existing[3-1]	***52,540***	***80,790***	***55,660***	***12,410***	***272,590***	***473,990***
CURR GP[4-2]	*70,760*	*93,420*	*211,240*	*11,340*	*72,530*	*459,290*
GP*U* / *GPA* 960 Δ (Change)[5-3]	*+3,090*	*-320*	*-5,880*	*+610*	*+2,530*	*+30*
CULM GP Δ (Change)[5-3]	*+3,200*	*+6,440*	*-10,450*	*+40*	*+770*	*0*
CULM B/O Total	***77,050***	***99,540***	***194,910***	***11,990***	***75,830***	***459,320***
Change from EXIST	*+42,730*	*+31,380*	*+294,830*	*-1,490*	*-396,820*	*-29,370*
Coachella Valley Water District						
Existing[3-1]	**10,930**	**57,850**	**18,080**	**7,670**	***297,430***	***391,960***
CURR GP[4-2]	23,960	59,580	110,660	3,330	*185,320*	*382,850*
GP*U* / *GPA* 960 Δ (Change)[5-3]	*+180*	*+550*	*+710*	*-40*	*-680*	*+720*
CULM GP Δ (Change)[5-3]	*+3,590*	*-2,400*	*+230*	*-110*	*+330*	*+1,640*
Desert Water Agency						
Existing[3-1]	**1,700**	**700**	**1,830**	**3,020**	***127,950***	***135,200***
CURR GP[4-2]	5,520	3,740	38,740	760	*72,650*	*121,410*
GP*U* / *GPA* 960 Δ (Change)[5-3]	0	0	-150	+150	-10	-10
CULM GP Δ (Change)[5-3]	0	0	0	0	0	0
Palo Verde Irrigation District[6]						
Existing[3-1]	**1,080**	**84,670**	**410**	**1,350**	***12,640***	***100,150***
CURR GP[4-2]	1,420	96,440	3,690	10	*360*	*101,920*
GP*U* / *GPA* 960 Δ (Change)[5-3]	-20	-360	+360	+20	+650	+650
CULM GP Δ (Change)[5-3]	0	0	0	0	0	0
EASTERN REGION - SUBTOTAL						
Existing[3-1]	***13,710***	***143,220***	***20,320***	***12,040***	***438,020***	***627,310***
CURR GP[4-2]	*30,900*	*159,760*	*153,090*	*4,100*	*258,330*	*606,180*
GP*U* / *GPA* 960 Δ (Change)[5-3]	*+160*	*+190*	*+920*	*+130*	*-40*	*+1,360*
CULM GP Δ (Change)[5-3]	*+3,590*	*-2,000*	*+230*	*-110*	*+330*	*+1,640*
CULM B/O Total	***34,650***	***157,550***	***154,240***	***4,120***	***258,620***	***609,180***
Change from EXIST	*+38,130*	*+30,870*	*+266,690*	*-15,860*	*-359,090*	*-39,260*
REST (NOT IN WATER DISTRICTS) - SUBTOTAL						
Existing[3-1]	***13,040***	***141,280***	***672,820***	***7,920***	***2,082,880***	***2,917,940***
CURR GP[4-2]	*3,410*	*45,650*	*1,941,810*	*14,550*	*948,350*	*2,953,770*
GP*U* / *GPA* 960 Δ (Change)[5-3]	*-210*	*-200*	*-7,900*	*+130*	*+6,790*	*-1,390*
CULM GP Δ (Change)[5-3]	*+1,960*	*+10*	*-2,650*	*+380*	*-1,340*	*+1,640*
CULM B/O Total	***+5,160***	***+45,460***	***+1,931,260***	***+15,060***	***+953,820***	***+2,950,740***
Change from EXIST	*-17,510*	*-191,450*	*+2,527,430*	*+13,770*	*-2,263,610*	*+68,630*
GRAND TOTAL (ALL DEVELOPMENT CATEGORIES)						
Existing[3-1]	***79,290***	***365,290***	***748,800***	***32,370***	***2,793,490***	***4,019,240***
CURR GP[4-2]	*105,070*	*298,830*	*2,306,140*	*299,990*	*1,279,210*	*4, 019,240*
GP*U* / *GPA* 960 Δ (Change)[5-3]	*+3,040*	*-330*	*-12,860*	*+870*	*+9,280*	*0*
CULM GP Δ (Change)[5-3]	*+8,750*	*+4,050*	*-12,870*	*+310*	*-240*	*0*
CULM B/O Total	***116,860***	***302,550***	***2,280,410***	***31,170***	***1,288,250***	***4,019,240***
Change from EXIST	*+63,350*	*-129,200*	*+3,088,950*	*-3,580*	*-3,019,520*	*0*

Footnotes:

~~1. All calculations use the same theoretical water factors, not those of each agency to permit comparison across districts and due to the infeasibility of calculating each district individually.~~

~~2. Factors used: residential (1.01 AFY/du), commercial (3.50 AFY/sf) and industrial (0.97 AFY/sf). All values rounded to nearest 10 after calculations. AFY = acre-feet per year.~~

1. ~~3.~~ "Existing" values per theoretical baseline calculations, see Section 4.19.5 for actual values.

2. 4. CURR GP = General Plan as of end of *2009* ~~2008~~. GPU W/960 = General Plan as amended per GPA No. 960. CULM GP/GPAS = General Plan amended per list of proposed GPAs. See Section 5.5.1 for full descriptions.
3. 5. Change from current General Plan (CURR scenario).
4. 6. Only supplies non-potable irrigation water. All other districts supply potable (drinking) water only or both.
5. *See Tables 17.1 through 17.4 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (water districts); project application data, 2013 *and 2014*; water factors from EIR No. 441, 2003.

Table 5.5-AH: Cumulative Effect on Groundwater Basins

Groundwater Basin Areas Affected[1] *(in acres)*[2]	Urban/ Suburban	Rural/ Agriculture	Interface/ Wildlands	Public Facilities	Open Space/ Vacant	Total
Western Region						
Existing	**32,150**	**57,740**	**23,620**	**9,910**	**158,010**	**281,430**
CURR GP[3]	*52,220*	*57,860*	*102,360*	*7,370*	*51,250*	*271,060*
GP*U* / *GPA* 960 Δ (Change)[4]	*+750*	*-470*	*-3,480*	*+480*	*+2,740*	*+20*
CULM GP Δ (Change)[4]	*+1,160*	*+3,070*	*-4,440*	*+20*	*+190*	*0*
Coachella Valley Region						
Existing	**14,700**	**109,820**	**21,720**	**11,980**	**382,350**	**540,570**
CURR GP[3]	31,130	64,510	257,960	4,500	165,570	523,670
GP*U* / *GPA* 960 Δ (Change)[4]	+180	+580	+1,150	+110	-1,290	+730
CULM GP Δ (Change)[4]	*+5,440*	*-2,400*	*-2,360*	*+300*	*+490*	*+1,470*
URBANIZING AREAS – SUBTOTAL						
Existing	***46,850***	***167,560***	***45,340***	***21,890***	***540,360***	***822,000***
CURR GP[3]	*83,350*	*122,370*	*360,320*	*11,870*	*216,820*	*794,730*
GP*U* / *GPA* 960 Δ (Change)[4]	*+930*	*+110*	*-2,330*	*+590*	*+1,450*	*+750*
CULM GP Δ (Change)[4]	*+6,600*	*+670*	*-6,800*	*+320*	*+680*	*+1,470*
CULM B/O Total	***90,880***	***123,150***	***351,190***	***12,780***	***218,950***	***796,950***
Change from EXIST	*+44,030*	*-44,410*	*+305,850*	*-9,110*	*-321,410*	*-25,050*
Far East Region						
Existing	**3,730**	**109,010**	**236,270**	**4,110**	**991,890**	**1,341,010**
CURR GP[3]	2,630	118,420	1,024,860	8,060	195,910	1,349,880
GP*U* / *GPA* 960 Δ (Change)[4]	-230	-530	+610	+140	+620	+610
CULM GP Δ (Change)[4]	0	0	0	0	0	0
None						
Existing	**28,720**	**88,740**	**467,190**	**6,380**	**1,261,200**	**1,852,230**
CURR GP[3]	19,090	58,050	920,970	10,060	*866,460*	*1,874,630*
GP*U* / *GPA* 960 Δ (Change)[4]	+2,340	+80	-11,130	+130	*+7,220*	*-1,360*
CULM GP Δ (Change)[4]	+1,970	+3,910	-6,000	0	-1,350	-1,470
PREDOMINANTLY RURAL AREAS - SUBTOTAL						
Existing	***32,450***	***197,750***	***703,460***	***10,490***	***2,253,090***	***3,197,240***
CURR GP[3]	*21,720*	*176,470*	*1,945,830*	*18,120*	*1,062,370*	*3,224,510*
GP*U* / *GPA* 960 Δ (Change)[4]	*+2,110*	*-450*	*-10,520*	*+270*	*+7,840*	*-750*
CULM GP Δ (Change)[4]	*+1,970*	*+3,910*	*-6,000*	*0*	*-1,350*	*-1,470*
CULM B/O Total	***25,800***	***179,930***	***1,929,310***	***18,390***	***1,068,860***	***3,222,290***
Change from EXIST	*-6,650*	*-17,820*	*+1,225,850*	*+7,900*	*-1,184,230*	*+25,050*
GRAND TOTAL (ALL CATEGORIES)						
Existing	***79,300***	***365,310***	***748,800***	***32,380***	***2,793,450***	***4,019,240***
CURR GP[3]	*105,070*	*298,840*	*2,306,150*	*29,990*	*1,279,190*	*4,019,240*
GP*U* / *GPA* 960 Δ (Change)[4]	*+3,040*	*-340*	*-12,850*	*+860*	*+9,290*	*0*
CULM GP Δ (Change)[4]	*+8,570*	*4,580*	*-12,800*	*+320*	*-670*	*0*
CULM B/O Total	***116,680***	***303,080***	***2,280,500***	***31,170***	***1,287,810***	***4,019,240***
Change from EXIST[5]	*+37,380*	*-62,230*	*+1,531,700*	*-1,210*	*-1,505,640*	*0*

Footnotes:

1. Groundwater basins encompassed by the regions listed:
   Western Region (from Orange County to the San Jacinto Mountains):
   Buck Ridge Fault Valley, Cahuilla Valley, Collins Valley, Coastal Plain of Orange County, Elsinore, Hemet Lake Valley

Ocotillo-Clark Valley	San Jacinto	Temecula Valley
Terwilliger Valley	Upper Santa Ana Valley	Vanderventer Flat

Coachella Valley Region (east of the San Jacinto Mountains):

Chocolate Valley	Coachella Valley	East Salton Sea
Orocopia Valley		

Far Eastern Region (east of Coachella Valley to Arizona border at the Colorado River):

Arroyo Seco Valley	Cadiz Valley	Calzona Valley
Chuckwalla Valley	Dale Valley	Hexie Mountain Area
Joshua Tree	Lost Horse Valley	Palo Verde Mesa
Palo Verde Valley	Pinto Valley	Pleasant Valley
Quien Sabe Point Valley	Rice Valley	Vidal Valley
Ward Valley	Warren Valley	

None (areas with no groundwater basin underlying)

2. All areas in acres, reflecting development of land overlying the groundwater basins.
3. CURR GP = General Plan as of end of *2009* ~~2008~~. GPU W/960 = General Plan as amended per GPA No. 960. CULM GP/GPAS = General Plan amended per list of proposed GPAs. See Section 5.5.1 for full descriptions.
4. Change from current General Plan (CURR scenario).
5. Net totals always equal zero since all lands are 100% accounted for by the development categories shown.
6. *See Tables 16.1 through 16.4 in Appendix EIR-11 for more detailed data used.*

Source: Riverside County GIS *(RCIT)*, RCLIS layer (water districts); project application data, 2013 *and 2014*; water factors from EIR No. 441, 2003.

For potable water, Table 5.5-AE indicates existing General Plan build out will nearly double demand by roughly *318,000* ~~236,000~~ acre-feet per year. *(One acre-foot equals roughly 326,000 gallons and is commonly considered enough water to serve a suburban household for a year.)* Meeting this demand will require additional water supplies from a combination of imported (i.e., state), local (groundwater) and recycled/ reclaimed water sources. All of these supply sources are extremely limited in their capacities to provide additional water. Increased reliance on local groundwater sources would further increase the rate of basin drawdown and the cumulative effects, such as poor water quality and harm to biota, that result. Although there is room for increased utilization of recycled and reclaimed water sources, and indeed most water districts are aggressively pursuing improved efficiencies for these sources, such programs remain relatively costly using current technologies.

As a result, even though build out of the General Plan with the project added (GPU/GPA960 scenario) would incrementally *decrease* ~~increase~~ cumulative potable water demand ~~only~~ slightly *(as compared to existing General Plan build out [CURR scenario])*, the project's contribution is still cumulatively considerable on a countywide basis *when compared to baseline environmental conditions (EXIST scenario)*. The cumulative GPAs build out (CULM) scenario, with *a 4%* ~~an 11%~~ increase in demand over the existing General Plan, would *also* have *a* ~~an even greater~~ cumulatively significant impact on water supply. Thus, based on the present level of water planning and supply allocation for the state in general, and the water agencies serving Riverside County in particular, build out of any of the General Plan scenarios would cumulatively result in an "insufficient water supply" within Riverside County.

Table 5.5-AG shows a *theoretical* projection of how *additional development accommodated by the various scenarios would* ~~the~~ increase~~d~~ demand for water supplies within *each of the service areas of* ~~Riverside County might affect~~ the various major (wholesale) water suppliers located in Riverside County. *Continued urbanization and growth within western Riverside County would yield increases of 50-100% in developed uses needing potable water service within the major water districts' service areas (particularly EMWD and WMWD). Similar trends would also occur in the Coachella Valley. Though currently less developed than western county areas, the Coachella Valley increases are even more cumulatively significant due to the extremely limited water supply to the region and its extremely hot and dry desert climate. For both regions, however, impacts to available water supplies will be cumulatively significant for any of the build out scenarios analyzed.*

Of ~~In~~ particular *concern are* the *areas that fall under* ~~subtotal for~~ "Rest (Not in Water Districts)," *which are* ~~indicates that~~ areas not served by existing water agencies. *As such, development in these areas must rely upon self-produced water, typically from on-site (or local area) groundwater pumping* ~~would see large cumulative increases, roughly doubling the amount of groundwater that would be pumped by individual landowners~~, assuming such water is available and of

sufficient quality for residential use. *All three scenarios show a common trend of large losses of vacant open space areas as development spreads further in the interface fringe and wildland areas of Riverside County. Because of the remote nature of such areas and lack of public water services, this type of development pattern has a significant effect on groundwater basins. Notwithstanding recent changes in California water law, the pumping of groundwater on private property is largely unregulated and unconstrained. For this reason, groundwater demand is a classic example of the type of incremental uses that are individually inconsiderable (e.g., groundwater pumped and used by an individual household) but cumulatively significant. As a result of the incremental usage,* where *net* demand exceeds recharge rates, such levels of groundwater drawdown are not sustainable, particularly in dry years or during prolonged drought conditions. *The resultant drawdown causes significant adverse environmental impacts, both to the homeowner, who's well may go dry, and to the natural ecosystem, plants and animals that all rely on local water supplies for their survival.*

In regards to effects on local, groundwater supplies, Table 5.5-AH shows the amount of land within the various regions' basins affected by the various development categories. (Basins are grouped by region because they are too numerous to depict individually; see Appendix EIR-11 for full details and data.) In the urbanizing regions (western Riverside County and the Coachella Valley), the table shows the general trend of lands going from less intense interface/wildland uses vacant/open space uses to more intense urban/suburban uses. The mostly rural areas (far east region and areas not underlain by any groundwater basin) show a similar shift from rural to urban as well. ~~In terms of build out, the with-project (GPU/GPA960) scenario shows changes ranging mostly between 1% and 3%. The most notable exception is the 12% increase in urban/suburban land uses that would occur outside of known groundwater basins; an increase that~~ *Both the with-project (GPU) and CULM build out scenarios show the familiar trend of growth and urbanization pressures causing interface areas and wildlands to convert to more rural, suburban and urban uses. This trend is particularly evident in the Coachella Valley. As a result, both the GPU and CULM scenarios show that development footprints would increase over the watersheds and groundwater basins in the Coachella Valley. Their extent would be slightly less extensive than the current General Plan (CURR scenario) everywhere outside of the Coachella Valley. Nevertheless, for all of the groundwater basins associated with increasing development footprints, the growth associated with any of the General Plan build out scenarios* would be cumulatively considerable if imported water supplies are limited or unavailable in these areas. ~~For the cumulative GPAs (CULM) scenario, build out would yield similar trends, but with greater cumulative contributions. Unmitigated impacts would be cumulatively considerable as well.~~

Lastly, Table 5.5-AF shows that the cumulative effects of increased generation of wastewater (sewage) would have a similar pattern of impact on wastewater treatment plants. Under the existing General Plan (CURR scenario), demand would increase *111%* ~~roughly 60%~~, a cumulatively significant increase. The with-project (GPU/GPA960) scenario would *slightly* incrementally *decrease* ~~increase~~ this demand ~~by roughly 3%~~ and the CULM scenario would increase it by roughly *5%* ~~11%~~. Unlike water supplies, which are extremely limited, there *are* no restraints *(other than economic)* to the ability to increase wastewater treatment capacity. Careful planning and implementation by the responsible agencies would be sufficient to ensure the timely provision of needed wastewater treatment capacity through expansion of existing or construction of new facilities. Thus, the incremental increases associated with the GPU and CULM scenarios would not be cumulatively substantial if managed appropriately.

c. Impacts

Future development will contribute incrementally to cumulative impacts on water resources as the county builds out over time pursuant to the County General Plan (regardless of scenario). Specific impacts of the severities indicated will include the following:

(1) Cumulatively Considerable Impacts

- Future development (pursuant to any of the build out scenarios discussed, including the with-project scenario) will incrementally increase demand for water supplies in areas where such supplies are insufficient or unavailable to serve the project from existing entitlements and resources. This will necessitate new or expanded water supplies (entitlements) in order to adequately serve future development. In some areas, the adequacy of water supplies is already known to be insufficient or supplies are already utilized at their maximum sustainable level. In both cases, water supplies would be insufficient to meet incremental increases in demand using existing technologies.

- Due to the variability and unpredictability of water supplies from year to year, in some cases, the adequacy of future water supplies cannot be ascertained at this time at the programmatic level of this EIR. Thus, in light of future growth, as well as environmental and regulatory constraints, adequate water supplies for all forecast future development cannot be assured. As a result, in areas of Riverside County where sufficient water supply is not available or cannot be assured into the future, cumulative impacts would be significant and unavoidable.

- Unavailability or unpredictability of imported water supplies, overdraft of groundwater basins, increasing demand due to growth in Riverside County, as well as environmental factors, such as climate change effects and drought, all play roles in limiting the availability of water within Riverside County. In some remote locations, particularly in the far eastern desert beyond the Coachella Valley and the region south of the San Jacinto Mountains between Anza and Coachella Valley, lack of groundwater and lack of delivery infrastructure also are limiting factors. For all of these reasons, the cumulative effects on water supply would be significant and unavoidable at this time.

- In attempting to meet the increased demand for water outlined above, future development from any General Plan build out scenario would incrementally increase use of local groundwater supplies, both by water districts and individual landowners through private pumps. This is particularly likely in areas of Riverside County without municipal water service or other access to imported water supplies or where new development would rely solely on groundwater for supply. Increased development will incrementally increase the impermeable surfaces in Riverside County, interfering with groundwater recharge. Where increased groundwater pumping exceeds the rate of basin recharge, it would cumulatively result in the substantial depletion of groundwater in Riverside County.

- Incremental increases in the use of groundwater may also conflict with groundwater management plans, monitoring programs or lead to groundwater extractions that individually or cumulatively exceed the groundwater basins' safe yields or cause a net deficit in the aquifer volume or reduction in the local water table level.

- In the search for new water supplies, groundwater of marginal quality, high in salts or organic compounds, may be extracted and treated to meet drinking water standards and distributed for domestic and municipal uses. This action risks the overuse and overdraft of groundwater in basins with little history of extensive extraction. Increasing demands and costs, as well as unpredictability in the availability of imported water, would make it more attractive for water suppliers to exploit the local groundwater supplies, including at times those of marginal water quality. Where groundwater is extracted at a faster rate than it is replenished, problems associated with overdraft and lowering groundwater tables would occur or continue.

- A number of factors will result in or contribute incrementally to substantially decreasing groundwater supplies: increased demand for water associated with the growth envisioned by the General Plan, supply and cost unpredictability, variability in long-term supply scenarios in non-adjudicated basins, exploitation of new groundwater sources and the continuing pattern of basin overdraft.

- In addition, an assessment of future water supply adequacy beyond the year 2035 (including groundwater) is speculative. Since at present roughly one-third of Riverside County's water demand is met by groundwater, this unpredictability and variability mean that significant cumulative impacts associated with build out over the next 50-plus years cannot be ruled out.

- Future development per build out of any of the General Plan scenarios would incrementally increase water erosion, sedimentation and siltation of surface water. These include short-term construction impacts, as well as long-term operational impacts. Future development will also incrementally damage or change hydrologic baseline conditions throughout Riverside County over time. Compliance with existing laws, General Plan policies and existing EIR No. 441 mitigation measures, would ensure that such impacts are cumulatively less than significant in areas in which development occurs pursuant to a Master Drainage Plan or per a drainage plan required as part of tract or parcel development. However, where such plans do not exist or are not required, for example, for individual homes in wildlands and on expanding urban fringes, new development could contribute incrementally to cumulatively considerable hydrological impacts.

- Increased development resulting from General Plan implementation would also incrementally reduce the distribution and extent of permeable surfaces suitable for recharge. It may also increase runoff and subsequent flow in streams, and increase the amount of non-point source pollutants that enter watercourses and recharge areas. Development activities may also result in the incremental alteration or elimination of features essential to local or regional hydrologic systems, or the interruption of hydrologic processes leading to cumulatively considerable impacts.

- Build out of any of the General Plan scenarios would result in the incremental development of vacant lands within Riverside County. The addition of impervious surfaces from such development would incrementally increase stormwater runoff within the affected watersheds. In some areas, existing drainage facilities may not be adequate to accommodate the increase, leading to cumulatively significant impacts to existing stormwater drainage facilities or triggering the need for new facilities.

- New land uses would incrementally increase the amount of stormwater runoff due to the increase in impermeable surfaces. This would also increase the amount of pollutants conveyed to groundwater basins and surface waters in creeks and rivers. The extensive stormwater management measures required by the County of Riverside would reduce urban runoff impacts from new development. However, where existing storm drainage facilities are inadequate or, in particular, where no regional stormdrain infrastructure exists (e.g., in wildland and fringe areas), incremental increases in runoff would result in cumulatively significant impacts.

(2) Non-Substantial Incremental Impacts

- Future development per build out of any of the General Plan scenarios will incrementally increase water demands, thus increasing reliance on lower-quality water either from the Colorado River or marginal groundwater sources. It would also contribute to increased levels of pollutants in local/regional groundwater reserves and local/regional surface waters. These conditions would contribute incrementally to the deterioration of drinking water quality in Riverside County. However, as all potable

water must meet the state's minimum standards of purity for water quality, adherence to such standards would ensure that cumulative impacts are not significant.

- Future development will incrementally increase Riverside County's population, increasing the amount of wastewater generated, increasing the need for effluent disposal. When discharged into a stream or other surface water, effluents can degrade water quality. Additionally, stormwater runoff from urban areas contains a variety of organic and inorganic substances that would also reduce the quality of groundwater when introduced into their aquifers. Adherence to strict state water quality standards would ensure such impacts are not cumulatively considerable.

- Future development will result in incremental changes to existing hydrology, increased impervious surfaces and increased urban runoff. Such changes would increase the discharge of pollutants into receiving waters, if not properly managed and controlled. Compliance with the state's extensive water quality regulations, including MS4 permits (for municipal separate storm sewer systems) and the NPDES program of the federal Clean Water Act, would ensure that no significant violations of water quality standards or waste discharge requirements occur individually or cumulatively.

- Future development pursuant to any of the General Plan build out scenarios will incrementally increase the amount of wastewater (sewage) generated in Riverside County. All such wastewater must be disposed of pursuant to a variety of state and federal water quality laws (see list below). Accordingly, compliance with extensive regulations would ensure that future development does not individually or cumulatively exceed any wastewater treatment requirements. Similar compliance requirements that strictly regulate the construction and maintenance of septic tanks will ensure that incremental increases in use of septic systems do not result in cumulative exceedance of wastewater treatment requirements.

- Future development will incrementally increase wastewater generation, increasing the need for its treatment and potentially exceeding the capacities of existing treatment facilities, necessitating the construction of additional facilities. In addition, where sanitary sewer connection and treatment are not available, septic systems would be necessary. The proliferation of septic systems in rural communities may potentially contaminate groundwater with nitrates, ammonia, salts, metals, organic solvents, grease and oil, and other substances, impairing the beneficial uses of local water supplies. However, compliance with existing laws, regulatory programs, ordinances, General Plan policies and existing mitigation measures from EIR No. 441 would be sufficient to ensure that cumulative impacts associated with wastewater treatment capacities are less than significant.

- Future development would incrementally increase demand for water supply, wastewater treatment and infrastructure to supply these services. These increases would contribute incrementally to the need for new or expanded water and wastewater treatment facilities. Since future development would be implemented on a case-by-case basis across many individual sites spread across Riverside County over roughly 50 years, however, it would not result in significant impacts tied to specific, inalterable areas. Rather, the future locations of such facilities can be established (located) so as to minimize potential environmental effects. Thus, cumulative impacts due to the need for new or expanded water and wastewater facilities would not be significant.

- Future growth per any of the General Plan build out scenarios would result in the development of vacant lands and infill of existing land uses within Riverside County. This would introduce additional impervious surfaces, incrementally increasing stormwater runoff throughout Riverside County. Existing drainage facilities may not be adequate to accommodate future increases in stormwater runoff. As a result, additional storm drain capacity and facilities will be necessary. It is feasible, however, for such

future facilities to be planned, sited and constructed in a manner that minimizes potential environmental effects. Thus, these impacts would not be cumulatively significant.

d. Mitigation

As described in detail in Section 4.19.5, a variety of measures would be implemented to avoid, reduce and minimize adverse cumulative water resource impacts. These include the following:

(1) Regulatory Compliance

Key Regulations and Program: See Section 4.19.6 for details on each regulation.

- Federal Water Pollution Control Act of 1972 (aka the Clean Water Act)
- Federal Safe Drinking Water Act
- CWA Section 402 - National Pollutant Discharge Elimination System (NPDES)
- California Porter-Cologne Water Quality Control Act of 1970
- California Safe Drinking Water Act
- CCR Title 22 - Recycled Water
- Water Conservation Act - SBX 7-7
- Senate Bill 610 – re Water Supply Assessment Requirements
- Senate Bill 221 – re Water Supplies for Subdivisions
- Ordinance No. 427 - Regulating the Land Application of Manure
- Ordinance No. 457 - Building Codes and Fees
- Ordinance No. 458 - Regulating Flood Hazard Areas and Implementing the National Flood Insurance Program
- Ordinance No. 461 - Road Improvement Standards
- Ordinance No. 592 - Regulating Sewer Use, Sewer Construction and Industrial Wastewater Discharges in County Service Areas
- Ordinance No. 617 - Hazardous Substances and Underground Storage Tanks
- Ordinance No. 629 - Prohibiting Bathing, Swimming, Boating or Entering Irrigation Canals, Ditches or Drains in Unincorporated Areas of Palo Verde Valley
- Ordinance No. 650 - Sewer Discharge in Unincorporated Territory

- Ordinance No. 659 - Development Mitigation Fee for Residential Development (DIF)
- Ordinance No. 682 - Construction, Reconstruction, Abandonment and Destruction of Wells
- Ordinance No. 754 - Stormwater/Urban Runoff Management and Discharge Controls
- Ordinance No. 830 - Regulating the Land Application of Class A Sewage Sludge for Agricultural Activities
- Ordinance No. 843 - Regulating the Discharge of Wastes into the Public Sewer System for the Highgrove Community
- Ordinance No. 856 - Establishing a Septic Tank Prohibition for Specified Areas of Quail Valley and Requiring the Connection of Existing Septic Systems to Sewer
- Ordinance No. 859 - Water-Efficient Landscape Requirements
- Ordinance No. 871 - Prohibiting the Installation of Specified Septic Tank Systems in Cherry Valley

Program Funding: The County of Riverside and cities collect taxes, fees and other revenue that is used to fund MS4 permit compliance program activities, as well as other water quality protection programs. These include assessment areas, such as the Whitewater River Watershed Benefit Assessment Area, which were established as funding sources for MS4 permit (and individual NPDES) compliance. For Whitewater, assessments are calculated on the basis of proportional stormwater runoff and are enrolled on the property tax bills generated by the County Tax Assessor's office. Some County Service Areas (CSAs), for example CSA 152, also collect funds similarly or use general ("ad valorem") tax revenues to finance stormwater management programs.

Key General Plan Policies: Although the General Plan does not include a Public Services or Utilities Element, it does include a number of policies that address water resources and related facilities. These policies help ensure that cumulative environmental effects are avoided, reduced or minimized through their application on a case-by-case basis. The County of Riverside has existing programs in place that ensure applicable policies are imposed once a development proposal triggers a specific policy or policies. The need for specific policies is determined through subsequent site-specific CEQA analysis performed at the time of implementing project review. These measures are implemented, enforced and verified through their inclusion into project conditions of approval. See Section 4.19.3.c for full text of each policy.

- Land Use Element Policies: LU 5.3, 9.1, 9.2-9.4, 21.2, 22.2, 28.3, 29.7, 30.7, 31.4 and 32.6
- Open Space Element Policies: OS 1.1, 1.3, 1.4, 2.1-2.5, 3.1-3.7, 4.1-4.6, 4.8, 6.1, 6.3 and 18.1-18.6

(2) CEQA Mitigation

Existing Mitigation Measures: These specific mitigation measures from EIR No. 441 address the various water resource and related impacts directly to reduce, avoid or minimize the applicable impacts and will also apply to future development:

- **Existing MM 4.9.1C:** Riverside County shall not necessarily require all land uses to withstand flooding. These may include land uses such as agricultural, golf courses, and trails. For these land uses, flows shall not be obstructed, and upstream and downstream properties shall not be adversely affected by increased

velocities, erosion backwater effects, concentration of flows, and adverse impacts to water quality from point and nonpoint sources of pollution.

- **Existing MM 4.9.1.D:** Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.

- **Existing MM 4.9.2C:** Riverside County shall require that for agricultural, recreation or other low-density uses, flows are not obstructed and that upstream and downstream properties are not adversely affected by increased velocities, erosion backwater effects or concentration of flows.

- **Existing MM 4.10.9A:** Riverside County, where required, and in accordance with issuance of a National Pollutant Discharge Elimination System (NPDES) permit, shall require the construction and/or grading contractor for individual developments to establish and implement specific Best Management Practices (BMPs) at time of project implementation.

- **Existing MM 4.10.9B:** Prior to any development within the County [of Riverside], a grading plan shall be submitted to the Riverside County Building and Safety Department and/or Riverside County Geologist for review and approval. As required by the County [of Riverside], the grading plan shall include erosion and sediment control plans. Measures included in individual erosion control plans may include, but shall not be limited to, the following:

  a. Grading and development plans shall be designed in a manner which minimizes the amount of terrain modification.

  b. Surface water shall be controlled and diverted around potential landslide areas to prevent erosion and saturation of slopes.

  c. Structures shall not be sited on or below identified landslides unless slides are stabilized.

  d. The extent and duration of ground disturbing activities during and immediately following periods of rain shall be limited, to avoid the potential for erosion which may be accelerated by rainfall on exposed soils.

  e. To the extent possible, the amount of cut and fill shall be balanced.

  f. The amount of water entering and exiting a graded site shall be limited through placement of interceptor trenches or other erosion control devices.

  g. Erosion and sediment control plans shall be submitted to the County [of Riverside] for review and approval prior to the issuance of grading permits.

- **Existing MM 4.10.9C:** Where required, drainage design measures shall be incorporated into the final design of individual projects on-site. These measures shall include, but will not be limited to:

  a. Runoff entering developing areas shall be collected into surface and subsurface drains for removal to nearby drainages.

  b. Runoff generated above steep slopes or poorly vegetated areas shall be captured and conveyed to nearby drainages.

c. Runoff generated on paved or covered areas shall be conveyed via swales and drains to natural drainage courses.

d. Disturbed areas identified as highly erosive shall be (re)vegetated.

e. Irrigation systems shall be designed, installed and maintained in a manner which minimizes runoff.

f. The landscape scheme for projects within the project site shall utilize drought-tolerant plants.

g. Erosion control devices such as rip-rap, gabions, small check dams, etc., may be utilized in gullies and active stream channels to reduce erosion.

- **Existing MM 4.15.4A:** Conventional septic tanks/subsurface disposal systems shall be prohibited within any designated Zone A of an EPA wellhead protection area. Where a difference between Riverside County and EPA septic tank setback distance requirements exists, the EPA standard shall apply.

- **Existing MM 4.17.1C:** Development within unincorporated areas of the County [of Riverside] shall not use water of any source of quality suitable for potable domestic use for non-potable uses, including cemeteries, golf courses, parks, highway landscaped areas, industrial and irrigation uses, or other non-domestic use if suitable recycled water is available as provided in Sections 13550-13566 of the [California] Water Code and/or Sections 65591-65600 and 65601-65607 of the Public Resource Code. Prior to the issuance of any land use permit, the County [of Riverside] shall determine to what extent and in which manner the use of recycled water is required for individual water projects. Future development shall be designed, constructed and maintained in accordance with the recycled water measures mandated by the County [of Riverside].

- **Existing MM 4.17.1D:** Riverside County shall enforce compliance with federal, state and local standards for water conservation within residential, commercial or industrial projects. Prior to approval of any development within the County [of Riverside], the applicant shall submit evidence to Riverside County that all applicable water conservation measures have been met.

- **Existing MM 4.17.1E:** For any development within the [DWR-designated] Palo Verde Planning Area supplied with water from the Colorado River, the project applicant shall enter into a contract with the City of Needles [the LCWSP water contractor], pursuant to the Lower Colorado Water Supply Project program. Evidence of such a contractual agreement shall be submitted to the County [of Riverside] prior to the approval of any development entitlement for the project.

- **Existing MM 4.17.2A:** In areas where it is not practical to conserve soils suitable for recharge (as determined by the Riverside County Flood Control and Water Conservation District), water harvesting and recharge facilities shall be built within the same groundwater basin in which the recharge area is lost. The construction of "replacement" recharge areas shall equal the amount of recharge area lost and/or shall incorporate equipment or facilities capable of replacing (at an equal volume) the amount of groundwater recharge capacity lost as a result of development. The identification, designation, location or installation of "replacement" groundwater recharge capacity shall be reviewed and approved by the Riverside County Flood Control and Water Conservation District prior to the issuance of grading permits.

- **Existing MM 4.17.3A:** New development that includes more than one acre of impervious surface area (including roofs, parking areas, streets, sidewalk, etc.) shall incorporate features to facilitate the onsite

infiltration of precipitation and/or runoff into groundwater basins. Such features shall include (but not be limited to): natural drainage systems (where economically feasible), detention basins incorporated into project landscaping; and the installation of porous areas within parking areas. Where natural drainage systems are utilized for groundwater recharge, they shall be managed using natural approaches (as modified to safeguard public health and safety). Groundwater recharge features shall be included on development plans and shall be reviewed by the Riverside County Building and Safety Department and/or Riverside County Flood Control and Water Conservation District prior to the issuance of grading permits.

- **Existing MM 4.17.4A** Where development may interfere with, disrupt, or otherwise affect surface or subsurface hydrologic baseline conditions (as determined by the Riverside County Flood Control and Water Conservation District, the United States Army Corps of Engineers, the California Department of Fish and Game [now California Department of Fish and Wildlife], and/or the Regional Water Quality Control Board), preparation of a project specific hydrologic study shall be required. The hydrologic study shall include (but shall not be limited to): an inventory of surface and subsurface hydrologic conditions existing at the time of the study; an analysis of how the proposed development would affect these hydrologic baseline conditions; and specific measures to limit or eliminate the interference or disruption of the on-site hydrologic process. The hydrologic study shall evaluate the feasibility of incorporating bioengineering measures into any project that may alter the hydrologic process. Where required by the County [of Riverside], the hydrologic study shall include analysis of, at an equal level of detail, potential impacts to tributary or downstream areas. The hydrologic study shall be submitted to the County [of Riverside] or responsible entity for review and shall be approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

- **Existing MM 4.17.4B:** The project applicant shall submit to the County [of Riverside] for review and approval, evidence that the specific measures to limit or eliminate the disruption or interference to the hydrologic process resulting from the entire development process, will be implemented as set forth in the hydrologic study. Such evidence may take the form of (but shall not be limited to): a development agreement; land banking; the provision of adequate funds to guarantee the construction, maintenance or restoration of hydrologic features; or any other mechanism that will achieve said goals. Said evidence shall be submitted and approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

- **Existing MM 4.17.4C:** Where determined feasible by the County [of Riverside] or responsible entity, bioengineering measures shall be incorporated into any project that may alter the hydrologic process.

- **Existing MM 4.17.5A:** The development of septic systems shall be in accordance with applicable standards established by Riverside County and other responsible authorities.

- **Existing MM 4.17.5B:** Point source pollution reduction programs shall fully adhere to applicable standards required by federal, state and local agencies. Prior to the approval of individual projects, Riverside County shall verify that the provisions of applicable point source pollution programs have been satisfied.

- **Existing MM 4.17.5C:** Where development may contribute to a worsening of local or regional ground or surface water quality (as determined by the Riverside County Department of Environmental Health and/or RWQCB), a water quality analysis shall be prepared. The water quality analysis shall include (but shall not be limited to): an analysis of existing surface and subsurface water quality; an assessment of how the proposed development would affect existing water quality; an assessment of how the proposed

development would affect beneficial uses of the water; and specific measures to limit or eliminate potential water quality impacts and/or impacts to beneficial uses of ground/surface water. Where determined necessary by the County [of Riverside] or other responsible entity, the water quality analysis shall include, at an equal level of detail, potential impacts to tributary or downstream areas. The water quality analysis shall be submitted to the County [of Riverside] and the RWCQB for review and shall be approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

- **Existing MM 4.17.5D:** The project applicant shall submit to the County [of Riverside] and the RWQCB, for review and approval, evidence that the specific measures to limit or eliminate potential water quality impacts resulting from the entire development process, will be implemented as set forth in the water quality analysis. Said evidence shall be submitted and approved prior to the issuance of any entitlement that would result in the physical modification of the project site.

- **Existing MM 4.17.5E:** For each new development project, the following principles and policies shall be considered and implemented:

  a. Avoid or limit disturbance to natural water bodies and drainage systems (including ephemeral drainage systems) when feasible. Provide adequate buffers of native vegetation along drainage systems to lessen erosion and protect water quality.

  b. Appropriate best management practices (BMPs) must be implemented to lessen impacts to Waters of the United States and/or Waters of the State of California resulting from development. Drainages should be left in a natural condition or modified in a way that preserves all existing water quality standards where feasible. Any discharges of sediment or other wastes, including wastewater, to Waters of the United States or Waters of the State must be avoided to the maximum extent practicable. All such discharges will require an NPDES permit issued by the Regional Water Quality Control Board (RWQCB).

  c. Small drainages shall be preserved and incorporated into new development, along with adequate buffer zones of native vegetation, to the maximum extent practicable.

  d. Any impacts to Waters of the United States require a Section 401 Water Quality Standards Certification from the RWQCB. Impacts to these waters shall be avoided to the maximum extent practicable. Where avoidance is not practicable, impacts to these waters shall be minimized to the maximum extent practicable. Mitigation of unavoidable impacts must, at a minimum, replace the full function and value of the affected water body. Impacts to Waters of the United States also require a Clean Water Act Section 404 Permit from the United States Army Corps of Engineers and a Streambed Alteration Agreement from the California Department of Fish and Game [now California Department of Fish and Wildlife].

  e. The County [of Riverside] shall encourage the use of pervious materials in development to retain absorption and allow more percolation of stormwater into the ground. The use of pervious materials, such as grass, permeable/porous pavement, etc., for runoff channels and parking areas shall also be encouraged. Lining runoff channels with impermeable surfaces, such as concrete or grouted riprap, will be discouraged.

  f. The County [of Riverside] shall encourage construction of detention basins or holding ponds and/or constructed wetlands within a project site to capture and treat dry weather urban runoff and the first

flush of rainfall runoff. These basins should be designed to detain runoff for a minimum time, such as 24 hours, to allow particles and associated pollutants to settle and to provide for natural treatment.

g. The County [of Riverside] shall encourage development to retain areas of open space as natural or landscaped to aid in the recharge and retention of runoff. Native plant materials shall be used in replanting and hydroseeding operations, where feasible.

h. The County [of Riverside] shall require that environmental documents for proposed projects in areas tributary to Canyon Lake Reservoir, Lake Elsinore, sections of the Santa Ana River, Fulmar Lake, and Mill Creek (as a result of the proposed 2002 303 (d) listing of these waterbodies) include discharge prohibitions, revisions to discharge permits, or management plans to address water quality impacts in accordance with the controls that may be applied pursuant to state and federal regulation. Environmental documents shall acknowledge that additional requirements may be imposed in the future for projects in areas tributary to the water bodies listed above.

i. The County [of Riverside] shall ensure that in new development, post-development stormwater runoff flow rates do not differ from the pre-development stormwater runoff flow rates.

j. All construction projects should be designed and implemented to protect, and if at all possible, to improve the quality of the underlying groundwater.

k. The County [of Riverside] shall encourage the enhancement of groundwater recharge wherever possible. Measures such as keeping stream/river channels and floodplains in natural conditions or with pervious surfaces, as well as keeping areas of high recharge as open space will be considered.

l. The County [of Riverside] shall prohibit the discharge of waste material resulting from any type of construction into any drainage areas, channels, streambeds, streams, lakes, wetlands or rivers. Spoil sites shall be prohibited within any streams or areas where spoil material could be washed into a water body.

m. The County [of Riverside] shall require that appropriate BMPs be developed and implemented during construction efforts to control the discharge of pollutants, prevent sewage spills, and to avoid discharge of sediments into the streets, stormwater conveyance channels or waterways.

New Mitigation Measures: EIR No. 521 also includes the following measure to ensure that cumulative impacts associated with wastewater treatment are reduced to less than significant.

- **New MM 4.19.E-N1:** Conventional septic tanks/subsurface disposal systems shall be prohibited within any designated Zone A of an EPA wellhead protection area. Where a difference between Riverside County and EPA septic tank setback distance requirements exists, the more restrictive standard shall apply.

e. Significance

Implementation of all of the above regulations, General Plan policies and mitigation measures, would help reduce, avoid or minimize various cumulative impacts to water resources, including supplies, infrastructure, water quality, hydrology and storm drainage. However, while many of these impacts will be *individually* less than significant, for some water impacts incremental impacts will be *cumulatively* substantial, even with the implementation of all feasible mitigation. Specifically, impacts that would be cumulatively significant under any of the build out

scenarios examined herein, including the project (GPA No. 960), include: incremental increases in the demand for water supply; incremental increases in groundwater usage and its recharge; incremental changes to existing drainage patterns, erosion, sedimentation and siltation; and, incremental increases in runoff due to development of additional impervious surfaces. For these areas, cumulative impacts would be significant and unavoidable.

D. Cumulative Analysis - Conclusions

In total, the above analyses indicate that the project, GPA No. 960, would have a number of cumulatively significant incremental impacts as a result of future development implementing the updated Riverside County General Plan. These cumulative impacts are summarized in Table 5.5-AI (Project Cumulative Impacts Summary), below. In many cases, the reduced development footprint, updated circulation network and enhanced environmental policies put forth by GPA No. 960 will result in *reduced* cumulative impacts compared to those originally forecast for the 2003 RCIP General Plan (as per its accompanying EIR No. 441).

However, given that GPA No. 960's changes will affect numerous, perhaps even thousands, of future individual General Plan-implementing projects over time, when compared against the environmental baseline (existing conditions), the project will still result in cumulatively significant environmental impacts. As outlined above in the various subsections of this analysis, in some cases the project's cumulative impacts would also be less than those forecast for the cumulative General Plan (CULM) scenario, that is the General Plan as it would be should all the GPAs listed in Table 5.5-A were adopted.

Table 5.5-AI: Project Cumulative Impacts Summary

Impact #	Cumulative Impact Title / Description [1]	No Impact	Incremental, Non-Substantial	Cumulatively Substantial/ Significant
4.2 – Land Use				
4.2.A	Physically divide an established community.		•	
4.2.B	Conflict with land use policies to avoid or mitigate an environmental effect.		•	
4.2.C	Conflict with any habitat conservation or natural community conservation plan.		•	
4.3 – Population and Housing				
4.3.A	Induce direct or indirect population growth.			•
4.3.B	Displace residential units.		•	
4.3.C	Displace people.		•	
4.4 – Aesthetic and Visual Resources				
4.4.A	Adversely affect scenic vistas.			•
4.4.B	Adversely affect scenic resources within State Scenic Highways.			•
4.4.C	Adversely affect existing visual character.		•	
4.4.D	Cause adverse light and glare effects.			•
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•	
4.5 – Agricultural and Forestry Resources				
4.5.A	Cause the conversion of designated Farmlands.			•
4.5.B	Encroach on or conflict with existing agricultural uses.			•
4.5.C	Adversely affect forest lands and forestry uses.		•	
4.6 – Air Quality				
4.6.A	Conflict with air quality plans.			•
4.6.B (1)	Cause significant construction (short-term) air emissions.			•

Impact #	Cumulative Impact Title / Description [1]	No Impact	Incremental, Non-Substantial	Cumulatively Substantial/ Significant
4.6.B (2)	Cause significant operational (long-term) air emissions.			•
4.6.C	Cause cumulatively significant project air quality impacts.			•
4.6.D	Expose sensitive receptors to air pollutants.			•
4.6.E	Expose substantial numbers of people to objectionable odors.		•	
4.7 – Greenhouse Gases				
4.7.A	Generate substantial greenhouse gas emissions.		•	•
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.		•	•
4.8 – Biological Resources				
4.8.A	Adversely affect riparian and other sensitive habitats.		•	
4.8.B	Cause direct and indirect impacts to protected species or their habitats.		•	
4.8.C	Adversely affect wetlands.		•	
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.		•	
4.8.E	Conflict with adopted habitat conservation plans.		•	
4.8.F	Conflict with local biological resource protection policies or ordinances.		•	
4.9 – Cultural and Paleontological Resources				
4.9.A	Adversely change the significance of historical resources.		•	
4.9.B	Cause the destruction of known archeological resources.			•
4.9.C	Cause the destruction of unique paleontological resources or sites.			•
4.9.D	Result in the disturbance of human remains.		•	
4.10 – Energy Resources				
4.10.A	Increase demand for electricity.			•
4.10.B	Increase demand for natural gas.			•
4.10.C	Cause the inefficient use of energy.		•	
4.11 – Flood and Dam Inundation Hazards				
4.11.A	Result in housing within flood hazard areas.		•	
4.11.B	Cause impediment of flows.		•	
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•	
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•	
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•	
4.12 – Geology and Soils				
4.12.A	Expose people or structures to substantial adverse effects due to rupture of a known earthquake fault.		•	
4.12.B	Expose people or structures to substantial strong seismic groundshaking.			•
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.		•	
4.12.D	Expose people or structures to substantial adverse effects due to landslide.			•
4.12.E	Result in substantial soil erosion or topsoil loss.		•	
4.12.F	Result in development on unstable geological units or soils.		•	
4.12.G	Result in development on expansive soils.		•	
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.		•	
4.13 – Hazardous Materials and Safety				
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•	
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•	

Impact #	Cumulative Impact Title / Description [1]	No Impact	Incremental, Non-Substantial	Cumulatively Substantial/ Significant
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•	
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•	
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•	
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.		•	
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•	
4.13.H	Expose people or structures to significant risk due to wildland fires.			•
4.14 – Mineral Resources				
4.14.A	Result in the loss of availability of delineated locally important minerals.	•		
4.14.B	Result in the loss of availability of known mineral resources.		•	
4.15 – Noise				
4.15.A	Generate noise or cause noise exposure in excess of standards.			•
4.15.B	Generate or cause exposure to excessive groundborne vibration.		•	
4.15.C	Result in a substantial permanent increase in ambient noise levels.			•
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.			•
4.15.E	Expose people to excessive airport-related noise levels.		•	
4.16 – Parks and Recreation				
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.			•
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•	
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•	
4.17 – Public Facilities				
4.17.A	Cause adverse environmental effects due to the need for fire protection services.			•
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the Riverside County Integrated Waste Management Plan.		•	
4.17.D	Cause adverse environmental effects due to the need for schools.			•
4.17.E	Cause adverse environmental effects due to the need for library services.			•
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•
4.18 – Transportation and Traffic				
4.18.A	Conflict with circulation system effectiveness regulations for any mode of transportation, including vehicular, mass transit and non-motorized travel.			•
4.18.B	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures, or other standards, established by the county congestion management agency for designated roads.			•
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•	
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•	
4.18.E	Substantially increase road hazards due to design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).		•	
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•	
4.18.G	Cause an adverse effect on circulation during construction.		•	
4.18.H	Result in inadequate emergency access or access to nearby uses.		•	
4.18.I	Conflict with policies for public transit or non-motorized travel (bikeways, pedestrian facilities, etc.), or substantially decrease the performance or safety of such facilities.		•	

Impact #	Cumulative Impact Title / Description [1]	No Impact	Incremental, Non-Substantial	Cumulatively Substantial/ Significant
4.19 – Water Resources				
4.19.A	Result in insufficient water supply.			•
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.			•
4.19.C	Substantially degrade water quality.		•	
4.19.D	Violate water quality standards or waste discharge requirements.		•	
4.19.E	Exceed wastewater treatment requirements.		•	
4.19.F	Exceed wastewater treatment capacity.		•	
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•	
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.			•
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.			•
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.			•
5.2 – Significant Irreversible Changes				
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.			•
5.2.B	Result in the unjustified commitment of irretrievable resources.		•	
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.			•
5.2.D	Result in an environmental accident that could cause irreversible damage.		•	
5.4 – Significant Growth-Inducing Effects				
5.4.A	Foster direct or indirect economic growth.			•
5.4.B	Foster direct or indirect population growth.			•
5.4.C	Result in construction of additional housing.			•
5.4.D	Remove obstacles to population growth.			•
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.			•
5.4.F	Result in population increase that may strain community services or facilities.			•

Footnotes:

1. Impacts are based on a comparison of the cumulative effects of build out of the General Plan as amended pursuant to the project, GPA No. 960, compared to environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1-5.5, 2012.

In summary, the analysis herein finds that for the project impacts marked as "Cumulatively Substantial/ Significant" in the table above, the incremental impacts from the project, GPA No. 960, when added to other closely related past, present and reasonably foreseeable or probable future developments which would occur in implementing and building out the Riverside County General Plan, will be cumulatively considerable and unavoidable.

Section 5.6 Consistency with Regional Plans

A. Introduction

Section 15125(d) of the State CEQA Guidelines requires discussion of any inconsistencies between a regionally significant project and regional plans. Within the greater metropolitan region of Southern California, regional

planning is carried out principally by the Southern California Association of Governments (SCAG). SCAG is the state-recognized "Municipal Planning Organization" (MPO) that covers Riverside County and five other counties in Southern California (Los Angeles, Orange, Ventura, San Bernardino and Imperial). The following discussion outlines quantitatively and qualitatively how the General Plan change proposed by the project, General Plan Amendment No. 960 (GPA No. 960), would affect consistency with SCAG's regional plans.

In addition to the SCAG Regional Comprehensive Plan (SCAG Regional Plan) and Compass Blueprint discussed below, the State CEQA Guidelines notes a number of other types of regional plans must also be discussed. For this EIR, these include applicable air quality attainment plans, water quality control plans and others. As noted below, the following regional documents are discussed in the EIR section indicated. Where a document is discussed or analyzed in relation to a specific impact, this is also noted. In accordance with the directives of Section 15126(d), the following regional plans are discussed in this EIR in the following locations:

- **Section 4.3 (Population and Housing):** Regional housing needs allocations.
- **Section 4.6 (Air Quality):** Applicable air quality attainment plans and State Implementation Plans, in particular the discussion for Impact 4.6.A in Section 4.6.6.
- **Section 4.7 (Greenhouse Gases):** Plans for the reduction of greenhouse gas emissions, in particular the discussion for Impact 4.7.B in Section 4.7.6.
- **Section 4.8 (Biological Resources):** Habitat conservation plans and natural community conservation plans, in particular the discussion for Impact 4.8.E in Section 4.8.6.
- **Section 4.17 (Public Facilities):** Area-wide waste treatment plans (see specifically, Section 4.17.4, Solid Waste Management) in particular the discussion for Impact 4.17.C-2 in Section 4.17.4 E.
- **Section 4.18 (Transportation and Traffic):** Regional transportation planning is addressed in Section 4.18.5.
- **Section 4.19 (Water Resources):** Water quality control plans, in particular the discussion for Impact 4.19.D in Section 4.19.8.

B. Regional and Countywide Projections

The most important consistency question at the General Plan level is whether or not the projected demographics of the county (e.g., population, housing and employment figures) are consistent with those used by SCAG. Consistency (or inconsistency) at this fundamental level dictates how the General Plan and the county's long-range planning efforts will dovetail (or clash) with a host of regional SCAG plans, as well as with those of surrounding cities and counties.

When examining regional demographic consistency, two main projections of population, housing and employment are involved: The first is SCAG's 2008 Regional Transportation Plan (RTP-08) that formulates projections up to year 2035. On Riverside County's side is the 2010 Riverside County Projection (RCP-10), which involves data developed by Riverside County Center for Demographics and Research (RCCDR) and approved by the Board of Supervisors. It also projects socioeconomic data for Riverside County's various city and county boundaries to the year 2035.

In addition to Riverside County's primary socioeconomic projections (RCP-10), a second set of projects were developed for the General Plan predicting how Riverside County would look at "full build out" of the county. For this scenario, "full build out" is defined as the point at which all developable land within unincorporated Riverside County has been built upon and all attendant infrastructure, parks, roads, trails, conservation lands, etc., assembled as planned. The year 2060 is the hypothetical end point set for this analysis, hypothetical because the myriad of forces involved in the growth and evolution of human habitation over time mean that a truly "built out" county is exceedingly rare – particularly for one as large as Riverside County (approximately the size of New Jersey). The General Plan's "build out scenario" was developed by the RCCDR and Riverside County Planning Department using the land uses mapped in the existing (*2009* ~~2008~~) General Plan, as reflected by the county's "Riverside County Informational System" (RCLIS) GIS system. The General Plan also includes a variety of policies, policy areas, overlays and other factors affecting the development capacity of Riverside County. Appendix E-1 of the General Plan addresses the methods and assumptions used in developing the build out scenario.

As part of GPA No. 960, a second General Plan build out scenario was created to reflect how Riverside County would look if it developed according to the updated General Plan, that is, including the proposed changes of GPA No. 960. This second set of build out projections represents the "with-project" scenario, while the existing General Plan build out projections represent the "status quo" scenario. For certain demographically driven environmental effects (such as future traffic volumes and numbers of elementary school student, for example), comparisons between these two build out scenarios allows for a clear depiction of how the proposed project would affect the future of Riverside County. This scenario is denoted as the "GPU/GPA960" scenario in Section 5.5 (Cumulative Impacts) and also forms the "No Project/Status Quo" Alternative that was analyzed in Section 6.4.B (Alternatives Analysis).

Lastly, because the General Plan build out scenario projects all the way out to the year 2060, it was necessary for the RCCDR to also create an additional set of projections that took the General Plan (i.e., growth within the county) out just to the year 2035, in order to allow comparison of Riverside County's projections with those of SCAG in the aforementioned RTP-08.

Table 5.6-A, below, encompasses all of these scenarios and shows both the current and proposed updated General Plan build out (2060) scenarios as well as SCAG's RTP-08 projections for Riverside County. By comparing the land use capacity projected for the amended General Plan to SCAG's regional projections, the project can be evaluated on its regional consistency and whether or not the amended General Plan would adequately provide for Riverside County's envisioned future. In reviewing this table, it should be noted that the General Plan build out scenarios represent Riverside County's projected "capacity" for various types of land development – not the literal amount of development expected to occur in the county. It must be remembered that in most cases, such as on private property, for example, the General Plan can only plan and provide for orderly growth within Riverside County – it cannot cause this growth to occur. The overall growth occurring in Riverside County is driven by a combination of many competing factors, including land availability, environmental opportunities and constraints, demographic pressures and a host of economic forces.

Table 5.6-A: Comparison of Various Regional and County Projections

STATISTICS[1]		Year 2035 Projections			Build Out (2060) Projections	
		Riverside County RCP 2010[2]	SCAG RTP 2008[3]	Updated Gen. Plan Capacity[4,5,7]	Current Gen. Plan Capacity[7]	Updated Gen. Plan Capacity[4,5,7]
Population	**Total**	**3,396,300**	**3,596,700**	**n/a**	**n/a**	**n/a**
Unincorporated[6]		909,100	1,243,600	969,100	1,727,400	1,702,700
Incorporated		2,487,200	2,353,000	n/a	n/a	n/a
Residences	**Total**	**1,250,500**	**1,334,800**	**n/a**	**n/a**	**n/a**
Unincorporated[6]		324,600	444,000	331,100	531,500	520,900

STATISTICS[1]	Year 2035 Projections			Build Out (2060) Projections	
	Riverside County RCP 2010[2]	SCAG RTP 2008[3]	Updated Gen. Plan Capacity[4,5,7]	Current Gen. Plan Capacity[7]	Updated Gen. Plan Capacity[4,5,7]
Incorporated	926,000	890,800	n/a	n/a	n/a
Employment Total	**1,285,300**	**1,413,500**	**n/a**	**n/a**	**n/a**
Unincorporated[6]	283,200	338,000	286,000	595,200	561,800
Incorporated	1,002,100	1,075,600	n/a	n/a	n/a

Footnotes:
1. All demographic values rounded to the nearest 100.
2. Riverside County Center for Demographic Research, Riverside County Projections 2010 (RCP-10).
3. SCAG, Regional Transportation Plan, 2008.
4. That is, the current General Plan as amended pursuant to the changes proposed by the project, GPA No. 960.
5. The growth rate for the updated General Plan is calculated as an average of the targeted years (2035 and 2060). As a result,the rate does not represent a compounding annual growth rate formula.
6. Values vary due to the effects of new city incorporations. The RCP-10 data set excludes the new cities of Wildomar and Menifee from the "unincorporated" data, the SCAG 2008 RTP does not.
7. Estimates not available because the Riverside County General Plan does not include incorporated areas.

Source: Riverside County Planning Dept., project application materials, 2010. Riverside County Center for Demographic Research, Riverside County Projections 2010 (RCP-10), 2010.

Additionally, comparing and analyzing data that utilize different assumptions is difficult. For instance, since the development of SCAG RTP-08, two new cities (Wildomar and Menifee) have been incorporated in Riverside County, a fact that is reflected in Riverside County's RCP-10 but not in SCAG's earlier RTP-08. A county like Riverside where economic tides directly affect the growth, it needs its socioeconomic data and land use plans adjusted regularly to efficiently manage both the growth pressure and the undulating economic conditions. This makes comparing regional data and assessing regional consistency even more difficult, as the official projection data from the regional entities become outdated. SCAG's official regional projection data for Riverside County at this point in time is the RTP-08. Therefore, having to compare RCP-10 data rather than the RTP-08 data with the General Plan land use remedies the issue of data inconsistency.

The usual approach for local jurisdictions in Riverside County is to compare SCAG's RTP-08 projections with the full build out of their general plans' land use plans. However, a quantitative comparison between the proposed updated General Plan and RCP-10, rather than SCAG's RTP-08, was determined to be more current and appropriate for assessing regional consistency, because the RTP-08 used pre-recession projections which have seen been revised downward to reflect the current economy. As an example from Table 5.6-A, the SCAG RTP-08 population projection for 2035 was 3.6 million while the RCP-10 population projection was only 3.4 million. The difference mainly comes from different base year conditions. SCAG's RTP-08 projections used 2006 Riverside County data (pre-recession), while RCP-10 used 2010 Riverside County data, which captures the economic downturn. Another consideration was the fact that the next set of SCAG projections would be released under the 2012 Regional Transportation Plan (RTP-12). The RTP-12 scenario developed by SCAG will use the most recent projections of its member counties; in this case, Riverside County submitted its RCP-10 projections to SCAG for their use. For these reasons, the updated General Plan build out scenario, as per GPA No. 960 proposed changes, was assessed for regional socioeconomic consistency using RCP-10 as the regional projections model rather than SCAG's 2008 RTP.

The other technical difficulty that arises in socioeconomic consistency assessments is the issue of comparing data with different projection years (that is, covering differing time spans). While the regional data projections available go to year 2035, the General Plan land use has an estimated build out year of 2060. This inconsistency was addressed in two ways: Since the numbers do not exactly cover the same timeframe, the first solution is to instead compare the overall capacity supply and demand trends for Riverside County's unincorporated areas. The second is to examine the respective jobs-to-housing unit ratios.

First, the purpose of the projection data is to analyze Riverside County's growth trends and factors for development into the future. In the case of RCP-10 and RTP-08, the forecasts project to the year 2035. Since this data predicts how Riverside County is going to grow in terms of population, dwelling units and employment, it can be equated to the demand factors for growth. Conversely, the General Plan's land use assumptions provide a geographical basis and association for Riverside County's forecast demographic values. The challenge of the General Plan then, is to ensure that this growth is managed and directed in a coordinated and appropriate manner for orderly development within Riverside County. For this reason, the land use assumptions of the General Plan can be considered as the supply factors that dictate where and how the County of Riverside would accommodate its portion of the forecasted regional growth. Since the proposed update for the General Plan integrated regional projection data into its land use planning assumptions, both supply and demand factors can be adequately addressed through a checks and balance system.

As shown in Table 5.6-A, at anticipated build out in 2060, the General Plan, as updated by GPA No. 960, would have the land use capacity to accommodate a population of roughly 1,702,700 residents, 520,900 housing units and 561,800 jobs. In order to compare the two numbers consistently at a given year of 2035, these General Plan build out numbers were interpolated (back-projected) to year 2035 by applying a steady annual growth rate. The resultant projections for year 2035 yielded a population of 969,100 with a corresponding 3% growth rate, 331,100 dwelling units with a 2.3-2.6% growth rate and 286,000 jobs value with a 4-5% growth rate. When compared to the same socioeconomic projections for RCP-10, the population, dwelling units and employment results only slightly exceed its 2035 projections: 6.6% higher for population, 2.0% higher for dwelling units and 1.0% higher for employment. Such close numbers demonstrates that the project-updated General Plan would be generally consistent with regional projections.

The other method for regional consistency comparisons mentioned above involves a comparison of the job-to-housing unit ratios. This ratio measures the extent to which job opportunities in a given geographic area match the available housing in the same area. This ratio highlights the basic planning premise that a "balanced" community provides a reasonable amount of both housing and jobs in close proximity, so that residents can both live and work in their local community – avoiding long commutes that trigger higher traffic, increase air pollution and noise, and generally decrease the overall standard of living. Accordingly, a commonly accepted "optimal balance" for a jobs-to-housing ratio is in the range of 1.3 or 1.4 jobs-to-housing units. That is, the number of employed persons (jobs) divided by the number of housing units available. A ratio in the 1.3 to 1.4 range would mean that there is a net surplus of jobs available, which would draw job-seekers into the community, rather than necessitate workers' exodus outward for employment. According to Ewing (1996), Cervero (1991) and others, a ratio in this range implies balance in the community.

The jobs-housing ratio of the updated General Plan at build out (2060) was calculated at 1.08 and at 0.86 for year 2035. This is nearly the same as that for RCP-10 (0.87), although the updated General Plan does provide a higher gross employment level (286,000 jobs) than RCP-10 (283,200 jobs). In addition, it is important to note that as growth in Riverside County proceeds from 2035 to 2060, the balance in the jobs-to-housing ratio for unincorporated Riverside County improves (from 0.86 in 2035 to 1.08 at 2060 build out). This is an indication that the proposed updated General Plan is improving Riverside County's jobs-housing balance over time. This is important as, historically, Riverside County has been a housing-rich region in need of additional local jobs to ensure proper balance. In particular, these ratios demonstrate that further increases in housing without corresponding increases in employment opportunities would only worsen Riverside County's balance and negatively affect the traffic patterns in Riverside County. As demonstrated in Table 5.6-A, the revisions to the General Plan proposed by GPA No. 960 help decrease the gap between housing and employment over time. The updated General Plan provides a blueprint for achieving an improved job-to-housing ratio over time, while at the same time maintaining consistency with SCAG regional plan for 2035.

For all of these reasons, the proposed project, as it affects Riverside County's General Plan, is considered regionally consistent at the demographic and socioeconomic level with both the RCP-10 and, since the RCP-10 will be used by SCAG in the preparation of its RTP-12, with future Regional Transportation Plans.

C. SCAG Regional Comprehensive Plan

As described by SCAG, its 2008 Regional Comprehensive Plan is a "major advisory plan" that addresses "important regional issues like housing, traffic / transportation, water and air quality." SCAG further states that:

> *"The Regional Comprehensive Plan (RCP) serves as an advisory document to local agencies in the Southern California region for their information and voluntary use for preparing local plans and handling local issues of regional significance. The RCP presents a vision of how Southern California can balance resource conservation, economic vitality and quality of life. The RCP identifies voluntary best practices to approach growth and infrastructure challenges in an integrated and comprehensive way. It also includes goals and outcomes to measure our progress toward a more sustainable region."*

Along with the quantitative regional analyses provided above, the 2008 SCAG Regional Comprehensive Plan also contains a number of policies that were analyzed qualitatively for regional consistency. In this subsection, the various applicable portions of the SCAG Regional Comprehensive Plan are listed and the consistency of the proposed updated General Plan relative to these policies is discussed.

The SCAG RCP features nine chapters, each of which include an "Action Plan" of numbered policies, called "SCAG Best Practices," to address specific areas of planning or resource management. Since many of the chapters in the RCP address SCAG operations or directives from the federal or state government, only those SCAG policies relevant to local governments, i.e., the County of Riverside, are addressed here. For each of the SCAG "Action Plans" addressed below, the relevant SCAG policies (i.e., "SCAG Best Practices") are first listed in italics, with a discussion of the project's consistency following.

1. Land Use and Housing Action Plan

LU-4: *Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.*

LU-4.1: *Local governments should adopt and implement General Plan Housing Elements that accommodate housing needs identified through the Regional Housing Needs Assessment (RHNA) process. Affordable housing should be provided consistent with RHNA income category distributions adopted for each jurisdiction. To provide housing, especially affordable housing, jurisdictions should leverage existing State programs such as HCD's Workforce Incentive Program and density bonus law and create local incentives (e.g., housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and transit villages) and partnerships with non-governmental stakeholders.*

Discussion: The recently amended Housing Element of the General Plan identifies and establishes Riverside County's policies with respect to meeting the needs of existing and future residents in Riverside County. It establishes policies that guide County decision-making and it sets forth an action plan to implement housing goals as required for the SCAG region and to meet Riverside County's Regional Housing Needs Assessment share. The changes proposed by the project do not alter this outcome. According to the above discussion, the project-updated General Plan would be consistent with the land use and housing policies of the SCAG Regional Comprehensive Plan. GPA No. 960 does not propose any changes to General Plan policies that would contradict the SCAG Regional Plan or impede implementation of its policies.

LU-5: *Local governments should leverage federal and state and local funds to implement the Compass Blueprint.*

LU-5.1: *All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.*

LU-5.2: *Subregional organizations should leverage the federal transportation planning funds available at the subregional level, to complete projects that integrate land use and transportation planning and implement Compass Blueprint principles.*

Discussion: GPA No. 960 does not directly discuss the funding and financing of development projects. It does, however, provide for a uniquely integrated planning process that balances the needs of development with the infrastructure, particularly roadways, needed to serve the new uses through CETAP. The TUMF (Transportation Uniform Mitigation Fee) program further ensures this integration by requiring new development pay its fair share of funds needed to provide roadway and related infrastructure improvements when needed. GPA No. 960 would further contribute to this coordination by providing updates to the Circulation Element of the General Plan, including the Countywide Circulation Network. For these reasons, the updated General Plan, as amended pursuant to GPA No. 960, would be consistent with the land use and housing policies of the SCAG Regional Comprehensive Plan. GPA No. 960 does not propose any changes to General Plan policies that would contradict the SCAG Regional Plan or impede implementation of its policies.

LU-6: *Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.*

LU-6.1: *Local governments should take a comprehensive approach to updating their General Plans, keeping General Plans up-to-date and providing progress reports on updates and implementation, as required by law.*

Discussion: GPA No. 960 includes countywide and Area Plan-wide updates to policies and maps in the required and optional elements, as well as in the various appendices, to provide up-to-date data supporting the changes. For example, the Land Use Element contains policy areas and overlays with alternate land use assumptions that accurately calculate the density yields of the targeted areas, such as the Good Hope and Meadowbrook communities, to determine the maximum impact of the alternate land use designation. The Circulation Element contains updates to the roadway networks to reflect the latest traffic study results based on the future General Plan land uses. It also includes an updated comprehensive countywide trails network system. The Air Quality Element contains new policies to provide guidance on how to analyze Greenhouse Gas (GHG) emissions in Riverside County to be compliant with the AB 32 and SB 375 legislation targets through implementation of screening tables in the review process. The impacts of the each GPA No. 960 policy and map changes are discussed further in various relevant EIR sections.

LU-6.2: *Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes and the California Green Builder Program.*

LU-6.3: *Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.*

Discussion: GPA No. 960 includes new GHG reduction measures that would substantially lessen the GHG emissions and cumulative impacts. Many of the reduction strategies that are applicable to the new development projects in Riverside County are consistent with U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes and the California Green Builder

Program. The screening tables for GHG implementation measures in the proposed Climate Action Plan (CAP) include reduction guidelines for new residential developments and deals with various topics from insulations and appliances to renewable energies and water efficiency.

The above analysis indicates that implementation of GPA No. 960, would be consistent with the land use and housing policies of the SCAG Regional Plan. The proposed project and updated General Plan does not contain any policies that would contradict the SCAG Regional Plan or impede implementation of its policies.

2. Open Space and Habitat – Natural Lands Action Plan

OSN-12: *Local governments should track and monitor open space conservation by:*

- *Considering the most recent annual report on open space conservation in planning and evaluating projects and programs in areas with regionally significant open space resources.*
- *Ensuring consistency with the open space conservation policies and goals of the Regional Comprehensive Plan.*

OSN-13: *Local governments should develop and implement mitigation for open space impacts by:*

- *Promoting coordinated mitigation programs for regional projects and establish the basis for inter-regional conservation strategies.*
- *Planning development in locations least likely to cause environmental impact.*

OSN-14: *Developers and local governments should implement mitigation for open space impacts through the following activities:*

- *Individual projects should either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts through measures consistent with regional open space policies for conserving natural lands, community open space and farmlands. All projects should demonstrate consideration of alternatives that would avoid or reduce impacts to open space.*
- *Individual projects should include into project design, to the maximum extent practicable, mitigation measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not limited to FHWA's Critter Crossings and Ventura County Mitigation Guidelines.*
- *Project-level mitigation for RTP's significant cumulative and growth-inducing impacts on open space resources will include but not be limited to the conservation of natural lands, community open space and important farmland through existing programs in the region or through multi-party conservation compacts facilitated by SCAG.*
- *Project sponsors should ensure that transportation systems proposed in the RTP avoid or mitigate significant impacts to natural lands, community open space and important farmland, including cumulative impacts and open space impacts from the growth associated with transportation projects and improvements.*
- *Project sponsors should fully mitigate direct and indirect impacts to open space resulting from implementation of regionally significant projects.*

Discussion: The current General Plan Multipurpose Open Space Element Chapter contains policies and plans to ensure conservation of regionally significant open space resources and contains policies to fully mitigate impacts to open space resulting from regionally significant projects. Since the adoption of the Riverside County General

Plan in 2003, the County of Riverside has been vigorously implementing the Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP) which focuses on protecting 146 native species of plants and animals with their habitats while balancing growth and new development pressures. Riverside County, through the Regional Conservation Authority (RCA), is actively acquiring and preserving habitats for preservation. In 2007, the Coachella Valley Association of Governments (CVAG) adopted a similar conservation plan for the Coachella Valley Region of Eastern Riverside County named, the "Coachella Valley Multiple Species Habitat Conservation Plan" (CV-MSHCP). The two MSHCPs are comprehensive and multi-jurisdictional. They focus on the conservation of species, associated habitats and linkages to provide mitigation for the impacts of development in Riverside County. Together, the MSHCPs afford the County of Riverside the ability to manage local land use decisions and maintain economic development flexibility, while providing a coordinated conservation system and reserve implementation program.

As part of GPA No. 960, lands acquired by RCA in recent years are all changed to the General Plan land use designation of Open Space-Conservation Habitat (OS-CH). This designation aids in ensuring these lands are appropriately conserved for their biological functions and values. To the extent the project would have adverse effects on open space, these are discussed in Section 5.2.B (Significant Irreversible Environmental Changes) and, in particular, summarized in Table 5.2-A (Open Space Areas Proposed for Future Development Uses). Sections 4.8 (Biological Resources) and 4.16 (Parks and Recreation) in this EIR also discuss open space. Between the policies of the General Plan, particularly in the Multipurpose Open Space and Conservation Element, and the open space conservation achieved through implementation of the WR- and CV-MSHCPs, Riverside County's operations are consistent with the SCAG Regional Comprehensive Plan. Further, GPA No. 960 does not propose policies contradicting the SCAG Regional Plan nor would any of its proposals impede implementation of these SCAG open space policies.

3. Open Space and Habitat – Community Open Space Action Plan

OSC-7: *Local governments should prepare a Needs Assessment to determine the adequate community open space level for their areas.*

OSC-8: *Local governments should encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.*

OSC-9: *Developers and local governments should increase the accessibility to natural areas lands for outdoor recreation.*

OSC-10: *Developers and local governments should promote infill development and redevelopment to revitalize existing communities.*

OSC-11: *Developers should incorporate and local governments should include land use principles, such as green building, that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms.*

OSC-12: *Developers and local governments should promote water-efficient land use and development.*

OSC-13: *Developers and local governments should encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.*

Discussion: The proposed Multipurpose Open Space Element Chapter of the General Plan includes new policies and plans to ensure accessibility to natural areas. GPA No. 960 proposes new trail network plans and policies to provide for an improved quality of life and access to natural open spaces for Riverside County residents. For instance in Lakeview/Nuevo and Reche Canyon/Badlands Area Plans, the new trail network

provides access points and routes within the Lake Perris State Recreation Area which does not exist in the existing General Plan. GPA No. 960 also includes proposed polices in water-efficient landscaping and development to bridge the gap between water supply and demand. For example, the proposed Open Space Element Policy 2.1 includes, "Implement a water-efficient landscape ordinance and corresponding policies that promote the use of water-efficient plants and irrigation technologies, minimizes the use of turf and reduces water-waste without sacrificing landscape quality". The policy also is accompanied by several implementation measures as outlined in the Appendix K-1 of the General Plan (AI 3, 57, 57B, 58, 62). Water efficient landscaping policies are included in both Land Use and Multipurpose Open Space Elements. These policies serve to reduce water-waste. The impact of GPA No. 960 is discussed further in EIR Section 4.14 (Mineral Resources). Riverside County will continue to implement and monitor existing ordinances and General Plan policies to reduce impacts from future development proposals.

The above analysis indicates that implementation of GPA No. 960 would be consistent with the open space and habitat policies of the SCAG Regional Plan. GPA No. 960 does not propose any General Plan policies or changes that would contradict the SCAG Regional Plan or impede implementation of its policies.

4. Open Space and Habitat – Agricultural Lands Action Plan

OSA-5: *Promote the availability of locally grown and organic food in the region.*

- *Local governments should establish transfer of development rights (TDR) programs to direct growth to less agriculturally valuable lands (while considering the potential effects at the sites receiving the transfer) and ensure the continued protection of the most agriculturally valuable land within each county through the purchase of the development rights for these lands.*
- *Local governments should consider other tools for the preservation of agricultural lands such as eliminating estates and ranchettes and clustering to retain productive agricultural land.*
- *Local governments should ease restrictions on farmer's markets and encourage cooperative farming initiatives to increase the availability of locally grown food.*
- *Local governments should consider partnering with school districts to develop farm-to-school programs.*

OSA-7: *Local governments should avoid the premature conversion of farmlands by promoting infill development and the continuation of agricultural uses until urban development is imminent; if development of agricultural lands is necessary, growth should be directed to those lands on which the continued viability of agricultural production has been compromised by surrounding urban development or the loss of local markets.*

Discussion: The Land Use, Administration and Healthy Communities Elements of the Riverside County General Plan include policies and plans to protect viable farmlands, manage agricultural lands in a growth pressured areas and encourage farmers markets. The impacts of GPA No. 960 on agricultural resources are discussed further in Section 4.5 (Agricultural and Forestry Resources) of this EIR. Despite programs that address the premature conversion of agricultural lands to urbanizing uses, Section 4.5 concludes that future developments accommodated by the land use and policies of the proposed General Plan Amendment could indirectly lead to the conversion of designated farmlands thus the impact of the project was found to be significant and unavoidable. Loss of agricultural lands to non-agricultural land uses designation is an indirect contributing factor of farmland conversion thus affecting the region as a whole and making the impact significant and unavoidable. Nonetheless, GPA No. 960 is consistent with the open space and habitat policies of the SCAG Regional

Comprehensive Plan and does not contain policies that would contradict the Regional Plan or impede implementation of its policies.

5. Water Action Plan

WA-9: *Developers and local governments should consider potential climate change hydrology and resultant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health.*

WA-10: *Developers and local governments should include conjunctive use as a water management strategy when feasible.*

WA-11: *Developers and local governments should encourage urban development and land uses to make greater use of existing and upgraded facilities prior to incurring new infrastructure costs.*

WA-12: *Developers and local governments should reduce exterior uses of water in public areas and should promote reduced use in private homes and businesses, by shifting to drought-tolerant native landscape plants (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use and installing related water pricing incentives.*

WA-13: *Developers and local governments should protect and preserve vital land resources – wetlands, groundwater recharge areas, woodlands, riparian corridors and production lands. The federal government's "no net loss" wetlands policy should be applied to all of these land resources.*

WA-14: *Local governments should amend building codes to require dual plumbing in new construction and provide incentives for plumbing retrofits in existing development, to enable the safe and easy use of recycled water in toilets and for landscaping.*

WA-15: *Local governments should amend ordinances as necessary to allow municipal and private outdoor use of recycled water for all parks, golf courses and outdoor construction needs.*

WA-18: *Local governments should create stable sources of funding for water and environmental stewardship and related infrastructure sustainability, including purchase and implementation of green infrastructure.*

WA-20: *Local governments should use both market and regulatory incentive mechanisms to encourage "water wise" planning and development, including streamlining and prioritizing projects that minimize water demand and improve water use efficiencies.*

WA-21: *Local governments should develop comprehensive partnership approaches to remove and prevent water impairments, replacing the existing regulatory command and control approach that has created delays and distrust.*

WA-22: *Local governments should create opportunities for pollution reduction marketing and other market-incentive water quality programs.*

WA-23: *Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage runoff flows caused by storms and impervious surfaces.*

WA-24: *Local governments should prevent development in flood hazard areas lacking appropriate protections, especially in alluvial fan areas.*

WA-25: *Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances.*

Discussion: The proposed Land Use, Administration, Safety and Multipurpose Open space Elements of the General Plan include policies and plans to ensure protection of viable water sources and wetlands, availability of water and its infrastructures, and reduction of water related hazards. GPA No. 960 adds stronger water-efficient landscape polices to ensure implementation of water-efficient plants and irrigation technologies to minimize water waste. Other policies regarding water quality and groundwater recharge have also been modified in the General Plan to include strategies incorporating "Low Impact Development" and other Best Management Practices. The new Water Resources section of the Land Use Element includes policies that address the issues between the water supply and demand in Riverside County while protecting natural resources of wetlands, arroyos and riparian corridors. In addition, GPA No. 960 includes most up-to-date countywide 100-year flood hazard zone maps and policies to limit potentially hazardous development and to require appropriate protections for such developments.

In addition, the current development review process adheres to the existing regulations at both the state and federal level. The California Water Code establishes the control of almost every aspect of water resource management within the state as a response to federal laws mandating state involvement. Counties must operate within the regulations established in the California Water Code in addition to other regulations such as the Clean Water Act, Federal Water Pollution Act, Water Conservation in Landscaping Act, and Urban Water Management Planning Act. With the existing federal, state and county regulations, as well as existing and proposed General Plan policies that will help ensure resources are appropriately identified and protected, GPA No. 960 is consistent with SCAG's Regional Water Action Plan policies. See EIR Sections 4.11, 4.17 and 4.19 for further discussion on project impacts in these areas.

The above analysis indicates that implementation of GPA No. 960 would be consistent with the water policies of the SCAG Regional Plan. Further, GPA No. 960 does not contain policies that would contradict the Regional Plan or impede implementation of its policies.

6. Energy Action Plan

EN-8: *Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms:*

- *Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure.*
- *Land use and planning strategies to increase biking and walking trips.*

EN-9: *Local governments should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. SCAG recommends the use of Appendix F, Energy Conservation, of the California Environmental Quality Act.*

EN-10: *Developers and local governments should integrate green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes and the California Green Builder Program. Energy saving measures that should be explored for new and remodeled buildings include:*

- *Using energy efficient materials in building design, construction, rehabilitation and retrofit.*
- *Encouraging new development to exceed Title 24 energy efficiency requirements.*

- *Developing Cool Communities measures including tree planting and light-colored roofs. These measures focus on reducing ambient heat, which reduces energy consumption related to air conditioning and other cooling equipment.*
- *Utilizing efficient commercial/residential space and water heaters: This could include the advertisement of existing and/or development of additional incentives for energy efficient appliance purchases to reduce excess energy use and save money. Federal tax incentives are provided online at http://www.energystar.gov/index.cfm?c=Products.pr_tax_credits.*
- *Encouraging landscaping that requires no additional irrigation: utilizing native, drought tolerant plants can reduce water usage up to 60% compared to traditional lawns.*
- *Encouraging combined heating and cooling (CHP), also known as cogeneration, in all buildings.*
- *Encouraging neighborhood energy systems, which allow communities to generate their own electricity.*
- *Orienting streets and buildings for best solar access.*
- *Encouraging buildings to obtain at least 20% of their electric load from renewable energy.*

EN-11: *Developers and local governments should submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, for any project anticipated to require substantial utility consumption. Any infrastructure improvements necessary for project construction should be completed according to the specifications of the energy provider.*

EN-12: *Developers and local governments should encourage that new buildings are able to incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources.*

EN-13: *Local governments should support only the use of the best available technology including monitoring, air and water impacts for locating any nuclear waste facility.*

EN-14: *Developers and local governments should explore programs to reduce single occupancy vehicle trips such as telecommuting, ridesharing, alternative work schedules and parking cash-outs.*

EN-15: *Utilities and local governments should consider the most cost-effective alternative and renewable energy generation facilities.*

EN-16: *Local governments and project implementation agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:*

- *Encouraging investment in transit, including electrified light rail.*
- *Expanding light-duty vehicle retirement programs.*
- *Increasing commercial vehicle fleet modernization.*
- *Implementing driver training module on fuel consumption.*
- *Replacing gasoline powered mowers with electric mowers.*
- *Reducing idling from construction equipment.*
- *Incentivizing alternative fuel vehicles and equipment.*

- *Developing infrastructure for alternative fueled vehicles.*
- *Increasing use and mileage of High Occupancy Vehicle (HOV), High Occupancy Toll (HOT) and dedicated Bus Rapid Transit (BRT) lanes.*
- *Implementing truck idling rule, devices and truck-stop electrification.*
- *Requiring electric truck refrigerator units.*
- *Reducing locomotives fuel use.*
- *Modernizing older off-road engines and equipment.*
- *Implementing cold ironing at ports.*
- *Encouraging freight mode shift.*
- *Limit use and develop fleet rules for construction equipment.*
- *Requiring zero-emission forklifts.*
- *Developing landside port strategy: alternative fuels, clean engines, electrification*

EN-19: *Subregional and local governments should explore participation in energy efficiency programs provided by their local utility such as the Ventura Regional Energy Office, South Bay Energy Savings Center and the San Gabriel Valley Energy Wise program. These programs can offer customized incentives and public awareness campaigns to reduce energy consumption.*

EN-20: *Local governments should employ land use planning measures, such as zoning, to improve jobs/housing balance and creating communities where people live closer to work, bike, walk and take transit as a substitute for personal auto travel.*

Discussion: The proposed updates to the General Plan's Land Use, Circulation and Air Quality Elements include policies and plans to reduce pollution and fossil fuel consumption through innovative measures designed to improve energy efficiency and energy conservation. There are also planning policies and strategies in the General Plan to integrate green building measures, encourage Transit Oriented Development (TOD) and achieve an appropriate balance between jobs and housing. For example, the updated comprehensive trails maps for Riverside County provide a network of connectivity that would increase the use of non-motorized transportation system. Additions to the Air Quality Element address greenhouse gases, but in doing so also provide strategies, regulations and policies applicable to all public and private residential, commercial, industrial and institutional developments.

The above analysis indicates that implementation of GPA No. 960 would be consistent with the energy policies of the SCAG Regional Plan. Further, GPA No. 960 does not propose any General Plan policies or changes that would contradict the SCAG Regional Plan or impede implementation of its policies. For additional details on the environmental impacts of the project in regards to energy, see Section 4.18 (Transportation and Circulation). The topic is also addressed in Section 4.7 (Greenhouse Gases), particularly as it relates to the energy conservation measures that would aid in achieving county greenhouse gas reduction goals.

7. Air Quality Action Plan

AQ-5: *Local governments should implement control measures from local Air Quality Management Plans (AQMPs) such as accelerating the turnover of older, more polluting mobile and stationary source equipment using AB 2766 funding per the State Implementation Plan (SIP).*

AQ-6: *Local governments should support and pursue environmentally sustainable strategies that implement and complement climate change goals and outcomes such as updating their General Plans to help address the State's AB 32 mandate. This should be consistent with state guidelines and requirements.*

AQ-7: *Local governments should develop policies that discourage the location of sensitive receptors that expose humans to adverse air quality impacts such as amending General Plans, zoning ordinances, business licensing and related land use permitting processes to minimize human health impacts from exposure of sensitive receptors to local sources of air pollution. Jurisdictions should consider applicable guidance documents, such as ARB's Air Quality and Land Use Handbook: A Community Health Perspective and the South Coast AQMD's Guidance Document for Addressing Air Quality Issues.*

AQ-8: *Local governments should practice and promote sustainable building practices by:*

AQ-8.1: *Updating their General Plans and/or zoning ordinances to promote the use of green building practices, which include incorporating LEED design standards and utilizing energy efficient, recycled-content and locally harvested or procured materials.*

AQ-8.2: *Developing incentive programs (e.g., density bonuses) to encourage green building and resource and energy conservation in development practices.*

AQ-8.3: *Adopting policies that strive for carbon neutrality for their own facilities and operations.*

Discussion: GPA No. 960 proposes changes to the Land Use, Circulation and Air Quality Elements of the Riverside County General Plan that include policies and plans to pursue environmentally sustainable strategies in achieving AB 32 goals and to promote sustainable building practices such as encouraging green building practices. Further, GPA No. 960 includes a technical study with GHG Emission inventories and emission reduction target plans as mandated by AB 32. This is the first step toward implementing workable policies that would achieve AB 32 visions and goals. The implementation measures with detailed screening tables of the aforementioned technical study will guide Riverside County's development review process in obtaining reduction targets.

The above analysis indicates that implementation of GPA No. 960, would be consistent with the air quality policies of the SCAG Regional Plan. Further, GPA No. 960 does not propose any General Plan policies or changes that would contradict the SCAG Regional Plan or impede implementation of its policies. For additional details on the environmental impacts of the project in regards to air quality, see Section 4.6 (Air Quality).

8. Solid Waste - Action Plan

SW-9: *Local governments should update general plans to reflect solid waste sustainability issues such as waste reduction goals and programs.*

SW-10: *Local governments should discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.*

SW-11: *Local governments should discourage exporting of locally generated municipal solid waste (destined for landfills) outside of the SCAG region. Disposal within the county where the waste originates should be encouraged as much as possible, when appropriate. Green technologies for long-distance transport of waste (e.g., clean engines, clean locomotives or electric rail for waste-by-rail disposal systems) and consistency with AQMP and RTP policies should be required.*

SW-12: *Local governments should maximize waste diversion goals and practices and look for opportunities for voluntary actions to exceed the 50% waste diversion target.*

SW-13: *Local governments should build local markets for waste prevention, reduction and recycling practices.*

SW-14: *Developers and local governments should integrate green building measures into project design and zoning including, but not limited to, those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, Energy Star Homes, Green Point Rated Homes and the California Green Builder Program. Construction reduction measures to be explored for new and remodeled buildings include:*

- *Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities.*
- *An ordinance that requires the inclusion of a waste management plan that promotes maximum C&D diversion.*
- *Source reduction through (1) use of building materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed building materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring, unfinished ceilings, etc.).*
- *Reuse of existing building structure and shell in renovation projects. Building lifetime waste reduction measures that should be explored for new and remodeled buildings include:*
- *Development of indoor recycling program and space.*
- *Design for deconstruction.*
- *Design for flexibility through use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable components.*

SW-15: *Local governments should develop ordinances that promote waste prevention and recycling such as: requiring waste prevention and recycling efforts at all large events and venues; implementing recycled content procurement programs; and instituting ordinances to divert food waste away from landfills and toward food banks and composting facilities.*

SW-16: *Local governments should support environmentally friendly alternative waste management strategies such as composting, recycling and conversion technologies.*

SW-17: *Developers and local governments should develop and site composting, recycling and conversion technology facilities that are environmentally friendly and have minimum environmental and health impacts.*

SW-18: *Developers and local governments should coordinate regional approaches and strategic siting of waste management facilities.*

SW-19: *Developers and local governments should facilitate the creation of synergistic linkages between community businesses and the development of eco-industrial parks and materials exchange centers where one entity's waste stream becomes another entity's raw material by making priority funding available for projects that involve co-location of facilities.*

SW-20: *Developers and local governments should prioritize siting of new solid waste management facilities including recycling, composting and conversion technology facilities near existing waste management or material recovery facilities.*

SW-21: *Local governments should increase education programs to increase public awareness of reuse, recycling, composting and green building benefits and raise consumer education issues at the county and city level and if appropriate, at local school districts and education facilities.*

Discussion: GPA No. 960 does not include new land use policies or plans that are directly related to SCAG's Solid Waste Action Plan. Indirectly, however, GPA No. 960 does include a screening table for GHG reduction target implementation strategies which promote diversion of solid waste through recycling and site composting. The current policies in place with the Riverside County Solid Waste Management Plan will ensure that the solid waste sustainability issues are addressed appropriately. The full impact of the proposed General Plan in relation to solid waste management is discussed further in Section 4.15.3 (Solid Waste Management) of this EIR.

Overall, the above analysis indicates that implementation of GPA No. 960 would be consistent with the solid waste policies of the SCAG Regional Plan. Further, GPA No. 960 does not propose any General Plan policies or changes that would contradict the SCAG Regional Plan or impede implementation of its policies.

9. Other Action Plans in the SCAG Regional Comprehensive Plan

Transportation Action Plan, Security and Emergency Preparedness Action Plan and the Economy Action Plan in the Regional Comprehensive Plan contain only policies that affect SCAG directly. As none are applicable to the proposed project or updated General Plan, they are not further discussed here. For a discussion of the project's relationship to the SCAG Regional Transportation Plan (a separate plan from the RCP), see Section 4.18 (Transportation and Circulation). Emergency preparedness at the General Plan level is discussed in Section 4.13 (Hazardous Materials and Safety).

10. Regional Consistency Conclusions

GPA No. 960 includes ample policies that are consistent in achieving the goal outlined by SCAG's Regional Plan, which is to "foster a Southern California region that addresses future needs while recognizing the interrelationship between economic prosperity, natural resource sustainability and quality of life." A number of policies existing in the General Plan or proposed as part of GPA No. 960 are either identical or supplemental to the action plans items in the SCAG Regional Plan. Taken together, the above analyses indicate that implementation of GPA No. 960 would be consistent with the applicable policies of the SCAG Regional Plan. Further, GPA No. 960 does not contain policies that would contradict the SCAG Regional Plan or that would impede implementation of its policies.

D. SCAG Compass Southern California

In June 2004, SCAG issued a Growth Vision Report for its "Compass Southern California," to encapsulate its "growth visioning" efforts throughout the region. The underlying goal of this effort is to "make the SCAG region a better place to live, work and play for all residents regardless of race, ethnicity or income." Towards this

end, four "growth visioning principles" were developed to "promote and maximize regional mobility, livability, prosperity and sustainability." These are outlined, below.

1. SCAG Compass Principles

As a constituent member of SCAG, the County of Riverside is also working toward furthering these same quality of life goals for its residents and visitors. The General Plan is Riverside County's chief tool in guiding the region's growth in achieving these goals. For each of these SCAG principles and associated policies, a discussion is provided on how the proposed project relates to both Riverside County's General Plan and its use as a tool in accomplishing these universal principles.

Principle 1: Improve mobility for all residents.

- Encourage transportation investments and land use decisions that are mutually supportive.
- Locate new housing near existing jobs and new jobs near existing housing.
- Encourage transit-oriented development.
- Promote a variety of travel choices.

Discussion: The existing Riverside County General Plan contains numerous policies and directives that focus on improving mobility. In particular, the Circulation Element contains circulation plans and policies aimed at ensuring an efficient transportation system is developed and maintained within Riverside County. It also coordinates with the Land Use Element in addressing, and encouraging, transit-oriented development, trails networks, pedestrian connectivity and walkability in communities. Changes included in GPA No. 960 would further this effort by refining and improving circulation network plans, as well as by revamping the trails network map and standards. As such, GPA No. 960 is consistent with Compass Principle #1 and does not conflict with the policies stated above.

Principle 2: Foster livability in all communities.

- Promote infill development and redevelopment.
- Promote developments that provide a mix of uses.
- Promote "people-scaled," pedestrian-friendly communities.
- Support the preservation of stable, single-family neighborhoods.

Discussion: The Land Use Element of the existing Riverside County General Plan contains numerous policies and directives for promoting mixed use, infill development and pedestrian-friendly communities. The new Rural Village Overlays for Meadowbrook and Good Hope, as well as the Lakeland Village plans, would further improve the plans for future development in these urbanizing areas, including infill amongst existing uses. Similarly, removing study areas from rural communities not fully ripe for urbanization would further ensure infill and urban development continues to be concentrated in the more developed portions of Riverside County. GPA No. 960 also includes a new Lakeview Mountains Policy Area that would further emphasize the development of a pedestrian-friendly community through the principles of "new urbanism" and incorporate a trails network that

would connect urban uses within the community to public open space areas. GPA No. 960 is consistent with Compass Principle #2 and does not conflict with the policies stated above.

Principle 3: Enable prosperity for all people.

- Provide a variety of housing types in each community to meet the housing needs of all income levels.
- Support educational opportunities that promote balanced growth.
- Ensure environmental justice regardless of race, ethnicity or income class.
- Support local and state fiscal policies that encourage balanced growth.
- Encourage civic engagement.

Discussion: The existing Riverside County General Plan contains numerous policies and directives aimed at ensuring an appropriate mix of housing, including housing for all income levels, is provided within Riverside County. The General Plan Housing Element addresses this issue in detail. Policies throughout the General Plan, and particularly in the Land Use Element, address the need for providing balanced growth. GPA No. 960 would ensure this continues to be the case. As such, GPA No. 960 is consistent with Compass Principle #3 and does not conflict with the policies stated above.

Principle 4: Promote sustainability for future generations.

- Preserve rural, agricultural, recreational and environmentally sensitive areas.
- Focus development in urban centers and existing cities.
- Develop strategies to accommodate growth that use resources efficiently, eliminate pollution and significantly reduce waste.
- Utilize "green" development techniques.

Discussion: The Multipurpose Open Space Element of the existing Riverside County General Plan contains numerous policies and directives designed to ensure that Riverside County's natural and open space resources are preserved and protected. It also addresses the conservation of energy, water and other resources. The Land Use Element contains policies to focus development in urban centers, community centers and other appropriate areas. As part of GPA No. 960, the General Plan's Air Quality Element would be revised to address the reduction of greenhouse gas emissions through energy conservation, alternative energy use, and a variety of "green" development techniques. As such, GPA No. 960 is consistent with Compass Principle #4 and does not conflict with the policies stated above.

2. SCAG Regional Consistency Conclusion

Overall, the above analysis indicates that implementation of the updated General Plan, as amended pursuant to GPA No. 960, would be consistent with the policies of the SCAG Compass Southern California program, including its "Growth Visioning" principles. The proposed project and updated General Plan does not contain

any policies contradict these principles nor any that would impede implementation of its policies or attainment of its goals.

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Section 6.0

Alternatives Analysis

Section 6.0 Alternatives Analysis

6.1 Introduction

One of the cornerstone functions of CEQA is that it "establishes a duty for public agencies to avoid or minimize environmental damage where feasible" (California Code of Regulations [CCR] Section 15021(a)). Accordingly the State CEQA Guidelines (CCR Section 15021(a)(2)) specify that, "A public agency should not approve a project as proposed if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment."

The second part of this directive is met by Sections 4.2 through 4.19 of this EIR, which address a wide variety of environmental issues and include mitigation measures where feasible to lessen identified significant impacts. The first part of this directive, to identify "feasible alternatives" to the project, is addressed here. This section sets forth the criteria used to develop a "reasonable range of alternatives" and then analyzes the resultant alternative scenarios. Lastly, Section 6.0 concludes with an assessment of the "environmentally superior alternative" and analysis of each alternative's ultimate feasibility compared to that of the proposed project, GPA No. 960.

6.2 Selection of Alternatives

This subsection addresses the criteria used in establishing the range of alternatives to be analyzed.

A. CEQA Standards

The State CEQA Guidelines (CCR Section 15126.6(a)) specify that an EIR "shall describe a range of reasonable alternatives to the project" that would, "Feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the proposed project, and evaluate the comparative merits of the alternatives." In regards to the selection of alternatives to be analyzed, it goes on to further specify that:

> *"An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation." "There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."*

Accordingly, CCR Section 15126.6(c) outlines the criteria for the "selection of a range of reasonable alternatives." It specifies that they shall include those that could do both of the following:

1. "Feasibly accomplish most of the basic objectives of the project."

2. "Avoid or substantially lessen one or more of the [project's] significant effects."

The discussion below sets out the selection factors that apply according to these conditions. First, the project's objectives are reiterated. Second, project impacts found to be significant in Section 4.0 are summarized and assessed for their relevance to the selection of alternatives.

B. Project Objectives

As noted in Section 3.0 (Project Description), the Riverside County General Plan is intended to be a blueprint for Riverside County's future. It describes the future growth and development planned within Riverside County over the long-term. Among its many features, the 2003 RCIP General Plan (as amended) includes a "Certainty System," designed to limit drastic changes to key land use patterns. (Specifically, it limits the redesignation of land uses to densities or intensities beyond those permitted by the "Foundation" established for a given parcel. See General Plan pages LU-38 to LU-42 for details.)

Also under the Certainty System, the County of Riverside is required to periodically review the General Plan and examine whether the established Foundation and land use designations remain appropriate. The first review was triggered five years after the 2003 adoption of the RCIP General Plan. Per the current General Plan Administrative Element, subsequent reviews are to occur every eight years thereafter. Thus, the primary goal of GPA No. 960 is to comprehensively review and update the County General Plan so that it continues to provide a clear, relevant and consistent set of directions for implementing the County Vision, General Plan Elements and individual Area Plans over the next eight years and into the future. A detailed description of the proposed updates, revisions and changes encompassed by this project, as permitted under the Certainty System, is provided in Section 3.0 of this EIR.

Pursuant to the Certainty System (and condensed from those set forth in Section 3.0), the proposed project, GPA No. 960, was undertaken to achieve the following objectives:

- Assess General Plan progress and issues related to its implementation: Ensure that the General Plan continues to provide a clear and consistent set of directions for implementing the Riverside County Vision throughout Riverside County over the next five to ten years and into the future (2035 and beyond).

- Initiate necessary changes among Foundation Components within the General Plan: Ensure that the land use direction and planned intensities remain appropriate for their given locations. Likewise, ensure that Policy Areas, Study Areas and Overlays throughout Riverside County continue to plan for coordinated development at appropriate intensities in the manner envisioned in the General Plan.

- Develop policy, entitlement and technical amendments, as warranted: Update or correct mapping items in the General Plan found to be inconsistent or inappropriate. Ensure that resource maps and other data-based information in the General Plan accurately reflect current data. Update the General Plan to accurately reflect current statutes, regulations and policies of the County of Riverside and applicable outside agencies. Update General Plan policies where necessary to reflect these items and to provide additional guidance where found to be necessary.

- Update future projections: Extend planning projections another five to ten years into the future and adjust the General Plan to accommodate previously unanticipated needs.

- Reassess the General Plan's Vision and Planning Principles: Recommit to and further the General Plan Vision and Planning Principles through the addition of policies and plans that expand upon them.

The manner in which these objectives were used in the selection of alternatives is discussed further below.

C. Significant Environmental Effects Associated With the Project

As outlined in Table 1.0-B of Section 1.0 (Summary), implementation of the General Plan pursuant to the changes proposed by GPA No. 960 would be associated with a number of significant and unavoidable environmental impacts. The various significant effects are briefly summarized in Table 5.0-A (Unavoidable Significant Environmental Effects) in Section 5.0 (Additional Required CEQA Topics). The analysis provided in Sections 4.2 through 4.19 of the EIR determined that the following impacts would remain significant even after the imposition of all feasible mitigation, namely: loss of State-designated farmlands and agricultural encroachment; short-term and long-term emissions of air pollutants, cumulative air pollutant impacts and exposure of sensitive receptors to air pollutants; exposure to excessive noise levels, as well as increases in both temporary and permanent ambient noise levels; increased traffic; insufficient water supplies, groundwater depletion and overdraft; and, lastly, a host of cumulative and growth-inducing impacts. See Tables 5.0-A and 5.0-B for full listings.

D. Screening of Possible Alternatives

The range of alternatives required in an EIR is governed by a "rule of reason" (CCR Section 15126.6(f)) that requires the EIR need only "set forth those alternatives necessary to permit a reasoned choice" among those alternatives that could "feasibly attain most of the basic objectives of the project" and would "avoid or substantially lessen any of the significant effects of the project."

1. Criteria for Project Objectives

Accordingly, the following criteria were used to ascertain if a proposed alternative sufficiently addressed the objective listed.

- **Further Progress:** An alternative would successfully meet this objective if it ensures the General Plan remains suitable as a plan for the coordination of future growth within Riverside County (for example, provides additional policies and plans, such as new Rural Village Overlays, where warranted to appropriately handle emerging growth patterns).

- **Update Land Use:** An alternative would successfully meet this objective if it provides updates to land use designations and Foundational components where necessary to ensure that the General Plan remains suitable as a plan for the coordination of future growth within Riverside County (for example, change mapped land use designations [LUDs] and Foundations where warranted to appropriately handle emerging growth patterns).

- **Update Technical Data:** An alternative would successfully meet this objective if it provides updates to General Plan's technical information (e.g., resource mapping, regulations, demographics and statistics, etc.) where necessary to ensure that the General Plan continues to accurately reflect the current environmental, regulatory, socioeconomic and development status of Riverside County (for example, updating General Plan maps to reflect newly released mineral data from the State of California and adding a forest resources map to better coordinate with new CEQA policies addressing forest resources).

- **Address New Needs:** An alternative would successfully meet this objective if it provides updates to the General Plan that enable it to appropriately plan, coordinate and implement new policies and programs necessitated by regulatory changes or by previously unanticipated needs (for example, adding greenhouse gas and climate change policies to the General Plan Air Quality Element in response to California State directives aimed at reducing carbon emissions).

- **Further County Vision:** An alternative would successfully meet this objective if the changes it proposes serve to enhance and extend the continued progress of the General Plan in achieving the long-range goals established in the Riverside County Vision (for example, the addition of the "Healthy Communities" Element to the General Plan to encourage healthy living enabled by appropriate patterns of development).

2. Range of Project Alternatives

Accordingly, a range of possible alternatives were developed to reflect the above project objectives and project significant impacts. The selection process is summarized in Table 6.0-A (Screening Table for Alternatives Considered), below, for the following basic alternative proposals.

Added Community Centers Alternative: This alternative addresses the effects of growth and development pressure by proposing to transfer development intensity planned for lands identified for future open space conservation into a series of additional community centers along transportation corridors. The overall number of residential units projected for unincorporated Riverside County would remain the same, but their locations, and possibly their densities, would change.

Agricultural Emphasis Alternative: This alternative addresses the effects of development pressure on agricultural resources by proposing a scenario in which removal of land from the Agricultural Foundation would only be allowed every eight years. Within the Eastern Coachella Valley Area Plan, future conversions would be limited to 50% of the proposed site; the remainder of the site would be required to be placed into permanent agricultural easements.

Reduced Rural Villages Alternative: This alternative would be similar to the changes to Rural Village Overlays (RVOs) proposed under GPA No. 960 in terms of eliminating RVO study areas (RVOSAs). However, it would also include additional reductions in development potential through the deletion of the two new RVOs proposed as part of GPA No. 960. Specifically, both the existing "Study Area" designations and the proposed new RVOs for the Good Hope and Meadowbrook areas would be deleted. Land uses would remain in their existing LUDs, with no alternative development potential added through the RVO overlay function. Unlike GPA No. 960, it would also omit several Policy Areas (either existing or proposed under GPA No. 960) that provide for future urbanization within specific areas, including in Anza in the hills of southern Riverside County and the Vista Santa Rosa region in the Coachella Valley, among others.

Green Economy Alternative: This alternative would entail revisions to the General Plan to encourage the development and utilization of the green (renewable) energy resources available in unincorporated Riverside County (e.g., wind, solar and geothermal). It would allow the transfer of development density/intensity from lands of high fire hazard into areas with alternative energy availability. The overall number of residential units and business uses (commercial and industrial) projected for unincorporated Riverside County would remain the same, but their locations, and possibly their densities, would change.

No Build/No Growth Alternative: This alternative is one type of "no project" scenario addressed by CEQA for comparison purposes. It would entail no growth occurring at all within unincorporated Riverside County (i.e.,

the County of Riverside would not approve any additional development applications). The only growth occurring in Riverside County would be within its cities, which are assumed to build out according to their General Plans. As a result, the environmental baseline of Riverside County would be preserved in many areas, except where adversely affected by the growing demands of the cities within Riverside County (e.g., water use, traffic generation, land annexations, etc.).

No Project/Status Quo Alternative: This alternative is the key CEQA-mandated "no project" alternative called out in CCR Section 15126.6(e). For this EIR, the scenario assumes that GPA No. 960 is not adopted and that the existing RCIP General Plan (adopted in October 2003, and as amended through 2010), remains the guiding document dictating future growth within unincorporated Riverside County. Accordingly, this alternative can also be said to represent the "status quo."

Privately Adjusted Development Alternative: This alternative would encompass the various property-owner initiated foundational General Plan Amendments proposed for the initial five-year cycle of changes. In this alternative, the General Plan would be revised to reflect the LUD and Foundation revisions proposed in a variety of prior GPAs and the existing General Plan Vision would be amended to place greater priority on property owner desires. The existing Vision's framework for development, transportation network and habitat conservation would be revised to reflect a more individual property rights-centered, less conservation-driven Vision.

Table 6.0-A: Screening Table for Alternatives Considered

Possible Alternatives [1]	Objectives Addressed	Further Progress	Update Land Use	Update Tech. Data [2]	Address New Needs [2]	Further County Vision	Impacts Addressed[3]	Agricultural	Air Quality	Noise	Transport. and Traffic	Water Supplies	Growth Inducement	Cumulative Effects	New Significant Effects?	Screening Outcome	Analyze	Reject
No Build / No Growth Alternative [4] *No build out in unincorporated Riverside County; only the cities are planned for growth*				•				o	o	o	◊[7]	◊[7]	o		◊[8]		•	
No Project / Status Quo Alternative [5,6] *Riverside County builds out per existing General Plan*				•					◊	◊	◊[7]	◊[7]		◊	◊[9]		•	
Agricultural Emphasis Alternative *Preserve agricultural lands through limits on their conversion to non-agricultural uses*				•	•			o		•	o	◊	•	◊	◊[10]		•	
Added Community Centers Alternative *Transfer development potential from Open Space to new Community Centers*		•		•	•	•		o			◊	◊		◊	◊[11]		•	
Green Economy Alternative *Transfer development potential to foster alternative energy use*		•	•	•	•	•		o			◊		◊		◊[12]		•	
Reduced Rural Villages Alternative *Eliminate the two RVOs proposed in GPA No. 960 (Good Hope and Meadowbrook RVOs)*			•	•					•	•	o	•	•	•	◊[13]		•	
Privately-Adjusted Development Alternative *Land use and General Plan Vision revised per property owner requests*				•	•													•

Footnotes:
1. See text for additional details on each of these possible alternatives.
2. Essentially, it is assumed that any alternative General Plan Amendment proposed could include these changes. Where no GPA is specifically proposed for an alternative, it is assumed that the updates indicated would occur through separate means (e.g., their own GPAs).
3. A dot (•) indicates the alternative addresses (i.e., lessens) the impact. A diamond (◊) denotes an impact that is substantially greater (worse) for the alternative than for the General Plan as updated per GPA No. 960. A circle (o) indicates the impacts would be avoided or substantially lessened under the alternative.
4. This is the "No Build" alternative mentioned in the State CEQA Guidelines (CCR Section 15126.6(e)(3)(B)).
5. This is the "No Project" alternative; its analysis is required pursuant to CEQA (i.e., see CCR Section 15126.6(e)).

6. Note, the existing General Plan includes greater future development potential than that proposed under GPA No. 960.
7. Would not accomplish improvements necessary for current or anticipated future deficiencies.
8. New significant impacts would also arise for: greenhouse gas emissions; and, energy inefficiency.
9. New significant impacts would also arise for: aesthetics/visual resources; greenhouse gas emissions; biological resources; and, energy inefficiency.
10. New significant impacts would also arise for: greenhouse gas emissions; and, energy uses (electricity and natural gas).
11. New significant impacts would also arise for: greenhouse gas emissions; and, growth effects on existing park and recreational facilities, including causing the need for new or expanded facilities.
12. New significant impacts would also arise for: aesthetics and viewshed changes; and, greenhouse gas emissions.
13. New significant impacts would also arise for: substantial indirect growth inducement in cities and adjacent counties.

Source: Riverside County Planning Department, project application and analysis from Section 6.0 of this EIR.

6.3 Rejected Alternatives

Pursuant to the State CEQA Guidelines (CCR Section 15126.6(c), the EIR must describe the "rationale for selecting the alternatives to be discussed," as well as "identify any alternatives that were...rejected as infeasible." Per this same section, factors that may be used to eliminate alternatives from "detailed consideration in an EIR" are:

- Failure to meet most of the basic project objectives.
- Infeasibility.
- Inability to avoid significant environmental impacts.

After initial analysis of each potential alternative's basic suitability, as shown in Table 6.0-A, the following alternatives were rejected for the reasons stated.

A. Privately-Adjusted Development Alternative

As described previously, this alternative would include all of the property owner-initiated General Plan Foundation amendment (GPA-F) requests made for the first periodic General Plan review and update. These foundation amendment requests were predominantly driven by individual property owners' desires and not necessarily guided by Riverside County's Vision as identified in the General Plan.

Objectives: In analyzing this proposed alternative relative to the stated project objectives (see Table 6.0-A), it was concluded that it would only satisfy two (40%) of the five outlined objectives. The attainment of these objectives would mainly be due to the fact that was assumed that components of GPA No. 960 were also to be included in this alternative (that is, the "update technical data" and "address new needs" objectives would be met through performing technical mapping, data and regulatory updates similar to those proposed for GPA No. 960). The alternative itself would not inherently address these issues without this assumption.

Environmental Impacts: Taken in its entirely, this alternative would result in uncoordinated and possibly "leap-frog" development since its items are based on individual development requests/ proposals, rather than dictated by the overarching policies, plans and development patterns established in the General Plan. As a result, build out of Riverside County according to this alternative would be estimated to result in significant adverse impacts to agriculture (loss of important farmlands), open space (development of currently vacant lands), air quality (increased air pollution), biology (loss of habitat), traffic (increased local and regional traffic), water supply (increased demand and groundwater degradation), among others. As a result, this alternative was rejected as unsuit-

able as it exacerbates, rather than eases, the significant impacts of GPA No. 960 and does not further the objectives of this update.

Consistency: This alternative would not address or provide clarity on policies of the existing General Plan for orderly and responsible growth, as GPA No. 960 proposes. The Vision Statement of the current General Plan discusses new growth patterns that follow a framework of transportation and open space corridors, with development fitting into that framework. Because of its individual request-driven nature, implementation of this alternative would promote a pattern of random sprawl and leap-frog development within Riverside County. It would not facilitate the orderly development and growth of Riverside County as identified as one of the fundamental functions of the General Plan. For all of these reasons, this alternative was found infeasible and rejected for further analysis in this EIR section. Note: these proposals are, however, still included as part of the cumulative scenario analyzed in Section 5.5 (Cumulative Impacts).

B. Offsite Alternatives

In addressing the type of "alternatives to the proposed project" to be considered, CEQA Section 15126.6(a) specifies that, "An EIR shall describe a range of reasonable alternatives to the project, *or to the location of the project*, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project" [emphasis added].

Since the scope of GPA No. 960 spans the breath of the General Plan, the "project area" is the entire unincorporated county, i.e., those lands under the jurisdictional authority of the County of Riverside and subject to the Riverside County General Plan. As such, no offsite alternatives are feasible, thus none are directly proposed or analyzed in this section.

However, it should be noted that one alternative does, in fact, *indirectly* address an offsite option. The No Build/No Growth alternative proposes a scenario in which no new development is approved in the unincorporated portions of Riverside County. As such, all development occurring in Riverside County would be within the cities, which are assumed to build out according to their individual General Plans. In addition to satisfying certain other CEQA requirements, the use of this type of "No Project" alternative allows an examination of the effects to "offsite" areas, namely the cities, as well as adjacent counties and their cities. See Section 6.4.A for the full description and analysis of the No Build/No Growth alternative.

6.4 Alternatives Analyzed

With the rejection of one potential alternative from consideration, a total of six different alternative project scenarios remain. These six were subjected to a more robust analysis to address the pros and cons of each relative to both the environment and the objectives of the proposed project, GPA No. 960. After each alternative was analyzed, the final determinations as to: a) which among them is the environmentally superior alternative; and, b) whether any among them is the preferred alternative (instead of the proposed project, GPA No. 960) for achieving build out of the General Plan. See Section 6.5 for these conclusions.

To facilitate the analysis of the alternatives, two types of "no project" alternative are addressed. They are both included in the fully analyzed alternatives even though neither of them meet more than one of the five project objectives. Among other things, the importance of these alternatives is that they inherently provide "baseline" values against which the effects of future build out can be compared. Specifically, the No Build/No Growth alternative starts with land use and demographic assumptions that are essentially the same as the baseline existing

condition assumptions used throughout the rest of this EIR. (For more background on how this was prepared, see the discussion in Section 5.5 on the "existing uses" scenario.) It then posits a future in which only the cities within Riverside County and no new development occurs in the unincorporated areas.

The importance of this scenario is that it shows how much growth and what environmental effect, for example, can be expected to occur despite any actions taken by the County of Riverside. Also, the project, GPA No. 960, and all of the other alternatives assume that the cities within Riverside County, as well as the cities and counties adjacent to Riverside County, do grow in this same fashion. As such, the effects attributable to just the cities and other non-county areas can be subtracted out from the overall effects of the project and each of the other alternatives. The results of such calculations indicate the contributions attributable solely to the unincorporated portions of Riverside County, i.e., the areas covered by the General Plan and addressed by GPA No. 960.

In a similar manner, the projections of the No Project/Status Quo alternative by definition represent the future build out associated with the existing General Plan since it assumes that the project does not occur. (Note, it is equivalent to the CURR GP scenario analyzed in Section 5.5.) The build out projections associated with this alternative also reflect the currently predicted future of Riverside County (as well as accounting for the growth/ build out of its cities and the surrounding counties, as described previously). As such, the proposed project and the other alternatives can each be compared against this scenario's outcomes to determine whether each would have greater or lesser effects compared to the existing General Plan. These plan-to-plan comparisons allow the relative merits and weaknesses of each alternative, as well as the proposed project's, to be ascertained. (The proposed project discussed in this section is generally equivalent to the GPU/GPA960 scenario analyzed in the cumulative impacts; see Section 5.5.)

Because of the importance of the two "no project" alternatives as analytical tools, they are presented first in this subsection. Following them are the remaining five alternatives. For each, a number of topics are addressed, including: the assumptions used to develop the alternative, including its starting (baseline) conditions, as well as the growth (build out) project to result; predictions for the alternative's effects on land use and socioeconomics at build out; predictions as to the severity of the alternative's expected environmental impacts (as compared to the baseline of the existing conditions in the county and region); the comparative effects of the alternative, including the severity of its environmental effects relative to the proposed project's; and the effectiveness of the alternative in meeting project objectives and its consistency with the existing General Plan's Visions and policies. And, lastly, the alternative's overall suitability for furthering the implementation and utility of the General Plan, and its overall merit relative to that of the proposed project.

General Assumptions: The alternatives developed for analysis herein were all developed from the same basic starting point. Thus, the common assumptions applied to all of alternatives are listed below. Where an alternative differs from these, they are described more fully under the specific affected alternative.

- Each alternative is based on the existing (2008) Riverside County General Plan, as amended pursuant to the alternative's unique individual revisions and changes.

- The incorporated cities within Riverside County continue to grow and build out pursuant to their individual General Plans. In order to maintain consistency among the various alternatives, no future annexations of unincorporated lands into the various cities are included in these alternatives. Also, it is assumed development within the cities' spheres of influence would occur as per the existing Riverside County General Plan, since such areas would remain part of unincorporated Riverside County.

- Within unincorporated Riverside County, the construction of necessary new or improved infrastructure will occur, as necessary to serve growing areas. This includes improvements to roadways (which would

be developed according to the 2008 countywide circulation network plan, i.e., General Plan Figure C-1), water conveyance and sewer treatment facilities, and regional flood control.

- GPA No. 960 (the proposed project) would not be approved. The technical and regulatory updates needed for the General Plan (e.g., statistical updates, resource mapping revisions, regulatory changes, etc.), however, would be adopted. No alterations to the General Plan's existing land use policies or maps would occur, other than those outlined for the given alternative.

- It is assumed that the existing General Plan is updated to discuss climate change and greenhouse gas (GHG) regulation. Unless stated otherwise for a given alternative, the draft Climate Action Plan (CAP) included with GPA No. 960 is assumed to be adopted and implemented.

- Implementation of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and the Coachella Valley MSHCP are assumed to continue.

- Riverside County DIF and TUMF programs are assumed to continue as programmed for county roadway improvements. TUMF improvements within Riverside County would reflect those identified in the existing General Plan (or alternative, as applicable).

- It is assumed that the circulation networks within Riverside County (including the cities), as well as those of the surrounding cities and counties, would generally be improved as planned for by the individual existing general plans and regionally as planned for by the 2008 Regional Transportation Plan (RTP) adopted by the Southern California Association of Governments (SCAG) to coordinate regional circulation amongst the counties and cities of Southern California (specifically, the counties of Riverside, San Bernardino, Orange, Los Angeles and Ventura, and their internal cities). Similarly, it is assumed that the state (Caltrans) and federal agencies (e.g., Federal Highway Administration, FHWA) would continue to perform improvements to the state and federal highways passing through unincorporated Riverside County.

- For the regions outside the boundaries of Riverside County, land use and demographic assumptions used are those promulgated by SCAG for the six-county region, for example, the SCAG 2012 RTP. It should be noted that both the existing General Plan and proposed updates of GPA No. 960 use and incorporate a set of socioeconomic projections developed for the county by the Riverside County Center for Demographic Research (RCCDR) and approved by the Riverside County Board of Supervisors. Known as the Riverside County Projections 2010 (RCP-10) these data are also used throughout this EIR, including in the projections of this section, where indicated. Further, these same projections are built into the RIVTAM traffic modeling performed for this project, EIR and alternatives, and were also submitted to SCAG for their use in developing the 2012 RTP, among other plans. See Section 5.6 (Regional Consistency) for a full discussion of regional plans.

A. No Build / No Growth Alternative

As stated in Section 15126.6(e) of the State CEQA Guidelines, "the purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving [or not approving] the proposed project." The section further states, "the 'no project' alternative shall discuss the existing conditions...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with the available infrastructure and community services."

Subsection 3 of these same Guidelines specifies that there are "two lines" of analysis for addressing no project alternatives. In the first, the no project alternative assumes the "continuation of the existing plan." The second includes a "No Build" scenario, "wherein the existing environmental setting is maintained." This second no project scenario is covered by the No Build/No Growth alternative discussed here. The other is addressed as the No Project/Status Quo alternative presented after this one.

Although the No Build alternative does include some "artificial assumptions" in order to "preserve the physical environment," it is nonetheless included among the alternatives considered because of its utility in providing a clear examination of the effects of future growth in the cities within Riverside County, as well as the surrounding cities and counties. It also serves to paint a clear picture of how these areas' growth will themselves affect the unincorporated portions of Riverside County, even in the absence of any other unincorporated growth. Though an admittedly extreme example, as explained above, this alternative provides a means for distinguishing the specific effects of unincorporated county growth (either as accommodated by the proposed project or as projected by one of the other alternatives) from that of the cities and surrounding jurisdictions.

1. Assumptions

For this alternative, it is assumed that the updates to the General Plan proposed under GPA No. 960 would not be adopted and no further building would occur within the unincorporated portions of Riverside County. This prohibition would compel any subsequent development to occur in the incorporated cities of the county, or in the surrounding cities and counties, shifting any regional incremental growth in population, housing or employment to those areas.

a. Additional Assumptions

The No Build alternative includes the following assumptions as part of its project description:

- No new development is approved within the unincorporated portions of Riverside County. The incorporated cities within Riverside County, however, do continue to grow and build out pursuant to their individual General Plans. In order to maintain consistency among the various alternatives, no future annexations of unincorporated lands into the various cities are included. It is also assumed no development would occur within the cities' spheres of influence since such areas would remain part of unincorporated Riverside County.

- The only growth or development assumed to occur within unincorporated Riverside County is that constructed to provide new infrastructure or improve existing infrastructure capacity, as necessary to serve the growing cities. This refers particularly to improvements to roadways, water conveyance and sewer treatment facilities, and regional flood control; that is, mainly regional projects.

- GPA No. 960 (the proposed project) would not be approved. The technical and regulatory updates needed for the General Plan (e.g., statistical updates, resource mapping revisions, regulatory changes, etc.) are, however, adopted. None of the changes alters the General Plan's existing land use policies and maps in terms of planned densities or intensities, however. Thus, no LUD changes are made, no Rural Village Study Areas are updated or deleted, no new Rural Village Overlays are created and so on.

- The County of Riverside would not provide any additional housing to meet Regional Housing Needs Assessment (RHNA) targets as assigned by SCAG.

- Although the General Plan would be updated to discuss climate change and greenhouse gas regulation, the current draft CAP included with GPA No. 960, is assumed to not be adopted and implemented. Specifically, because this alternative poses no new development within unincorporated Riverside County, the existing draft CAP could not be implemented (as it focuses mainly on future new development).

- Implementation of the Western Riverside (WR) MSHCP and the Coachella Valley MSHCP (CV-MSHCP) are assumed to continue, but only through the participating cities in Riverside County. With no development occurring in the unincorporated areas, no associated funding for habitat acquisition would be generated from county sources. However, the existing open space within unincorporated Riverside County would also be left largely undisturbed and as such the acquisition of additional conservation lands would generally not be needed as compensation.

- With no new development occurring in unincorporated Riverside County, no County DIF (development impact fees) or Transportation Uniform Mitigation Fee (TUMF) program funds would be generated from this source. The TUMF program imposes fees on development to address transportation impacts on local arteries, specifically the funds are used to make selected transportation improvement projects along the adopted TUMF arterial network. Absent county growth, it is assumed that TUMF network improvements within Riverside County would be revised to prioritize circulation network improvements based chiefly on needs within the (growing) cities and secondarily on county roads conveying city-generated cross-traffic.

- It is assumed that the circulation networks within the cities of Riverside County, as well as those of the surrounding cities and counties would generally be improved as planned for by the cities' existing General Plans and regionally as planned for by SCAG's 2012 RTP (to the extent still applicable) to coordinate regional circulation its cities and counties as well. Within the unincorporated portions of Riverside County, it is assumed that, with a few noted exceptions, no future roadway improvements would occur, existing roadways would generally remain in their current state and the countywide circulation network plan portrayed in the existing General Plan (Figure C-1) would not be realized.

- The exceptions to this lack of traffic improvements would be where regional and, in particular, city traffic triggers the need for roadway improvements within unincorporated Riverside County and sufficient funds are generated by the cities and other existing revenue streams (for example Measure A funds) to pay for such improvements. Similarly, it is assumed that the State of California (Caltrans) and federal agencies would continue to perform certain improvements to the state and federal highways passing through unincorporated Riverside County. However, such improvements would be limited to those needed to address the traffic increases arising from the growth in the cities and surrounding counties. The unincorporated areas would not contribute to the increasing traffic on these systems.

b. Baseline Assumptions

As with all of the other alternatives, as well as the rest of the EIR for that matter, the starting baseline assumptions for the No Build alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. For example, Section 4.5 (Agricultural and Forestry Resources) provides information on existing mapped farmlands, existing forestry resources, etc., within Riverside County. This baseline condition applies to both the incorporated and unincorporated portions of Riverside County. See Table 6.4-A (No Build/No Growth Alternative – Assumptions and Projections) for the full baseline data set used for this alternative. See the footnotes to this table for additional comments on the baseline assumptions.

c. Build Out Assumptions

For this particular alternative, it is assumed that no new development is approved within the unincorporated portions of Riverside County. As such, the build out assumptions for this part of the county and region are proposed to remain the same as that of the baseline conditions outlined above.

For the cities within Riverside County, however, growth is assumed to occur as directed by each city's individual General Plan, subject to the criteria previously noted above. Thus, the build out conditions for this alternative use the baseline assumptions unchanged for the unincorporated portion of Riverside County, but built-out (developed) conditions are applied to the incorporated cities. See Table 6.4-A for the full build out data set used for this alternative. See the footnotes to this table for additional comments on the build out assumptions.

2. Environmental Implications

Section 15126.6(d) of the State CEQA Guidelines notes that, "A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than [those] of the project as proposed."

Table 6.4-A: No Build / No Growth Alternative – Assumptions and Projections

No Build / No Growth Alternative ASSUMPTIONS [5]	Baseline: Existing (2007) Conditions[1, 2]			Build Out: Future (2060) Conditions[1,2 4]		
	Unincorp. County	Cities [3]	Countywide Total	Unincorp. County	Cities [3]	Countywide Total
Land Uses						
Residential	109,600 ac	113,700 ac	**223,300 ac**	109,600 ac	186,100 ac	**295,700 ac**
Commercial [6]	27,200 ac	31,800 ac	**59,000 ac**	27,200 ac	31,800 ac	**59,000 ac**
Industrial [7]	124,200 ac	121,400 ac	**245,600 ac**	124,200 ac	121,300 ac	**245,500 ac**
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	226,900 ac	61,000 ac	**287,900 ac**
Open Space [8]	757,000 ac	11,300 ac	**768,300 ac**	757,000 ac	34,000 ac	**791,000 ac**
Vacant & Other [9]	2,766,000 ac	206,500 ac	**2,972,500 ac**	2,766,000 ac	109,100 ac	**2,875,100 ac**
Total Acres	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**
Socioeconomic Data						
Dwelling Units	207,000 du	566,500 du	**773,500 du**	207,000 du	1,040,400 du	**1,247,400 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	553,500 pers	3,006,700 pers	**3,560,200 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	107,900 jobs	1,318,200 jobs	**1,426,100 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	0.52	1.27	**1.14**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	1.89 du/ac	5.59 du/ac	**4.22 du/ac**

Footnotes:

1. Source for land use, existing and build out: EIR Table 4.2-F for all except, "Cities, Build Out," which were estimated from RCCDR 2012 data.
2. Source for socioeconomic data: EIR Table 4.3-G.
3. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are generally included in the unincorporated Riverside County totals, rather than the incorporated totals for baseline conditions. Category totals estimated from proportional growth projections.
4. Build out conditions are those projected at full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. No new development occurs in the unincorporated portion of Riverside County (that is, build out values equal the baseline values). Also, no additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
   c. The cities of Eastvale and Jurupa Valley are generally included in the incorporated build out totals.
5. All values rounded to the nearest hundred. Thus, totals may not sum precisely.
6. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
7. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
8. Open space uses include conservation lands, as well as water (lakes, reservoirs, etc.).

9. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.
Source: See footnotes, above, for data sources.

With this in mind, in addition to the basic land use and socioeconomic data presented above, a second table was created to briefly indicate the environmental effects projected for the given alternative. As per the above directive, where significant items arise, they are discussed further below.

For this alternative, with no additional development occurring in unincorporated Riverside County, most of the environmental impacts within Riverside County would be substantially less adverse than those of the proposed project. In a few areas, such as certain air quality impacts, seismic risks, noise exposure, traffic levels and stormwater drainage needs, existing (baseline) environmental effects are already at a significant level and the alternative would not relieve or lessen these impacts.

As shown in Table 6.4-B (No Build/No Growth Alternative – Environmental Effects Summary), this alternative would have a number of significant environmental effects (either individual, in localized areas or cumulative). Certain of these significant environmental effects would be substantially worse than those associated with the project-updated General Plan. These effects, which are discussed further below, include:

- Greenhouse gas emissions and conflicts with regulatory compliance.
- Inefficient use of energy.
- Circulation system effectiveness and congestion management conflicts.
- Increased traffic levels in localized areas.
- Groundwater depletion or overdraft.
- Population increase straining community services or facilities.
- Facilitation of other activities leading to significant environmental effects (in particular, increasing the rate of growth within the cities of Riverside County and surrounding cities and counties; see discussion, below).

a. General Impacts

As indicated in Table 6.4-B, the No Build/No Project Alternative would have predominantly fewer adverse environmental effects within unincorporated Riverside County than would the proposed project. This is due mainly to the elimination of future development within unincorporated Riverside County under this alternative. With no new development occurring, no additional impacts would occur to existing resources, such as wetlands, viewsheds, minerals and so on. In addition, the lack of development would also mean that the population of unincorporated Riverside County would not increase. As such, there would be no increased demand on existing facilities, such as schools, wastewater treatment facilities, etc., serving unincorporated areas.

b. Agriculture

Although state-designated farmlands within cities would not be protected from conversion, the bulk of Riverside County's farmlands (75%) are located in the outlying unincorporated portions of the county. With no growth in

unincorporated Riverside County, there would also be no additional loss of designated farmlands in these areas. For this reason, this alternative's farmland impacts would generally be less than the project's.

Table 6.4-B: No Build / No Growth Alternative – Environmental Effects Summary

Impact #	Impact Title / Description [1, 6]	No Impact	Less Than Signif.[2]	Less Than Signif. With Mitigation[2]	Significant [3]	Cumul. Significant	Relative to Proj.[4]	Effects on Cities [5]
4.2 – Land Use								
4.2.A	Physically divide an established community.		•				↓	LTS
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.		•				↓	LTS
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				↓	LTS
4.3 – Population and Housing								
4.3.A	Induce direct or indirect population growth.		•				↓	SIG
4.3.B	Displace residential units.		•				↓	LTS
4.3.C	Displace people.		•				↓	LTS
4.4 – Aesthetic and Visual Resources								
4.4.A	Adversely affect scenic vistas.		•				↓	LTS-M
4.4.B	Adversely affect scenic resources within State Scenic Highways.		•				↓	LTS-M
4.4.C	Adversely affect existing visual character.		•				↓	LTS-M
4.4.D	Cause adverse light and glare effects.		•				↓	LTS-M
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•				↓	LTS-M
4.5 – Agricultural and Forestry Resources								
4.5.A	Cause direct or indirect conversion of designated Farmlands.		•				↓	LTS-M
4.5.B	Encroach on or conflict with existing agricultural uses.		•				↓	LTS-M
4.5.C	Adversely affect forest lands and forestry uses.		•				↓	LTS
4.6 – Air Quality								
4.6.A	Conflict with air quality plans.		•				↓	LTS-M
4.6.B (1)	Cause significant construction (short-term) air emissions.			•			↓	SIG
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↓	SIG
4.6.C	Cause cumulatively significant project air quality impacts.			•			↓	SIG
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↓	SIG
4.6.E	Expose substantial numbers of people to objectionable odors.		•				↓	LTS
4.7 – Greenhouse Gases								
4.7.A	Generate substantial greenhouse gas emissions.						↓↑	LTS-M
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.						↑	LTS-M
4.8 – Biological Resources								
4.8.A	Adversely affect riparian or other sensitive habitats.		•				↓	LTS-M
4.8.B	Cause direct and indirect impacts to protected species or their habitats.		•				↓	LTS-M
4.8.C	Adversely affect wetlands.		•				↓	LTS-M
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.		•				↓	LTS-M
4.8.E	Conflict with adopted habitat conservation plans.		•				↓	LTS-M

Impact #	Impact Title / Description [1, 6]	No Impact	Less Than Signif.[2]	Less Than Signif. With Mitigation[2]	Significant [3]	Cumul. Significant	Relative to Proj.[4]	Effects on Cities [5]
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				↓	LTS-M
4.9 – Cultural and Paleontological Resources								
4.9.A	Adversely change the significance of historical resources.		•				↓	LTS-M
4.9.B	Cause the destruction of known archeological resources.		•				↓	LTS-M
4.9.C	Cause destruction of unique paleontological resource or site.		•				↓	LTS-M
4.9.D	Result in the disturbance of human remains.		•				↓	LTS-M
4.10 – Energy Resources								
4.10.A	Increase demand for electricity.		•				↓	LTS-M
4.10.B	Increase demand for natural gas.		•				↓	LTS-M
4.10.C	Cause the inefficient use of energy.						↑	LTS
4.11 – Flood and Dam Inundation Hazards								
4.11.A	Result in housing within flood hazard areas.		•				↓	LTS-M
4.11.B	Cause impediment of flows.		•				↓	LTS-M
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•				↓	LTS-M
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•				↓	LTS-M
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				↓	LTS-M
4.12 – Geology and Soils								
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.		•				↓	LTS-M
4.12.B	Expose people or structures to substantial strong seismic groundshaking.		•			•	↓	SIG
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.		•				↓	SIG
4.12.D	Expose people or structures to substantial adverse effects due to landslides.		•			•	↓	SIG
4.12.E	Result in substantial soil erosion or topsoil loss.		•				↓	LTS-M
4.12.F	Result in development on unstable geological units or soils.		•				↓	LTS-M
4.12.G	Result in development on expansive soil.		•				↓	LTS-M
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.		•				↓	LTS-M
4.13 – Hazardous Materials and Safety								
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•				↓	LTS
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•				↓	LTS
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•				↓	LTS
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•				↓	LTS
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•				↓	LTS
4.13.F	Result in a safety hazard for people in the vicinity of a private airstrip or heliport.		•				↓	LTS
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↓	LTS

Impact #	Impact Title / Description [1, 6]	No Impact	Less Than Signif.[2]	Less Than Signif. With Mitigation[2]	Significant [3]	Cumul. Significant	Relative to Proj.[4]	Effects on Cities [5]
4.13.H	Expose people or structures to significant risk due to wildland fire.		•				↓	LTS
4.14 – Mineral Resources								
4.14.A	Result in the loss of availability of delineated locally important minerals.	•					↓	LTS
4.14.B	Result in the loss of availability of known mineral resources.		•				↓	LTS-M
4.15 – Noise								
4.15.A	Generate noise or cause noise exposure in excess of standards.				•	•	↓	SIG
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↓	LTS-M
4.15.C	Result in a substantial permanent increase in ambient noise.		•				↓	SIG
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.			•			↓	SIG
4.15.E	Expose people to excessive airport-related noise levels.		•				↓	LTS
4.16 – Parks and Recreation								
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.		•				↓	LTS-M
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•				↓	LTS-M
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•				↓	LTS-M
4.17 – Public Facilities								
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•				↓	LTS-M
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.		•				↓	LTS-M
4.17.C (1)	Adversely affect or exceed the permitted capacity of a landfill.		•				↓	LTS-M
4.17.C (2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the County Integrated Waste Management Plan.		•				↓	LTS
4.17.D	Cause adverse environmental effects due to the need for schools.		•				↓	SIG
4.17.E	Cause adverse environmental effects due to the need for library services.		•				↓	SIG
4.17.F	Cause adverse environmental effects due to the need for medical facilities.		•				↓	LTS
4.18 – Transportation and Circulation								
4.18.A	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.						↓↑	SIG
4.18.B	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				◊		↓↑	SIG
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				↓	LTS
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				↓	LTS
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				↓	LTS
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				↓	LTS
4.18.G	Cause an adverse effect on circulation during construction.		•				↓	LTS
4.18.H	Result in inadequate emergency access.		•				↓	LTS
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				↓	LTS
4.19 – Water Resources								
4.19.A	Result in insufficient water supply.		•				↓	SIG

Impact #	Impact Title / Description [1, 6]	No Impact	Less Than Signif.[2]	Less Than Signif. With Mitigation[2]	Significant [3]	Cumul. Significant	Relative to Proj.[4]	Effects on Cities [5]
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.		•			◊	↑	LTS-M
4.19.C	Substantially degrade water quality.		•				↓	LTS-M
4.19.D	Violate water quality standards or waste discharge requirements.		•				↓	LTS-M
4.19.E	Exceed wastewater treatment requirements.		•				↓	LTS-M
4.19.F	Exceed wastewater treatment capacity.		•				↓	LTS-M
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•				↓	LTS-M
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.		•				↓	LTS-M
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.		•				↓	LTS-M
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.		•			•	↓	LTS-M
5.2 – Significant Irreversible Changes								
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.		•				↓	SIG
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				↓	LTS
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.		•				↓	SIG
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				↓	LTS
5.4 – Significant Growth-Inducing Effects								
5.4.A	Foster direct or indirect economic growth.		•				↑	SIG
5.4.B	Foster direct or indirect population growth.		•				↑	SIG
5.4.C	Result in construction of additional housing.		•				↓	SIG
5.4.D	Remove obstacles to population growth.		•				↓	LTS
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.				•		↑	SIG
5.4.F	Result in population increase that may strain community services or facilities.				•		↑	SIG

Footnotes:

1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; ↓↑ = areas of each result; and, = , approximately the same.
5. Summary of overall effects on cities within Riverside County. LTS = less than significant; LTS-M = less than significant with mitigation; SIG = significant. See text for discussion of these results.
6. Shaded yellow boxes denote impact finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

c. Traffic and Circulation Impacts

In terms of traffic, there would be no population-triggered increase in vehicle miles traveled (VMT) or associated increases in air pollutant emissions, greenhouse gas emissions, odors, ambient noise levels, etc. As such, the

project would have substantially fewer future impacts in these areas. However, without growth in Riverside County, the network of roads proposed in the Riverside County General Plan (General Plan Figure C-1) also would not be realized. The only circulation improvements within unincorporated Riverside County would be those made by the state and federal governments to the freeways and highways under their jurisdictions. There may also be regional (RCTC) improvements where there is sufficient city-generated funding for their construction within unincorporated Riverside County.

Thus, within unincorporated Riverside County, existing roadway segments or intersections currently at unacceptable levels of service generally would remain as such. Further, as development progresses within adjacent cities, Riverside County roadways used for transport to and from these cities would see increasing levels of traffic and congestion. It is for these reasons that Impacts 4.18.A and 4.18.B for the No Build/ No Growth Alternative would both be significant and unavoidable, as well as cumulatively significant. All other areas of traffic-related impacts for the alternative would be less than significant since unincorporated Riverside County's population would not be increasing.

d. Air Quality, Greenhouse Gas and Energy Impacts

In terms of air quality, this alternative would have substantially fewer future impacts since no development would be occurring in the unincorporated portions of Riverside County. Also, with no new development, there would be no population-triggered increase in VMT in these areas. Since vehicle travel directly affects noise levels and the emissions of pollutants and greenhouse gases, future increases in these areas would not occur under this alternative.

Likewise, with so little development occurring within unincorporated Riverside County, under this alternative it was determined that short-term (construction-related) air emissions would be less than significant both individually as well as cumulatively (since what construction did occur in the county would be spaced further apart and thus less likely to cause a cumulatively significant impact on any single given day).

Where existing (baseline) conditions are already significant, such as operational emissions of certain air pollutants (e.g., O_3, PM_{10} and $PM_{2.5}$ in both the South Coast and Mojave Desert Air Basins), the alternative's effects would remain significant since it would not reduce such emissions. This is particularly true for greenhouse gas emissions which would not be reduced in the absence of Riverside County implementation of the proposed CAP. As such, the County of Riverside would not need to mitigate the effects of new development (that is, further reduce GHG emissions by 15%).

However, there also would be no plan for Riverside County to address energy conservation within existing homes and businesses as the CAP addresses energy conservation (i.e., decreasing electricity and natural gas usage) as a means for decreasing GHG emissions. Under this alternative, there would be no implementation of policies to improve energy efficiency in existing homes and businesses. Thus, particularly for structures built prior to introduction of California State's Title 24 energy conservation codes, energy-inefficient uses would remain unrelieved under this alternative. Thus, Impact 4.10.C was deemed significant for this alternative.

Absent a CAP, this alternative would result in a new significant impact related to inconsistency with California State's AB 32 GHG reduction goals. The CAP proposed in conjunction with GPA No. 960 primarily addresses GHG emissions from new development. As such, absent the new development measures, the plan would not achieve the necessary reductions from existing uses needed to reduce existing emissions by an additional 15%, as called for by the State of California. As shown in Table 4.7-F in Section 4.7 (Greenhouse Gases), the baseline (2008) greenhouse gas emissions totaled 7.102 million metric tons of carbon dioxide equivalents (CO_2e). To be compliant with AB 32, the County of Riverside would need to reduce this to 6.037 million metric tons, even with

no additional future development or growth in Riverside County. Since existing emissions would remain substantial and would not be reduced by the County of Riverside, this alternative would have significant effects under both Impacts 4.7.A and 4.7.B.

e. Noise Impacts

As with air quality, for noise impacts this alternative would have substantially fewer future impacts since no development would be occurring in the unincorporated portions of Riverside County. Also, with no new development, there would be no population-triggered increase in VMT in these areas. Since motor vehicle travel is the largest single source of noise generation in Riverside County and directly affects noise levels for receptors along roadways, future increases in ambient noise levels, as well as construction noise levels, would not occur under this alternative.

Likewise, with so little development occurring within unincorporated Riverside County, under this alternative most of the cumulative effects of noise would also be less than significant. The exception being that this alternative would result in cumulatively significant noise levels along county roads that would see an increase in traffic due to growth within the cities. Similarly, where county roads generate existing levels of noise in excess of standards, these future traffic increases would result in localized, as well as cumulatively significant, noise exposures.

f. Geology and Soils Impacts

As with many other spatial impacts, in terms of geology and soils, the No Build / No Project Alternative would have predominantly fewer adverse environmental effects within unincorporated Riverside County than would the proposed project because of the lack of future development in the county. Since this would also mean the population of unincorporated Riverside County would not increase, future risks to additional people and properties due to development in areas prone to seismic and other geologic hazards would not occur. However, even without additional development, much of Southern California, including much of Riverside County, is subject to strong seismic groundshaking risks. As such, this impact (4.12.B) would remain cumulatively significant for this alternative even without future development. For similar reasons, the cumulative risk to people and structures due to landslide and rockfall hazards (Impact 4.12.D) would also remain significant under this alternative.

g. Water Impacts

The lack of future development associated with this alternative would mean that additional demands on future water supplies would be limited. In general, this means that additional potable water supplies and the infrastructure to treat and deliver such water would not be needed within unincorporated Riverside County beyond already identified existing needs. And, since water infrastructure is funded by the water utility's customers, it may be safely assumed that future infrastructure needs, particularly for imported water supplies, would be able to be adequately met through existing funding and implementation mechanisms. Such measures would also adequately address the needs for wastewater conveyance, treatment and disposal.

Thus, overall, this alternative would have substantially fewer adverse effects on water resources. However, there are two exceptions to this conclusion: First, as with the proposed project, this alternative would have a significant adverse effect on the environment due to the need for new stormwater drainage facilities as portions of unincorporated Riverside County currently experience insufficient stormwater drainage. In some of these areas, without the funds generated by future development, it is likely that necessary stormdrain facilities would not be constructed. The result would be cumulatively significant adverse effects on existing lands due to inadequate stormwater controls (Impact 4.19.J).

Second, this alternative would also result in significant adverse effects to groundwater supplies, possibly even causing overdraft, in portions of Riverside County relying solely on groundwater basins for their potable water supplies. In areas where water is supplied through individual wells, particularly some of the more rural portions of the unincorporated county, the lack of a water district to organize and fund water infrastructure improvements would mean that groundwater remained the sole water source. Thus, lack of future imported water availability would result in a cumulatively significant impact (i.e., Impact 4.19.B) where a water basin is already in overdraft or where the current basin withdrawals exceed its replenishment (which would eventually lead to depletion of the basin).

h. Growth Inducement and Impacts to Cities

As clearly outlined above, by restricting growth and development within unincorporated Riverside County, the No Build/No Growth Alternative would result in no increase in population and little to no increase in Riverside County's existing development footprint. Within the cities of Riverside County, however, a different pattern would result. These locales would bear the brunt of future development demand. A large portion of the population seeking residency within the Inland Empire would be have no choice other than Riverside County's cities or surrounding cities and counties.

Under this alternative, it was assumed that growth within the cities would occur in accordance with each city's general plan, as required by state law. This would hold true even in the face of increased growth pressure from the unincorporated areas. See Table 6.4-A for RCCDR estimated build out results for incorporated Riverside County. The principle difference brought about by this alternative would be that the *rate* of the anticipated growth in the cities would be accelerated compared to that currently expected and planned for by the cities' general plans. For impacts to cities listed as "less than significant with mitigation" in Table 6.4-B, it is assumed that existing regulatory compliance and, where necessary, compliance with city-specific CEQA mitigation measures, would be sufficient to ensure the impact is less than significant. For these impacts, the feasibility of successful mitigation to less-than-significant levels was based on examples in the EIR for the Riverside County General Plan or various specific city general plans in which such findings were made.

Given the assumption that cities would build out according to their existing general plans, despite the increased growth pressure (and thus growth rate) experienced, this alternative would result in a number of significant adverse environmental effects within the cities as a result. These include:

- The cities would experience significant direct and indirect population growth. They would also experience a significant increase in the rate of direct and indirect population growth.

- The cities would continue to experience significant short-term and long-term air pollutant emissions, as well as cumulatively significant air emission increases. The increased rate of development within the cities would mean that short-term construction impacts on air quality are more likely to be cumulatively significant since more projects would be developing at the same time, collectively exceeding thresholds set by SCAQMD.

- With growth concentrated in cities instead of spread out across Riverside County, existing and future city residents would be subject to increased local pollutant concentrations.

- The cities would experience significant short-term air pollutant emissions as vehicle trips increase more rapidly than planned, outpacing the pollution-lowering effects of the various state regulations (e.g., improved fuels, increased engine efficiency requirements, etc.) being implemented between now and 2020 (and beyond) pursuant to AB 32 and CARB's AB 32 Scoping Plan. Also, more homes would be built

under existing California State Title 24 (energy efficiency) requirements. Since the State of California has been tightening Title 24 requirements every two years, such homes would have been required to meet higher standards if developed two or more years later.

- As with any development within Southern California, where cities are located within regions mapped with the potential for strong seismic groundshaking in the event of a major earthquake, there would be a cumulatively significant risk for the exposure of people and structures to strong groundshaking. (This risk, however, would be no different than for the rest of Riverside County.)

- Where development within cities would occur in areas with landslide or rockfall potential, there would be a cumulatively significant risk for the exposure of people and structures to landslide or rockfall hazards.

- Where existing noise levels already exceed acceptable noise standards, additional development within the cities would further exacerbate such significant noise impacts. Additional development would also increase noise levels in some locations from currently acceptable to unacceptable noise levels. This would be particularly likely for residential areas adjacent to city and county roadways with existing or future unacceptable traffic volumes that would not be planned for roadway improvements under this alternative. Increased development within cities would also expose more people (existing and future) to potentially significant short-term construction impacts. As traffic volumes increase in the cities, existing sensitive receptors (residents, school children, hospital patients, etc.) would more quickly be exposed to noise levels in excessive of the standards. The increased rate of development within the cities means that short-term construction impacts are more likely to be cumulatively significant since more projects would be developing at the same time.

- This alternative would significantly affect schools because it would selectively increase the concentrations of students in the school districts serving incorporated areas. In addition to selectively increasing the concentrations of students in the school districts serving incorporated areas, this alternative would also increase the rate at which new schools and related facilities would be needed within the cities.

- This alternative would have significant adverse effects on city libraries because it would selectively increase the concentrations of library patrons within the cities, as opposed to the unincorporated portions of Riverside County. In addition to selectively increasing the adverse effects on city libraries, this alternative would also increase the rate at which new libraries, books and related facilities would be needed within the cities to serve their growing number of library patrons.

- Growth occurring within cities would result in increased vehicle trips within both the cities and the county for trips to and from the cities. With little to no additional county roads built under this alternative, the increased traffic would lead to significant unavoidable impacts within both the cities and within portions of Riverside County serving as links to/from the cities. Significant traffic impacts would arise on the individual and cumulative levels for circulation system effectiveness and for congestion management within both the cities and Riverside County. Surrounding cities and counties, particularly those adjacent to Riverside County, would likely be similarly affected.

- The increased growth rate within cities would result in roadways more rapidly reaching unacceptable traffic levels in various locations within both the cities and the county. Further, even where future plans would alleviate traffic congestion, the increased rate of development in the cities could in some cases result in a longer wait for the necessary improvements to be constructed. This may particularly be true of state (Caltrans) or federal (FHWA) projects in which priorities must balance statewide or national needs, rather than focusing solely those of the local populace.

- Cities are generally planned so that build out of their general plans would not exceed their available water supplies. Under this alternative, however, it is possible that the rate of a city's growth could outpace the ability of existing and/or planned water supplies to meet the resultant need. In particular, where a city relies upon groundwater, if the increased demand exceeds the basin's recharge capacity (or the water provider's plans to increase said capacity), overdraft of the groundwater basin could result in a significant impact.

- By definition, development within the cities would result in a significant commitment of nonrenewable resources that would make its later removal or non-use unlikely.

- Development within the cities would result in primary and secondary impacts that would generally commit future generations to similar uses.

Lastly, it is possible that under this alternative increased growth pressure in the cities could lead to increased development above that currently planned. At present, the cities of Riverside County are projected to provide a total of approximately 1.04 million dwelling units at build out (83% of the countywide total) with unincorporated Riverside County only providing roughly 207,000 more units. This would leave a housing deficit of over 520,000 homes within the unincorporated areas under this alternative. Notwithstanding the existing cities' general plans, making up this half-million-plus deficit within the cities would require significant changes in city general plans and result in a number of additional significant impacts within the cities.

The cities would need to increase their housing densities to accommodate the additional expected population (of 1.15 million people overall). They would also need to add enough additional economic uses (commercial, industrial, agricultural, etc.) to provide an additional 454,000 jobs within the cities. The increased number of people and employees present within the cities would significantly increase the amount of traffic, noise and air pollution within the cities because the same amount of effects that would have been spread over the entire county (roughly 4,011,000 acres excluding tribal, state and federal lands) would instead be spread over the roughly 542,000 acres encompassed by cities. As a result, the following new significant environmental impacts would occur in the cities of Riverside:

- Increased densities would lead to increased direct and indirect population growth. These impacts would be significant because they would exceed the totals currently planned in the cities' existing general plans. This alternative's impact would exceed that of the proposed project (i.e., build out of the Riverside County General Plan pursuant to the changes proposed by GPA No. 960).

- Increased development would increase the number of vehicle trips occurring within the cities, as well as those entering and leaving the cities. The traffic studies were performed for this project and a variety of scenarios, including the cities-only scenario described by this alternative; see tables in Section 4.18 and in EIR Appendix EIR-4 (Traffic Study).

- The higher densities within the cities would contribute, in large part, to the increased traffic seen in the county. This increased traffic would result in increased emissions where traffic congestion leads to longer commute times over the same distances. However, as a side effect of increased development in the cities, local commutes would also be shorter for many (resulting in VMT reductions) due to the availability of jobs, shopping and other destinations locally. Overall, however, the increased density overshadows any VMT reductions and the overall cumulative impact of this alternative on the cities would ultimately be significant and unavoidable.

- The increased development would result in significant increases of air pollutant emissions, both long- and short-term, in localized areas (i.e., concentrated in cities, rather than spread across the whole county). This would also result in the exposure of a significant number of sensitive receptors (children, elderly, the infirm, etc.) to air pollutants in these localized areas. The higher densities within the cities would contribute, in part, to reduced pollution due to lower vehicle miles traveled (as opposed to whole-county build out). However, these reductions would in part be offset by increased emissions where traffic congestion leads to longer commute times over the same distances. Overall, however, the increased density overshadows the VMT reductions and the overall cumulative impact of this alternative on the cities would be significant and unavoidable.

- The increased development would result in significant increases vehicle trips within localized areas (i.e., concentrated in the cities, rather than spread across the whole county). As a result, noise levels would increase in excess of standards in more areas within the cities than would have occurred under this project (with trips spread out countywide). This could also include cause additional portions of the cities that otherwise would have remained under acceptable thresholds to exceed noise limits. Thus, this alternative could result in significant new noise impacts within the cities due to additional noise generation and could also cause substantial permanent increases in ambient noise levels in the cities.

- Under this alternative, increased densities would lead to increased population growth that exceeds that currently planned in the cities' existing general plans. As such, this alternative could cause the substantial deterioration of existing recreational facilities within the cities serving populations that would have otherwise been spread across the county instead.

- The population increases in the cities from this alternative would also trigger the need for additional recreational, schools, governmental, health, library, law enforcement, fire services and other public services and facilities. The land necessary to provide these uses would be acquired from existing vacant land, agricultural land, open space (conservation or recreational lands) or land already planned (or built) to serve other uses (rural residential, for example). As such, it would be increasingly likely that the construction of such necessary services and infrastructure improvements would result in additional adverse environmental impacts. Since similar types of development within the unincorporated portions of Riverside County could be more easily accommodated in a manner that avoids significant effects to the physical environment (chiefly due to the greater inventory of vacant land to select from), the effects of this alternative on the environment due to the need to provide additional utilities, infrastructure, public facilities and services would likely be substantially greater than that of the proposed project. These impacts would also result in significant growth-induced strain on community services and facilities in the cities.

- The increased economic and population growth fostered within the cities by this alternative would result in significant growth-inducing effects. Because these growth effects would exceed the levels planned for in the individual city general plans, this alternative would have a greater effect on the cities than the proposed project would on the surrounding unincorporated county areas.

4. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for "further progress" within Riverside County since it posits no growth and no development. Nor would it address new needs, since it pushes all new growth into the cities where Riverside County's General Plan does not apply. It would provide updated technical data, simply by definition, but would not provide any updated land

uses within Riverside County (since no further development would be permitted). And, most particularly, it does not further the Riverside County Vision in any way since it does not permit or promote any "continued progress" within the county.

5. Conclusions

Overall, the No Build/No Growth Alternative would "substantially lessen" most of the significant environmental impacts within the unincorporated portions of Riverside County, as indicated in Table 6.4-B. In a few areas under this alternative, however, a number of existing impacts would remain significant and would not be mitigated. These include: increased traffic network congestion and inadequate levels of service and groundwater depletion.

In addition, new impacts would arise where future conditions do not conform to regulatory conditions. In particular, these include: conflicts with greenhouse gas reduction plans (particularly AB 32 and the associated CARB Scoping Plan) and increasingly inefficient uses of energy (particularly electricity) as a result of failure to implement the CARB Scoping Plan, the proposed CAP, new California State Title 24 energy efficiency standards, and other related plans.

Taken together, the substantial reduction in significant impacts associated with this alternative would make it appear to be the "environmentally superior" alternative addressed under CEQA. However, Section 15126.6(e)(2) of the State CEQA Guidelines notes, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

In addition, as outlined above, this alternative meets only one of five of the objectives of the project. This means that this alternative is not an acceptable means for achieving the stated project objectives. For all of these reasons, despite being found "environmentally superior" to the proposed project, the No Build/No Growth Alternative is not deemed the preferred alternative.

B. No Project / Status Quo Alternative

As noted under the previous alternative, CEQA specifies a no-project alternative that "would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with the available infrastructure and community services" (State CEQA Guidelines, Section 15126.6(e)). Accordingly, the No Project / Status Quo Alternative examines the environmental effects associated with abandoning the proposed project, GPA No. 960, and "doing nothing," that is, allowing the unincorporated county to continue to develop as planned under the existing Riverside County General Plan.

Again, as with the first alternative, analysis of this alternative provides a look at the environmental cost of maintaining the status quo. As such, this alternative serves as a lens for highlighting the environmental implications for approving (or denying) the proposed project.

1. Assumptions

For this alternative, it is assumed the updates to the General Plan proposed under GPA No. 960 would not be adopted. Instead, the existing (2008) General Plan would continue to be implemented and all of the general assumptions mentioned previously apply. Thus, this alternative examines the effects that would occur if

unincorporated Riverside County were to build out according to this existing plan. In addition, the No Project/Status Quo Alternative includes the following assumptions as part of its project description:

- GPA No. 960 (the proposed project) would not be approved and the technical and regulatory updates needed for the General Plan (e.g., statistical updates, resource mapping revisions, regulatory changes, etc.) would not be adopted. No alterations to the General Plan's existing land use policies or maps would occur. No LUD changes are made, no Rural Village Study Areas are updated or deleted, no new RVOs are created, and so on.

- The General Plan would not be updated to discuss climate change and greenhouse gas regulation. The draft CAP included with GPA No. 960 would not be adopted or implemented. Greenhouse gas issues would be addressed and mitigated, where necessary, on a case-by-case basis for individual implementing projects instead.

a. Baseline Assumptions

As with all of the other alternative (and the rest of the EIR for that matter), the starting baseline assumptions for the Status Quo Alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. For example, Section 4.14 (Mineral Resources) provides information on existing mineral designations, mapped locations of mineral resources of regional or statewide significance, and so on within Riverside County. This baseline condition applies to both the incorporated and unincorporated portions of the county. See Table 6.4-C (No Project/Status Quo Alternative – Assumptions and Projections) for the full baseline data set used for this alternative. See the footnotes to this table for additional comments on the baseline assumptions.

b. Build Out Assumptions

For this particular alternative, it is assumed that no changes to the County General Plan are made and that the unincorporated portions of Riverside County build out as directed by the existing General Plan. As such, the set of build out projections developed generally for the existing General Plan apply. For the cities within Riverside County, growth is assumed to occur as directed by each city's individual General Plan. For the sake of consistency, the standardized city land use build out projections developed by RCCDR were applied to each of the individual cities within Riverside County. Thus, the build out conditions for this alternative are the build out assumptions made for the existing Riverside County General Plan. See Table 6.4-C for the full build out data set used for this alternative. See the footnotes to this table for additional comments on the build out assumptions.

For the regions outside the boundaries of Riverside County, land use and demographic assumptions used are those promulgated by SCAG for the six-county region, for example, RCP-10 and the SCAG 2012 Regional Transportation Plan.

As outlined elsewhere in this EIR, for example Table 4.3-F, build out of the existing General Plan would result in slightly more homes (roughly 2%), people (1.3%) and jobs (5.6%) compared to that which would result from build out of the General Plan as it would be if updated pursuant to GPA No. 960 (the "project scenario" for the purposes of this section's analysis). These higher values are mainly due to the increased densities and intensities called for in the Rural Village Study Areas outlined in the existing General Plan.

Specifically, development under this alternative would include the build out of certain areas with higher development potentials than planned for under the proposed project. These include the following:

- The Aguanga Rural Village Study Area encompasses roughly 6,000 acres under the existing General Plan. Under this alternative, the RVSA and its higher densities/intensities would remain in effect. (GPA No. 960 proposes it be deleted and the area continue to develop according to the existing underlying General Plan LUDs.) Thus, in this region the alternative would have the potential for greater impacts than those of the proposed project.

- The Anza RVSA encompasses roughly 71,000 acres under the existing General Plan. Again, under this alternative, the RVSA and its higher densities/intensities would remain in effect. A new, more general policy area would not replace the RVSA, as proposed by GPA No. 960. As with Aguanga, in this region the alternative would have the potential for greater impacts than those of the proposed project.

- The El Cariso RVSA, encompassing roughly 200 acres under the existing General Plan, would continue to be in effect under this alternative. (It would be deleted under GPA No. 960.) This means increased development potential would still exist for this area.

- The San Jacinto Agriculture/Potential Development Study Area, encompassing roughly 8,000 acres under the existing General Plan, would continue to be in effect under this alternative. (It would be deleted under GPA No. 960.) This means increased development potential would continue to exist for this area.

Table 6.4-C: No Project / Status Quo Alternative – Assumptions and Projections

No Project/ Status Quo Alt. ASSUMPTIONS [5]	Baseline: Existing (2007) Conditions[1, 2]			Build out: Future (2060) Conditions[1,2 4]		
	Unincorp. County	Cities [3]	Countywide Total	Unincorp. County	Cities [3]	Countywide Total
Land Uses[5]						
Residential	109,600 ac	113,700 ac	**223,300 ac**	1,725,400 ac	186,100 ac	**1,911,500 ac**
Commercial [6]	27,200 ac	31,800 ac	**59,000 ac**	9,200 ac	31,800 ac	**41,000 ac**
Industrial [7]	124,200 ac	121,400 ac	**245,600 ac**	80,600 ac	121,300 ac	**201,900 ac**
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	189,700 ac	61,000 ac	**250,700 ac**
Open Space [8]	757,000 ac	11,300 ac	**768,300 ac**	1,331,300 ac	34,000 ac	**1,365,300 ac**
Vacant & Other [9]	2,766,000 ac	206,500 ac	**2,972,500 ac**	674,700 ac	109,100 ac	**783,800 ac**
Total Acres	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**
Socioeconomic Data[5]						
Dwelling Units	207,000 du	566,500 du	**773,500 du**	531,500 du	1,040,400 du	**1,571,900 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	1,727,400 pers	3,006,700 pers	**4,734,100 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	596,000 jobs	1,318,200 jobs	**1,914,200 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	1.12	1.27	**1.22**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	0.31 du/ac	5.59 du/ac	**0.82 du/ac**

Footnotes:

1. Source for land use, existing and build out: EIR Table 4.2-F for all except "Cities, Build out," which were estimated from RCCDR 2012 data.
2. Source for socioeconomic data: EIR Table 4.3-G.
3. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are generally included in the unincorporated Riverside County totals, rather than the incorporated totals for baseline conditions. Category totals estimated from proportional growth projections.
4. "Build out" conditions are those projected at full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. No new development occurs in the unincorporated portion of Riverside County (that is, build out values equal the baseline values). Also, no additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
   c. The cities of Eastvale and Jurupa Valley are generally included in the incorporated build out totals.
5. All values rounded to the nearest hundred. Thus, totals may not sum precisely.

6. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
7. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
8. Open space uses include conservation lands, as well as water (lakes, reservoirs, etc.).
9. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.

Source: See footnotes, above, for data sources.

2. Environmental Implications

As noted previously, CEQA allows "a matrix" to be used to summarize "the major characteristics and significant environmental effects of each alternative." With this in mind, in addition to the basic land use and socioeconomic data presented above, a second table (Table 6.4-D (No Project/Status Quo Alternative – Environmental Effects Summary), below) was created to briefly indicate the environmental effects projected for the given alternative. Where significant effects arise, they are discussed in detail following the table.

Because it does not include the reductions associated with GPA No. 960's proposed Rural Village Study Area changes, build out under this alternative would generally result in slightly greater adverse environmental impacts than that associated with the project. In particular, this alternative does not address new environmental concerns, such as greenhouse gas emissions, traffic (VMT) reductions, energy conservation or water conservation. In some areas, such as certain types of air pollution, noise exposure and traffic levels, existing (baseline) environmental effects are already at a significant level and the alternative would not relieve or lessen these impacts. All of these issues are discussed in greater detail below.

As shown in Table 6.4-D, this alternative would have a number of significant environmental effects (either individual, in localized areas or cumulative). Certain of these significant environmental effects would be substantially worse than those associated with the project-updated General Plan. These effects, which are discussed further below, include:

- Adverse effects to existing visual character, light and glare, and other aesthetic effects.
- Increased greenhouse gas emissions and conflicts with existing regulations seeking to reduce greenhouse gases.
- Impacts to biota and sensitive biological resources in areas not covered by a MSCHP.
- Inefficient use of energy.
- Increased people and property exposed to excess noise.
- Circulation system effectiveness and congestion management conflicts.
- Increased demand on existing water supplies and need for additional water.
- Groundwater depletion or overdraft.
- Population increase straining community services or facilities.
- Facilitation of other activities leading to significant environmental effects (in particular, increasing the rate of growth within the cities of Riverside County and surrounding cities and counties; see discussion, below).

Table 6.4-D: No Project/Status Quo Alternative – Environmental Effects Summary

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.2 – Land Use							
4.2.A	Physically divide an established community.		•				=
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.		•				=
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				=
4.3 – Population and Housing							
4.3.A	Induce direct or indirect population growth.		•			•	↑
4.3.B	Displace residential units.		•				=
4.3.C	Displace people.		•				=
4.4 – Aesthetic and Visual Resources							
4.4.A	Adversely affect scenic vistas.			•		•	↑
4.4.B	Adversely affect scenic resources within State Scenic Highways.			•			↑
4.4.C	Adversely affect existing visual character.						↑
4.4.D	Cause adverse light and glare effects.		•			•	↑
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•				↑
4.5 – Agricultural and Forestry Resources							
4.5.A	Cause the direct or indirect conversion of designated Farmlands.				•	•	↑
4.5.B	Encroach on or conflict with existing agricultural uses.				•	•	↑
4.5.C	Adversely affect forest lands and forestry uses.		•				=
4.6 – Air Quality							
4.6.A	Conflict with air quality plans.			•			=
4.6.B (1)	Cause significant construction (short-term) air emissions.				•	•	↑
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↑
4.6.C	Cause cumulatively significant project air quality impacts.				•	◊	↑
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↑
4.6.E	Expose substantial numbers of people to objectionable odors.			•			=
4.7 – Greenhouse Gases							
4.7.A	Generate substantial greenhouse gas emissions.						↑
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.						↑
4.8 – Biological Resources							
4.8.A	Adversely affect riparian or other sensitive habitats.						↑
4.8.B	Cause direct and indirect impacts to protected species or their habitats.						↑
4.8.C	Adversely affect wetlands.						↑
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.						↑
4.8.E	Conflict with adopted habitat conservation plans.		•				=
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				=
4.9 – Cultural and Paleontological Resources							
4.9.A	Adversely change the significance of historical resources.			•			↑
4.9.B	Cause the destruction of known archeological resources.			•		•	↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.9.C	Cause the destruction of unique paleontological resources or sites.		•			•	↑
4.9.D	Result in the disturbance of human remains.			•			↑
4.10 – Energy Resources							
4.10.A	Increase demand for electricity.			•		•	↑
4.10.B	Increase demand for natural gas.			•		•	↑
4.10.C	Cause the inefficient use of energy.						↑
4.11 – Flood and Dam Inundation Hazards							
4.11.A	Result in housing within flood hazard areas.			•			↑
4.11.B	Cause impediment of flows.			•			↑
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.			•			↑
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.			•			↑
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				=
4.12 – Geology and Soils							
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.			•			↑
4.12.B	Expose people or structures to substantial strong seismic groundshaking.			•		•	↑
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.			•			↑
4.12.D	Expose people or structures to substantial adverse effects due to landslide.		•			•	↑
4.12.E	Result in substantial soil erosion or topsoil loss.			•			↑
4.12.F	Result in development on unstable geological units or soils.		•				↑
4.12.G	Result in development on expansive soil.			•			↑
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.			•			↑
4.13 – Hazardous Materials and Safety							
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•				↑
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•				↑
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•				↑
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•				↑
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•				↑
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.		•				↑
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↑
4.13.H	Expose people or structures to significant risk due to wildland fire.		•			•	↑
4.14 – Mineral Resources							
4.14.A	Result in the loss of availability of delineated locally important minerals.	•					=
4.14.B	Result in the loss of availability of known mineral resources.		•				↓
4.15 – Noise							
4.15.A	Generate noise or cause noise exposure in excess of standards.				•	◊	↑
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.15.C	Result in a substantial permanent increase in ambient noise levels.				•	•	↑
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.				•	◊	↑
4.15.E	Expose people to excessive airport-related noise levels.		•				↑
4.16 – Parks and Recreation							
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.		•			•	↑
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•				↑
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•				↑
4.17 – Public Facilities							
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•			•	↑
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•		•	↑
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•		•	↑
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the County Integrated Waste Management Plan.		•				↑
4.17.D	Cause adverse environmental effects due to the need for schools.		•			•	↑
4.17.E	Cause adverse environmental effects due to the need for library services.			•		•	↑
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•		•	↑
4.18 – Transportation and Traffic							
4.18.A	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.				◊		↑
4.18.B	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				◊	◊	↑
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				=
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				=
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				=
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				=
4.18.G	Cause an adverse effect on circulation during construction.		•				=
4.18.H	Result in inadequate emergency access.		•				↑
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				=
4.19 – Water Resources							
4.19.A	Result in insufficient water supply.				•	◊	↑
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.				•	◊	↑
4.19.C	Substantially degrade water quality.			•			↑
4.19.D	Violate water quality standards or waste discharge requirements.			•			↑
4.19.E	Exceed wastewater treatment requirements.		•				=
4.19.F	Exceed wastewater treatment capacity.		•				=
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•				↑
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.			•			↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.			•		•	↑
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.			•		•	↑
5.2 – Significant Irreversible Changes							
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.		•			•	=
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				=
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.				•	•	=
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				=
5.4 – Significant Growth-Inducing Effects							
5.4.A	Foster direct or indirect economic growth.				•	•	↑
5.4.B	Foster direct or indirect population growth.				•	•	↑
5.4.C	Result in construction of additional housing.				•	•	↑
5.4.D	Remove obstacles to population growth.		•				↑
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.				•	•	↑
5.4.F	Result in population increase that may strain community services or facilities.		•			◊	↑

Footnotes:
1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; ↓↑ = areas of each result; and, **=** , approximately the same.
5. Shaded yellow boxes denote impact finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

a. General Impacts

The severity of the environmental impacts for this alternative, which is essentially build out of Riverside County as planned in the existing General Plan, are based on the impacts disclosed in EIR No. 441, which was certified for the existing RCIP General Plan in October of 2003. Where predicted impacts of this alternative diverge from those in EIR No. 441 (mainly to reflect subsequent growth patterns and updated projections), they are discussed further below.

As indicated in Table 6.4-D, the No Project/Status Quo Alternative would generally have environmental effects within unincorporated Riverside County similar to, but slightly greater than, that of the proposed project because of the greater development potential proposed under that plan (compared to GPA No. 960). These areas of increased development potential would collectively result in a build out scenario that generates roughly 8,000 more dwelling units, 24,000 more people and 30,000 more jobs (and the land uses that provide the source of this employment).

These slightly higher levels of development would result in a slightly greater development footprint with a corresponding increase in the potential for adverse spatial effects to the environment. Thus, this means this alternative would have slightly greater impacts to spatially based environmental resources, such as scenic, agricultural, mineral, biological and cultural resources. Geological and hydrological effects also fall into this category. See Table 6.4-D for a complete list of impacts, including spatial effects. Though slightly higher than the proposed project, in most cases impacts are roughly similar in significance to those predicted for build out of the General Plan pursuant to GPA No. 960. The exceptions are described further below.

In addition to spatial impacts, the slightly higher population and employment proposed under this alternative would also have environmental effects in unincorporated Riverside County. It would slightly increase demand on existing facilities, such as schools, wastewater treatment facilities, parks, water supplies and delivery infrastructure, solid waste disposal and so on. It would also slightly increase the demand for services, such as fire protection, law enforcement and medical, libraries and government services. These increased demands would also trigger the need for new public facilities, services and infrastructure accordingly.

Traffic and related effects, which are also projected off population and employment data, would also be slightly higher than the proposed project's. The existing General Plan identifies impacts to traffic, such as congestion and unacceptable levels of service on roadways, as a significant and unavoidable impact of development in Riverside County. Air quality impacts, particularly those resulting from mobile sources (that is, vehicles) would also be significant and unavoidable under this alternative. These issues are discussed in greater detail below.

b. Aesthetic and Visual Impacts

As noted in Table 6.4-D, this alternative would have significant unavoidable adverse effects on the visual character of Riverside County. Specifically, EIR No. 441 indicates that build out of the existing General Plan would "result in conversion of open space areas to urban land use" causing the "obstruction of existing open views as well as potentially obstructing distant panoramic views" and "contribut[ing] significantly to the loss of visual character of the county" (from page 6 of the 2003 "Findings of Fact for Riverside General Plan - Impacts and Mitigation Measures" document). With its higher development potential and larger footprint, several aesthetic impacts would be worse for this alternative than compared to that of the proposed project. In particular, Impact 4.4.C (affecting visual character) for this alternative would be much worse than for the project and would represent a new impact for this alternative. The proposed project would also result in cumulatively significant aesthetic impacts to scenic vistas (see Section 4.4, Aesthetics and Visual Resources, for more details).

c. Agricultural Impacts

With its slightly larger development potential and footprint, this alternative's impacts on agriculture would be slightly worse than that of the proposed project. As per EIR No. 441, this alternative would "result in the conversion of prime farmlands, unique farmlands, farmland of statewide importance [and] land actively utilized for agricultural production to a variety of non-agricultural uses" (Findings of Fact document, page 2). This impact would be significant and unavoidable with no feasible mitigation measures or alternatives to reduce this impact, according to EIR No. 441. This alternative would also result in significant impacts to designated farmlands due to their conversion to non-agricultural uses and due to conflicts between existing agricultural and non-agricultural uses. See Section 4.5, Agricultural and Forestry Resources, for more details.

d. Biological Impacts

EIR No. 441 was certified prior to the full implementation of the Western Riverside County MSHCP and its sister plan, the Coachella Valley MSHCP. As a result, EIR No. 441 necessarily found that build out of Riverside County would result in cumulatively significant adverse impacts on a variety of biological resources. Key among these were protected species (threatened, endangered, etc.) and their habitat, as well as other sensitive habitats, wetlands and wildlife movement corridors. Mitigation measures were included in EIR No. 441 to address impacts on a project-by-project basis at the implement stage, but the regional impacts, which could not be addressed in this manner, would remain significant and unavoidable sans the MSHCPs. The subsequent adoption and implementation of the two regional MSHCPs for Riverside County ensure that these cumulative impacts, as well as site-specific ones within the areas covered by the MSHCPs, would be less than significant. Table 6.4-D reflects these changes in cumulative impact findings (i.e., they can now be mitigated to less than significant through MSHCP compliance).

EIR No. 441 also finds that where coverage is not provided by an HCP, significant impacts to natural habitats could occur because the policies of the General Plan "do not specify a means for identifying habitats that warrant such measures" for the avoidance and minimization of impacts (per page 13, Findings of Facts document). The EIR for the RCIP General Plan was not able to fully provide the necessary mitigation measures since the MSHCP processes were not complete at that time. For GPA No. 960, however, the two existing MSHCPs provide the framework and scientific data necessary to permit the formulation of adequate mitigation measures for future development projects located outside the coverage areas of the two plans. The two MSHCPs mitigate for regional and cumulative impacts in Riverside County.

However, GPA No. 960 also includes additional CEQA-specific mitigation measures to ensure the proposed project's biological impacts would all be less than significant. (See Section 4.8, Biological Resources.) Lacking the additional biological mitigation measures that GPA No. 960 would include, the No Project/Status Quo Alternative would have greater impacts on Riverside County's biological resources than would the proposed project. The new significant impacts are reflected in Table 6.4-D accordingly.

e. Air Quality Impacts

In terms of air quality, this alternative would have slightly greater impacts due to the associated small increase in development potential, population, jobs and resultant traffic (VMTs). Under EIR No. 441, build out of Riverside County was found to be associated with several significant and unavoidable air quality impacts, even after the implementation of all feasible mitigation. Significant short-term air quality emissions, particularly of fugitive dust (PM_{10}), would occur during construction activities, such as site preparation. Likewise, significant long-term air pollutant emissions would occur from stationary sources as a result of development within Riverside County in a manner that could not be quantified at that time and thus, was assumed could exceed applicable air quality standards or otherwise be inconsistent with standards and air quality management plans.

Build out of the existing General Plan was also found to result in "changes in regional vehicular traffic trips and associated VMT" that would contribute to significant pollution levels. According to Tables 4.5.M, N and O in EIR No. 441, this includes pollutant levels exceeding SCAQMD thresholds for carbon monoxide (CO), reactive organic compounds (ROC), nitrous oxides (NO_x) and fugitive dust (PM_{10}). These effects would be significant for both western Riverside County and the Coachella Valley region. They would even significantly affect the central San Jacinto Mountains region and reach as far east as the Blythe on Riverside County's border with Arizona.

Lastly, although found to be less than significant under EIR No. 441, it is possible based on more recent modeling data (such as in Sections 4.6 and 4.18 of this EIR) that build out of this alternative would result in

significant air quality impacts to sensitive receptors. In areas where traffic levels would increase significantly, future new development would be required to incorporate adequate setbacks, anti-idling prohibitions or other measures to avoid significant effects to sensitive receptors, such as children, the elderly and the infirm, associated with houses and backyards, parks and playgrounds, schools, daycare centers, medical facilities and long-term care facilities (nursing homes, retirement homes, rehabilitation centers, etc.). In existing locations, however, increases in traffic would expose additional sensitive receptors to significant pollutant emissions. Further, due to the widespread and incremental nature of such pollutant increases, mitigation of such impacts are not possible at the implementing project stage beyond measures directly associated with facility or roadway citing. That is, setbacks and the like would only be effective in preventing exposure to or from new uses. They would not help existing uses, such as residential units, schools and care centers, that are located along existing highways and intersections where pollutant levels would be increasing incrementally over time as traffic increases in the county.

f. Greenhouse Gas and Energy Conservation Impacts

As with air pollutants, this alternative would generate slightly more GHG emissions than the proposed project due to the associated small increase in development potential, population, jobs and resultant traffic. Since the existing General Plan was originally adopted prior to the establishment of the various GHG reduction policies, programs and goals in California, it does not currently address the issue. Likewise, nor did the associated EIR, EIR No. 441 certified for the 2003 RCIP General Plan adoption, address GHGs.

As with the proposed project, on a countywide basis, GHG emissions would be cumulatively significant without mitigation. According to the GHG Study prepared for the project, the "business as usual" scenario in which unincorporated Riverside County builds out according to the existing General Plan (and, hence, this alternative) would result in the emission of roughly 19.75 million metric tons (MT) of carbon dioxide equivalents (CO_2e, a generic measure of GHGs) annually. According to previously published opinions issued by the Southern California Air Quality Management District (SCAQMD), any project emitting more than 3,000 to 10,000 MT CO_2e per year (MTY) or emitting 100% of the Business As Usual (BAU) scenario level, is considered to emit significant amounts of GHGs. Thus, in cases in which individual future development project approved pursuant to the existing General Plan would exceed these limits, and not be reduced to below BAU levels, individual GHG emissions would also be significant.

Lastly, the State of California has established (pursuant to AB 32, the 2006 Global Warming Solutions Act) a policy targeting the reduction of GHG emissions statewide to 1990 levels by 2020 and to 80% below 1990 levels by 2050. In order to be consistent with this state policy, the County of Riverside would need to reduce GHG emissions by roughly 3.2 MT per year by 2020. The proposed project is accompanied by a CAP that outlines and establishes a plan for achieving this reduction for Riverside County. The existing General Plan does not achieve this, thus this alternative would not meet the reduction needs identified to prevent significant GHG impacts from occurring within Riverside County.

In addition, the proposed CAP addresses energy conservation (i.e., decreasing electricity and natural gas usage) as a means for decreasing GHG emissions. As such, it includes a variety of measures that increase energy efficiency and conservation for both existing and new (future) uses within Riverside County. Implementation of both types of measures will be necessary to achieve Riverside County's CAP goals. Accordingly, without this program, the existing General Plan does not encompass the energy efficiency reduction needs of the CAP. Even though new development would be required individually to meet the enhanced energy efficiency standards of the State of California's current Green Building Codes (i.e., commonly referred to as "Title 24"), this would not help improve energy efficiency for the thousands of existing homes and businesses already in Riverside County, particularly those constructed prior to the 1974 establishment of Title 24 energy requirements for buildings. As such, this alternative does not address existing energy use in a manner that would ensure its efficient use and conservation

of energy. For this reason, the alternative was found to have a significant impact on energy due to its inefficient use. This impact is greater for this alternative than it would be for the proposed project, which is accompanied by the CAP.

g. Traffic and Circulation Impacts

As alluded to above, in terms of traffic when an area's population or its sources of employment (or other trip attractors, e.g., shopping malls, casinos, universities, etc.) increase, there is typically an associated increase in vehicle miles traveled. As the number of vehicles using a network increase, so too must the network's available roadway capacity in order to ensure adequate levels of service (LOS) are maintained along both the network's roadway segments and at the intersections that link these segments.

In areas where existing roadway capacities are already functioning at unacceptable levels (e.g., LOS F), any additional increases in traffic would contribute incrementally to cumulatively significant impacts. For existing roadways with currently acceptable functioning levels, increasing traffic volumes without any corresponding expansion of network capacity could eventually lead to unacceptable LOS and significant congestion. Even future roadways constructed with capacity sufficient to serve their initial needs would suffer similar impacts as traffic continued to increase regionally over time, if it increased beyond that planned for the area's build out (and, hence, its roadway network).

As outlined more fully in Section 4.18 (Transportation and Circulation), all of these elements contribute to the significant impacts that would occur for certain existing and projected future roadway facilities within Riverside County. For these reasons, EIR No. 441 found that future growth in Riverside County as the existing General Plan was implemented would have significant, unavoidable impacts on certain portions of the county roadway network. It would also have similar impacts on certain stretches of freeway, that is, state and federal roadways outside Riverside County's jurisdiction to control and ability to mitigate. As such, this alternative was found to have significant impacts, both individually and cumulatively, in regards to circulation system effectiveness and congestion management (including the attainment of acceptable LOS) throughout Riverside County.

Under this alternative, the network of roads proposed in the Riverside County General Plan (i.e., General Plan Figure C-1) also would not be updated to reflect current conditions and needs. The circulation network would still be implemented, but only with the roadways proposed in the existing General Plan. Since the network would not be subject to the revisions proposed under GPA No. 960, development of the existing network would, by definition, have slightly greater traffic impacts. It would not achieve the circulation improvements that implementation of the newer network under GPA No. 960 would provide.

Lastly, while equal to or worse than the proposed project in most areas, this alternative is projected to have *less* significant traffic impacts than the proposed project in the area of temporal (short-term) traffic impacts (as reflected by Impact 4.18.A). As used here, temporal traffic impacts are those that occur in the interval between a roadway being identified as operating at an unacceptable LOS and that same roadway being improved in the manner necessary to bring the level of service back up to acceptability (for example, through road widening, the addition of an left-turn lane, a stop sign or a new signal at an intersection, or even the construction of an additional parallel road). In addition to the actual effects of congestion, these temporal traffic impacts could also result in temporarily significant increases in noise or air pollutant levels (for example, carbon monoxide "hot spots" that arise at heavily congested intersections).

Depending on the process triggered (i.e., private development requirements for construction, payment of TUMF fees to be used by the County of Riverside in enacting scheduled network improvements programmatically or improvements by RCTC, Caltrans or FHWA), the interval during which temporal traffic impacts would occur

before the necessary improvements were accomplished could be anywhere from weeks to months or even years. A Transportation Improvement Plan (TIP) addressing five years of future transportation improvement spending is updated annually by the County of Riverside and outlines the prioritization of the various competing roadway network improvements needed.

Under the existing General Plan's level of service specifications (i.e., General Plan Figure C-3), improvements are triggered when a roadway segment is found to be operating at LOS D or LOS E as defined by the figure's traffic volumes (average daily trips (ADT) for maximum two-way volumes). See Section 4.18 (Transportation and Circulation) for specifics. As proposed in GPA No. 960, these levels would be adjusted to lower the ranges for four-lane Mountain Arterials and extend (widen) the ADT ranges for many other roadway types (e.g., Arterial, Urban Arterials, Expressways, Freeways and Ramps). See Table 4.18-D for specifics. The traffic levels on the various network roadways would not change as a result of this revision, as these levels are generated by existing and future land uses both within and outside of Riverside County. Only the definitions associated with LOS C, D and E for certain road types would change. The broader ranges proposed, however, would result in an increase in the duration of temporal traffic impacts occurring along unimproved roadways.

Thus, because it uses the prior General Plan policies, the No Project/Status Quo Alternative would reduce the temporal traffic impacts associated with the proposed project. It would have less of a temporal traffic impact, as well as less associated noise and air quality impacts, than build out of the General Plan as updated by the proposed project, GPA No. 960.

h. Noise Impacts

For the existing General Plan, EIR No. 441 concluded that its mitigation measures would be sufficient to ensure that any noise impacts were reduced to less-than-significant levels. However, in some locations within Riverside County, current noise levels already exceed acceptable levels. As such, additional noise from future development would result in significant environmental noise impacts. EIR No. 441 notwithstanding, this alternative would have significant impacts due to exceeded noise standards, as well as due to substantial permanent and temporary noise increases.

As with air quality, this alternative would have slightly greater noise impacts than the proposed project due to the associated small increase in development potential, population, jobs and resultant traffic. Motor vehicle travel is the largest single source of noise generation in Riverside County and directly affects noise levels for receptors along roadways. As such, as traffic levels increase, noise levels affecting existing homes and other sensitive uses also increase incrementally. However, due to the widespread, incremental nature of these increases, it is not possible to avoid or mitigate such impacts to the thousands of homes and other uses that would ultimately be exposed to excessive noise levels over time. As such, it is assumed that, EIR No. 441 notwithstanding, future increases in long-term (operational) ambient noise, as well as short-term (construction) noise, that exceed standards would be cumulatively significant under this alternative. Overall, however, as noted in Table 6.4-D, the severity of all noise impacts associated with this alternative mirrors that expected for build out of the General Plan as amended by GPA No. 960.

i. Parks and Recreation Impacts

For the existing General Plan, EIR No. 441 concluded that its mitigation measures would be sufficient to ensure any impacts to existing or future parks and recreational facilities were reduced to less-than-significant levels. As with the other effects, this alternative would have slightly greater impacts than the proposed project due to the associated small increase in population resulting from the slight increase in residential development potential.

Although EIR No. 441 did not find General Plan build out would result in significant cumulative effects, this alternative is associated with a potentially significant cumulative effect on existing recreational facilities due to increased use.

j. Water Impacts

The slightly higher development potential associated with this alternative would mean that additional (future) demands are likewise slightly higher. In general, this means that additional potable water supplies and the infrastructure to treat and deliver such water would be needed within unincorporated Riverside County beyond already identified existing needs.

As outlined in Section 4.19.4.D, some portions of Riverside County already upon tightly constrained water resources. These include adjudicated groundwater basins (e.g., Temecula-Murrieta Basin, Riverside-Arlington Basin, Rialto-Colton Basin, etc.) and imported State Water Project (SWP) water (e.g., member agencies of the Metropolitan Water District of Southern California, such as Eastern and Western Municipal Water Districts and the retail suppliers to which they wholesale water). SWP water is apportioned out by the State of California (Department of Water Resources) according to a set of contractual priorities based on availability. As the water supply is greatly dependent upon the snow levels in the Sierra Nevada Mountains, imported water availability can vary greatly based upon annual snowfall and precipitation levels.

Thus, future development could result in significant impacts on existing water supplies (either imported or groundwater) if in a location already using water in excess of supply, i.e., drawing down a groundwater basin or, as is more common, exceeding future water availability. Where increases would be served by existing groundwater supplies, this would also result in significant drawdown or overdraft of existing groundwater basins. And, even in cases where the additional basin drawdown itself was not significant, it is likely that such increased use would contribute incrementally to a cumulatively significant impact on water basins already in overdraft or where the current basin withdrawals exceed its replenishment (which would eventually lead to depletion of the basin). Since California's water supply is finite and the State of California has identified critical constraints related to imported water availability, build out of Riverside County pursuant to this alternative would result in cumulatively significant impacts on imported water supplies.

k. Significant Cumulative Impacts

In general, most of the impacts found cumulatively significant for the proposed project are substantially similar to those that would occur for this alternative. However, as shown in Table 6.4-D, there are a few exceptions. For this alternative, new cumulatively significant impacts (i.e., those above that associated with the proposed project) would be associated with: changes to existing visual character, greenhouse gas emissions and regulatory conflicts, and inefficient use of energy. This alternative would also increase the number people and structures introduced into a region of California with known seismic and related geological hazards. On a cumulative basis, significant effects would be akin to those described for the project, but of increased scope based on the larger development capacity of the existing General Plan (as compared to the project's). Similarly, this alternative's impacts to public facilities would be similar to that of the project, but with correspondingly larger effects.

l. Growth Inducement

As clearly outlined above, with its slightly larger development potential and footprint, the No Project / Status Quo Alternative would accommodate a slightly larger population and workforce than the proposed project. As such, this alternative's growth-inducing effects would also be slightly higher than the project. Similar to that of

the project, most of this alternative's growth-inducing impacts would be significant and unavoidable. It would foster direct and indirect population growth and economic growth. This would also facilitate the construction of additional housing and lead to other significant environmental growth-related effects, such as encroachment into isolated areas and increased human trespass into remote areas.

m. Impacts to Cities

Under this alternative, it was assumed that growth within the cities would occur in accordance with each city's general plan as required by state law and the existing General Plan would dictate build out of unincorporated areas. See Table 6.4-C for RCCDR estimated build out results for incorporated Riverside County.

Though not addressed separately, the significant effects of this alternative on the cities within and adjacent to unincorporated Riverside County would be limited principally to cumulative effects caused by the incremental contributions arising from development in Riverside County. These significant cumulative effects would occur in areas where the additional contribution of future county development causes an impact to exceed a threshold or standard of acceptability. This would occur where development in unincorporated county areas bordered city areas or caused traffic, noise or other effects that carried over the municipal boundary. Significant cumulative effects to cities result from this alternative would include:

- Affects to scenic vistas and existing visual character within cities.
- Encroach on or conflict with existing agricultural uses within cities.
- Air quality effects where emissions occurring within Riverside County would affect air pollutant levels within cities, including for construction (short-term) and operational (long-term) emissions, particularly traffic-related emissions. Exposure of sensitive receptors within cities to air pollutants generated within Riverside County and cumulatively significant air quality impacts could also occur.
- Greenhouse gas emissions (to the extent that traffic generated by activities within the unincorporated county affected trips and congestion within cities).
- Noise level increases within Riverside County could affect levels within cities, including for construction (short-term) and operational (long-term) emissions. In particular, traffic-related noise increases could result in cities as a result of changes in county traffic patterns and/or increased trips.
- Where development within Riverside County would result in traffic increases, significant effects could occur in cities where links between city and county circulation networks interface. That is, increased traffic could affect cities in two ways: First, by causing traffic slowing on county roads that leads to slowing or backups on city roads. Second, when a county roadway becomes less able to accommodate traffic, drivers seeking alternate routes may end up traveling through cities. Lastly, development of land uses that attract visitors (such as regional shopping malls, medical centers, universities, casinos and other large-scale uses) within unincorporated Riverside County could increase trips on city roads that lead to/link to the use within the county.
- In locations where cities rely upon the same groundwater basins that also serve an unincorporated area, additional development within Riverside County could lead to significant demands on the existing water supply. Where a groundwater basin is already in overdraft or where future demands would exceed the recharge capability of the basin, both the city and county areas relying on the basin would be significantly affected.

- Where cities and unincorporated areas are both served by the same water district, additional development within Riverside County could increase demand on the existing imported water supply. Since such supplies are finite and subject to factors beyond the control of the water district (e.g., rainfall amounts, state mandates, court-ordered diversions for fish species in the Sacramento/San Joaquin Delta, etc.), increases exceeding the districts' ability to meet the need would result in significant impacts.

3. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. Since it does not address updated regulations that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning), it does not satisfy the address new needs objective. It would provide updated technical data, simply by definition. Lastly, it does not further the Riverside County Vision in any way since it does not "enhance" or "extend" the "continued progress" within Riverside County.

4. Conclusions

The significant impacts within Riverside County associated with this alternative are generally substantially similar to those anticipated for the proposed project. This alternative, however, proposes slightly (roughly 2-6%) higher levels of population, housing, workforce and employment-generating land uses. As such, even in instances where both the project and this alternative have similarly significant impacts, this alternative would be slightly more severe than the project.

Thus, overall the No Project/Status Quo Alternative would cause slightly more significant environmental impacts within the unincorporated portions of Riverside County, as indicated in Table 6.4-D. It would also result in several new significant impacts where the proposed project's would be less than significant (e.g., cumulative impacts due to GHG emissions and GHG reduction plan inconsistencies, in particular).

Taken together, the significant new greenhouse gas impacts and slightly higher significant impacts across many areas of environmental concern mean this alternative is not the environmentally superior alternative. Further, as outlined above, this alternative meets only one of five of the objectives of the project. This means that this alternative is not an acceptable means for achieving the stated project objectives. For these reasons, the No Project/Status Quo Alternative is deemed not the preferred alternative.

C. Agricultural Emphasis Alternative

Between 2000 and 2006, Riverside County loss roughly 30% of its existing agricultural lands to conversions made in the face of increasing development pressure. Although agriculture is this county's largest industry in terms of dollars, agricultural decline continues as urban uses encroach upon agriculture operations and economic pressures (including the price of water supplies) make conditions ever more tenuous for Riverside County's farmers and ranchers.

Not surprisingly, one of the significant impacts of build out of either the existing General Plan or the General Plan as updated pursuant to GPA No. 960 (i.e., the proposed project for the purposes of the alternative analysis) is loss of agricultural lands to non-agricultural uses and encroachment of non-agricultural uses into agricultural

areas. Both EIR No. 441, certified for the 2003 RCIP General Plan, and this EIR for GPA No. 960, find these impacts to be significant and unavoidable. Hence, this alternative is proposed as a means for addressing (lessening) this significant impact. In addition, this alternative also addresses the cumulatively significant wildfire hazards associated with build out of the project or existing General Plan by shifting roughly 25,000 future homes from remote, wildfire-prone rural areas to more accessible urban/suburban regions.

1. Assumptions

Under the existing General Plan, LUD changes from the Agricultural Foundation (i.e., the Agriculture, AG, LUD) are mostly exempt from the restrictions of the Certainty System review cycle. With key exceptions, the Certainty System limits LUD changes from lower density/intensity Foundations to once every eight years. As an example: per the Certainty System, a proposal without extenuating circumstances to change a parcel's LUD from Rural Residential, which is in the Rural Foundation, to Medium Density Residential in the Community Development Foundation, would only be allowed during the eight-year window opening. For AG LUDs, however, the removal of land from the Agriculture Foundation is allowed to occur on a quarterly basis within any given year.

This Agricultural Emphasis Alternative posits a change in the General Plan that recognizes the development pressures threatening the agriculture industry in various communities of this region. And, as a result, places Agriculture Foundation amendments back with other Foundation Components in requiring adherence to the main eight-year General Plan Certainty System review cycle for all parts of Riverside County except the Eastern Coachella Valley Area Plan (ECVAP). For lands within the ECVAP, Agriculture Foundation amendment proposals would continue to be permitted on a quarterly basis. They would also, however, be required to set aside at least 50% of the site's existing agricultural lands to be preserved in permanent agricultural easements.

This provision was intended to allow agriculture operators the option to change the foundation and land use designation when agriculture operation becomes unviable. There are many factors in the decision to continue agricultural operation or to convert into urban uses, such as the cost of operation versus economic gain, water availability, favorable growing conditions, advancements in agronomy, urban encroachment, non-compatible uses, etc.

The development (build out) scenario developed for the Agricultural Emphasis Alternative is based on the existing (2008 for the purposes of this EIR) General Plan. To it, the following specific changes were applied:

Fish Farms: The changes proposed in GPA No. 960 to recognize and protect aquiculture (fish farms) in the Salton Sea region as agricultural uses are also made under this alternative. Specifically, a total of roughly 800 acres of lands currently designated by other, non-agricultural LUDs would be re-designated AG. (The LUDs changed include roughly 200 acres of single-family residential uses, 100 acres of multi-family residential uses, 200 acres of industrial uses and 300 acres of open space-water (OS-W), so designated because of their proximity to the shores of the Salton Sea.)

Open Space-Rural: The existing General Plan includes roughly 1,930,000 acres of lands designated as open space-rural (OS-RUR) which is associated with a minimum lot size of 20 acres per unit (per General Plan Table LU-4). According to General Plan Appendix E-1 (Table E-1), the average (midpoint) lot size for OS-RUR is 40 acres per unit. Because much of this land has limited access, utilities or other constraints, a basic assumption was applied that only 65% of the total area would be potentially suitable for rural residential (OS-RUR) development; the other 35% was assumed would remain vacant. This split left 1,254,400 acres in the residential OS-RUR category with the remaining 675,500 acres assumed to remain vacant. (Note, this development pattern assumption was applied equally to all of the alternatives considered in this Alternatives Analysis.)

The 65-35 split is based on the original analysis used to derive the mid-point assumptions established in General Plan Table E-1. The stated minimum lot size for OS-RUR is 20 acres, but the midpoint analysis shows the average lot size is twice that. This doubling in lot size indicates roughly 50% of land would not end up with its own unit under the midpoint scenario. Thus, a roughly 50-50 split was necessary in order to avoid drastically overestimating the number of homes that were likely to be realized in the most remote, rural portions of Riverside County. This is important because an artificially inflated residential total for the OS-RUR area would result in reallocation of an inappropriately high number of dwelling units to the urban and suburban portions of Riverside County (see "Rural Density Transfer," below). Conversely, the 50-50 value was adjusted to 65-35 to avoid underestimating the number of homes ultimately likely in the remote rural county, which would lead to underestimating the environmental impacts to these open space areas, particularly regarding biological resources. The 65-35 split ensures biological, cultural, geological and other spatial impacts associated with this alternative are estimated conservatively.

Additional Agricultural Uses: Since the OS-Rural land use category encompasses the most total acreage of any single Foundation (even after being reduced by 45%) and spans the breadth and width of unincorporated Riverside County, it was identified as a reasonable source for additional agricultural activities. Specific to this alternative, the 1,254,400 acres remaining in the residential OS-RUR category was split with 20% (250,900 acres) added to the AG land use designation and the 80% remainder (1,003,500 acres) added to the Open Space-Conservation (OS-C) land use category. This additional agricultural land would foster the continuance of a robust agri-based economy in Riverside County, while the additional open space would enhance Riverside County's biological conservation efforts and ensure sufficient buffering between the agricultural areas and other uses (both developed and open space). It is also assumed for this alternative that all existing agricultural lands remain in agricultural uses (i.e., undeveloped and vacant, fallow, cultivated or built up with agriculture-related uses).

Rural Density Transfer: Lastly, the transfer of 1,003,500 acres of OS-RUR to OS-C would result in a reduction in development potential of roughly 25,100 dwelling units (du) per General Plan Table E-1. (The other 20% would not lose housing potential since housing is allowed under the AG land use). To accommodate the lost units and ensure that private property retains value, this alternative would permit the transfer of development rights from the altered acreage to certain urban or suburban uses. The 25,100 du were transferred to the other residential uses within Riverside County, as follows:

- + 1,000 du to Rural Residential (shared among RR, RM and RD uses)
- + 10,000 du to Single-Family Residential (EDR/VLDR/LDR category)
- + 5,600 du to Single-Family Residential (MDR use)
- + 6,000 du to Multi-Family Residential (MHDR use)
- + 2,500 du to Multi-Family Residential (shared among HDR/VHDR/HHDR and the mixed use residential [MUPA / CC] category)

High Fire Hazard Reduction: In addition to addressing agricultural issues, this alternative is also designed to address wildfire hazards, which are a cumulatively significant hazard associated with the proposed project (as well as existing General Plan) build out. This alternative reduces the area developed as residential by shifting OS-RUR lands areas, which encompass a large amount of area in "high" or "very high" fire hazard severity zones (as indicated, for example, by Figure S-11 of the General Plan), to AG (20%) or OS-C (80%). Both these alternate designations are generally associated with much lower levels of development and, hence, wildfire hazards. Areas of OS-C, in particular, generally are not developable and thus provide substantial reductions in future wildfire

risks. In total, as a result of this change roughly 25,000 fewer homes would be introduced into the rural and remote portions of Riverside County. This would greatly reduce the increase in wildfire risks to people, property and structures, which benefits the entire region.

Additional Assumptions: All of the general assumptions outlined at the beginning of this section also apply. There are no exceptions or changes to them for this alternative, or additional assumptions beyond those already covered above.

a. Baseline Assumptions

As with all of the other alternatives, as well as the rest of the EIR for that matter, the starting baseline assumptions for the Agricultural Emphasis Alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. For example, Section 4.5 (Agricultural and Forestry Resources) provides information on existing Farmland designations, mapped Agricultural Preserve locations and lands designated AG LUD in the General Plan, etc., within Riverside County. These baseline conditions apply to both the incorporated and unincorporated portions of Riverside County. See Table 6.4-E (Agriculture Emphasis Alternative – Assumptions and Projections) for the full baseline data set used for this alternative. See the footnotes to this table for additional comments on the baseline assumptions.

Table 6.4-E: Agriculture Emphasis Alternative – Assumptions and Projections

Agricultural Emphasis Alternative ASSUMPTIONS [7]	Baseline: Existing (2007) Conditions [1, 3]			Build out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Land Uses						
Residential	109,600 ac	113,700 ac	**223,300 ac**	470,700 ac	186,100 ac	**656,800 ac**
Commercial [8]	27,200 ac	31,800 ac	**59,000 ac**	9,200 ac	31,800 ac	**41,000 ac**
Industrial [9]	124,200 ac	121,400 ac	**245,600 ac**	80,400 ac	121,300 ac	**201,700 ac**
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	441,400 ac	61,000 ac	**502,400 ac**
Open Space [10]	757,000 ac	11,300 ac	**768,300 ac**	1,331,300 ac	34,000 ac	**1,365,300 ac**
Vacant & Other [11]	2,766,000 ac	206,500 ac	**2,972,500 ac**	1,677,900 ac	109,100 ac	**1,787,000 ac**
Total Acres	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**
Socioeconomic Data						
Dwelling Units	207,000 du	566,500 du	**773,500 du**	529,700 du	1,040,400 du	**1,570,100 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	1,721,700 pers	3,006,700 pers	**4,728,400 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	606,100 jobs	1,318,200 jobs	**1,924,300 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	1.16	1.27	**1.23**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	1.11 du/ac	5.59 du/ac	**2.39 du/ac**

Footnotes:
1. Source for land use, existing: EIR Table 4.2-F.
2. Source for land use, build out: Modeled for alternative (Unincorporated County) and estimated from RCCDR 2012 data for "Cities, Build out."
3. Source for socioeconomics, existing: EIR Table 4.3-G.
4. Source for socioeconomics, build out: EIR Table 4.3-G for the cities and modeled for alternative (Unincorporated County).
5. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are included in the unincorporated baseline county totals, rather than the incorporated totals.
6. "Build out" conditions are those projected for full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. All development within the unincorporated portion of Riverside County occurs as directed by the existing (2008) Riverside County General Plan. No additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
7. All values rounded to the nearest hundred. Thus, totals may not sum precisely.
8. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
9. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
10. Open space uses include conservation lands, as well as water (lakes, etc.).
11. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.

Source: See footnotes, above, for data sources.

b. Build Out Assumptions

For this particular alternative, it is assumed that no other changes to the General Plan are made and that the unincorporated portions of Riverside County build out as directed by the existing General Plan. The assumptions and land use changes described above were then applied, resulting in a build out scenario specific to the Agricultural Emphasis Alternative. See Table 6.4-E, above.

2. Environmental Implications

Pursuant to Section 15126.6(d) of the State CEQA Guidelines, Table 6.4-F (Agricultural Emphasis Alternative – Environmental Effects Summary), below, outlines in matrix form the significant environmental effects of the Agricultural Emphasis Alternative. A discussion of the alternative's significant environmental effects follows. Where the alternative would cause a significant effect beyond that of the proposed project, it is discussed below.

Table 6.4-F: Agricultural Emphasis Alternative – Environmental Effects Summary

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.2 – Land Use							
4.2.A	Physically divide an established community.		•				=
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.		•				↓
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				↓
4.3 – Population and Housing							
4.3.A	Induce direct or indirect population growth.					◊	↑
4.3.B	Displace residential units.		•				↓
4.3.C	Displace people.		•				↓
4.4 – Aesthetic and Visual Resources							
4.4.A	Adversely affect scenic vistas.			•		•	↓
4.4.B	Adversely affect scenic resources within State Scenic Highways.			•			↓
4.4.C	Adversely affect existing visual character.			•			↓
4.4.D	Cause adverse light and glare effects.		•			•	↓
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•				↓
4.5 – Agricultural and Forestry Resources							
4.5.A	Cause the direct or indirect conversion of designated Farmlands.		•				↓
4.5.B	Encroach on or conflict with existing agricultural uses.		•				↓
4.5.C	Adversely affect forest lands and forestry uses.		•				↓
4.6 – Air Quality							
4.6.A	Conflict with air quality plans.			•	•	•	↑
4.6.B (1)	Cause significant construction (short-term) air emissions.				•	•	↑
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↑
4.6.C	Cause cumulatively significant project air quality impacts.				•	•	↑
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↑
4.6.E	Expose substantial numbers of people to objectionable odors.			•			↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.7 – Greenhouse Gases							
4.7.A	Generate substantial greenhouse gas emissions.			•		◊	↑
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.			•		•	↑
4.8 – Biological Resources							
4.8.A	Adversely affect riparian or other sensitive habitats.			•			↓
4.8.B	Cause direct and indirect impacts to protected species or their habitats.			•			↓
4.8.C	Adversely affect wetlands.			•			↓
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.			•			↓
4.8.E	Conflict with adopted habitat conservation plans.		•				↓
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				↓
4.9 – Cultural and Paleontological Resources							
4.9.A	Adversely change the significance of historical resources.		•				↓
4.9.B	Cause the destruction of known archeological resources.			•			↓
4.9.C	Cause the destruction of unique paleontological resources or sites.		•				↓
4.9.D	Result in the disturbance of human remains.		•				↓
4.10 – Energy Resources							
4.10.A	Increase demand for electricity.		•			◊	↑
4.10.B	Increase demand for natural gas.		•			◊	↑
4.10.C	Cause the inefficient use of energy.		•				↓
4.11 – Flood and Dam Inundation Hazards							
4.11.A	Result in housing within flood hazard areas.		•				↑
4.11.B	Cause impediment of flows.		•				↑
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•				↑
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•				↓
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				↑
4.12 – Geology and Soils							
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.		•				↑
4.12.B	Expose people or structures to substantial strong seismic groundshaking.		•			•	↑
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.		•				↑
4.12.D	Expose people or structures to substantial adverse effects due to landslide.		•			•	↓
4.12.E	Result in substantial soil erosion or topsoil loss.						↓
4.12.F	Result in development on unstable geological units or soils.		•				↓
4.12.G	Result in development on expansive soil.		•				↓
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.		•				↓
4.13 – Hazardous Materials and Safety							
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•				↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•				↑
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•				↑
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•				↑↓
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•				↑
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.		•				↑
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↓
4.13.H	Expose people or structures to significant risk due to wildland fire.		•				↓
4.14 – Mineral Resources							
4.14.A	Result in the loss of availability of delineated locally important minerals.	•					=
4.14.B	Result in the loss of availability of known mineral resources.		•				↓
4.15 – Noise							
4.15.A	Generate noise or cause noise exposure in excess of standards.				•	•	↓
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↓
4.15.C	Result in a substantial permanent increase in ambient noise levels.				•	•	↓
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.				•	•	↓
4.15.E	Expose people to excessive airport-related noise levels.		•				↓
4.16 – Parks and Recreation							
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.		•			•	↑
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•				↑
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•				↑
4.17 – Public Facilities							
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•				↓
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•		•	↑
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•		•	↑
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the County Integrated Waste Management Plan.		•				=
4.17.D	Cause adverse environmental effects due to the need for schools.		•			•	↑
4.17.E	Cause adverse environmental effects due to the need for library services.			•		•	↑
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•		•	↑
4.18 – Transportation and Traffic							
4.18.A	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.				•	•	↓[6]
4.18.B	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				•	•	↓[6]
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				=
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				=
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				↑
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.18.G	Cause an adverse effect on circulation during construction.		•				=
4.18.H	Result in inadequate emergency access.		•				↓
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				↓
4.19 – Water Resources							
4.19.A	Result in insufficient water supply.				◊	◊	↑
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.				◊	◊	↑
4.19.C	Substantially degrade water quality.		•				↑
4.19.D	Violate water quality standards or waste discharge requirements.		•				↑
4.19.E	Exceed wastewater treatment requirements.		•				↓
4.19.F	Exceed wastewater treatment capacity.		•				↓
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•			◊	↑
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.		•			•	↑
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.		•				↓
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.		•			•	↓
5.2 – Significant Irreversible Changes							
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.				•	•	↑
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				=
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.				•	•	↓
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				=
5.4 – Significant Growth-Inducing Effects							
5.4.A	Foster direct or indirect economic growth.				•	•	↑
5.4.B	Foster direct or indirect population growth.				•	•	↑
5.4.C	Result in construction of additional housing.				•	•	↑
5.4.D	Remove obstacles to population growth.		•				=
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.		•		•	•	↓
5.4.F	Result in population increase that may strain community services or facilities.				•	•	↑

Footnotes:

1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; ↓↑ = areas of each result; and, **=** , approximately the same.
5. Shaded yellow boxes denote impact finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.
6. Note: Decrease only applies to vehicle trips on public roads, not off-road operations associated with agricultural uses.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

Overall, the shifting of open space-rural land uses to agriculture and conserved open proposed under this alternative serves a number of complimentary purposes. Even though open space conservation is increased greatly, with the increase in agricultural uses, this alternative would yield an increase of nearly 9,000 dwelling units and over 44,000 jobs, plus a population increase of 19,000 people as compared to build out under the updated General Plan. It does so by expanding the agricultural footprint of Riverside County and slightly increasing the average densities of the developed (urban and suburban) portions of unincorporated Riverside County. (From an average density of 1.8 to 2.0 du/ac for single-family residential uses and from 8.3 to 8.7 du/ac for multi-family residential.) The restriction on Agriculture Foundation conversion would focus suburban and urban development in areas mapped and already planned for such uses, both within Riverside County unincorporated areas as well as in cities.

As shown in Table 6.4-F, this alternative would have a number of significant environmental effects (either individual, in localized areas or cumulative). Certain of these significant environmental effects would be substantially worse than those associated with the project-updated General Plan. These effects, which are discussed further below, include:

- Induce direct or indirect population growth (within the urban areas benefitting from rural density transfers).
- Increase greenhouse gas emissions.
- Increase demand for energy (electricity and natural gas).
- Increase demand for water supplies, both imported and groundwater.
- Cause significant environmental impacts due to the construction of additional infrastructure needed to harvest and/or deliver additional water to meet demand.

a. General Impacts

Overall, as indicated in Table 6.4-F, the Agricultural Emphasis Alternative would generally have environmental effects similar to, but slightly (2-8%) greater than, the proposed project's within the urban and suburban portions of Riverside County because of the slight increase in housing, jobs and population that this alternative would realize from the increased densities and agricultural uses. Despite these increases, the elimination of the OS-RUR land use with 80% reallocated as OS-C would result in a county development footprint that is over a million acres (over 1,500 square miles) smaller than currently proposed.

Thus, in general, when compared to the environmental impacts associated with build out of the existing General Plan, this alternative would have substantially fewer significant environmental impacts related to spatial effects within the Riverside County development footprint. These include reductions in impacts to: aesthetic and visual resources, biological resources, cultural resources, mineral resources and floodplains, hydrology, geology and, of course, agriculture. In particular, the decreased footprint would result in a substantial reduction in wildland fire risks and substantially less encroachment into isolated and remote areas.

Conversely, with the density and intensity increases within urban and suburban areas, this alternative would have slightly increased population-driven impacts, including: air quality, water and energy demand, exposure to seismic and geologic risks, exposure to hazardous materials and demands for various public services and facilities, including law enforcement services, wastewater treatment, schools, libraries and medical services, as well as parks and recreational opportunities. None of these population-based increases would be substantially greater than

those predicted for the proposed project, however. Key items related to these impacts are discussed more fully below.

b. Agricultural Resource Impacts

Under this alternative, agricultural uses would continue and prosper throughout Riverside County. This alternative proposes for agricultural-designated land use to more than double compared to existing plans and the conversion of agricultural lands to non-agricultural uses would be halted or substantially limited. The existing General Plan has 189,700 acres designated as agriculture (i.e., AG LUD) and the General Plan, as updated pursuant to GPA No. 960, would have 188,900 acres designated AG. SCAG data on existing uses of land, however, reflect a total of roughly 226,900 acres of agricultural uses currently within unincorporated Riverside County. Thus, build out of either scenario would result in a loss of 37,200 acres (existing General Plan) to 38,000 acres (updated General Plan). The 441,400 acres proposed under this alternative would more than ensure that no existing agricultural uses need be lost to development.

Under this alternative, the rate of conversion, amount, extent and distribution of development in and around agricultural areas would be greatly reduced outside of the ECVAP area. Agricultural conversion would still be permitted quarterly in the eastern Coachella Valley region, but with the 50% easement requirement, based on existing agriculture designations, at least 23,000 acres of agricultural lands would remain protected.

Overall, by limiting and slowing the introduction of new development in close proximity to existing agricultural operations, this alternative would also greatly reduce the effects of potential land use incompatibility and the effects of urban/suburban encroachment into agricultural areas. While some nuisance impacts associated with agricultural operations (e.g., noise, dust, odors) would still occur, the homogenous nature and broad dispersal pattern of the agricultural areas, when compared to the existing General Plan or the proposed project, would ensure such impacts are less than significant.

c. Housing Impacts

California's Housing Element law requires that each city and county develop local housing programs designed to meet its "fair share" of housing needs for all income groups, as determined by the jurisdiction's Council of Governments, when preparing the state-mandated Housing Element of its General Plan. This fair-share allocation concept seeks to ensure that each jurisdiction accepts responsibility for the housing needs of not only its current population, but also for those households who might reasonably be expected to reside within the jurisdiction, particularly lower-income households. Overall the County of Riverside was able to meet the majority of its quantified objectives for the 1998-2005 planning period per the General Plan Housing Element. However, with respect to units for very low, low and moderate income families, additional homes are needed in Riverside County per RHNA targets. Although the County of Riverside did produce over 12,500 units, it was almost 6,000 units short of the RHNA targets in these three categories.

The RHNA allocation for Riverside County for the subsequent eight and a half-year planning period as approved by SCAG in July 2007 represents an increase of approximately 26,500 units over the prior (1998-2005) RHNA period. Evaluation of residential-designated vacant lands under the existing General Plan finds that RHNA targets would be met within both the western and eastern portions of Riverside County, with the exception of the Low Income target in the western county, which would be 1,300 dwelling units short. The available land analysis does not formulate dependence on agricultural land use designation conversions to meet future housing needs. Additional land use conversion to accommodate the projected deficit may occur in the western county, resulting in pockets of higher densities development.

Under this alternative, the reallocation of densities includes over 17,000 du of multi-family residential LUDs. With their higher densities, these categories are particularly well-suited for addressing low-income housing needs. Thus, this alternative would be a substantial improvement over the existing General Plan in terms of enabling low-income housing availability.

d. Biological Impacts

Within Community Development Foundation areas, impacts associated with this alternative would be slightly higher due to the slightly increased densities. Existing mitigation, such as compliance with the requirements of the WR-MSHCP and CV-MSHCP, would ensure that biological impacts associated with this alternative were less than significant. Even though less than significant, however, this alternative would result in a substantial reduction in the extent of biological impacts due to the million-plus acre reduction in the overall size of the development footprint within Riverside County. With 1,003,500 acres shifting from rural residential (OS-RUR) to conservation (OS-C) under this alternative, the effects of human encroachment, edge effects, habitat disturbance and similar effects would be greatly reduced. As such, this alternative would have less impacts to biological resources than either the existing General Plan or the proposed project.

e. Wildfire and Fire Protection Impacts

For reasons similar to that of biology, this alternative would also provide a substantial reduction in cumulative wildfire risks and, hence, demands on fire protection services. Under the existing General Plan, over 50,000 homes would be possible scattered throughout the million-plus acres of existing OS-RUR lands. Diffuse rural residential development in remote and isolated areas us the type of development pattern most vulnerable to wildland fires. These residences are also the most problematic for fire protective services to defend, given their remote locations, unimproved (dirt) access roads and lack of readily-accessible water supplies. By reallocating 50,000-plus homes from the most rural areas of Riverside County and reducing the overall development footprint by over a million acres (1,500-plus square miles), the potential for people, structures and property to be put at risk for wildland fires is greatly reduced under this alternative compared to that of either the existing General Plan or the proposed project.

f. Air Quality Impacts

As described more fully under for the Added Community Centers Alternative (Section 6.4.D, below), simulations (modeling) were run for various alternative scenarios in order to elucidate the effects of the various competing factors influencing air quality and greenhouse gas emissions, as well as traffic. Towards this end, several land use simulations were developed and modeled via the South Coast Air Quality Management District's (SCAQMD's) CalEEMod software. Results of the modeling indicate that this alternative would result in increased operational air pollutant emissions (for example, ROG, NOx and total PM-10), despite a projected decrease in VMTs. This increase occurs despite the VMT decrease because, while the number of miles traveled on public roads, such as freeways and arterials, would decrease, the number of miles traveled off-road (that is on the farmlands themselves) in association with the increased agricultural uses would increase (e.g., taking into account operation motorized farm equipment, such as tractors, threshers, trucks, etc.). Thus, air pollutant emissions would increase, even though the traffic volumes on public roads would decrease. In addition, the increased number of homes and employment sources (agricultural, as well as related commercial and industrial uses) would also contribute to increased air quality pollutant emissions.

Although increased, however, analysis indicates this alternative's air quality impacts would be generally similar to, if somewhat greater than, those associated with build out of either the existing or updated General Plan. For

build out of the existing General Plan, EIR No. 441 found there would be several significant and unavoidable air quality impacts, even after the implementation of all feasible mitigation. Significant short-term air quality emissions, particularly of fugitive dust (PM_{10}), would occur during construction activities, such as site preparation, as well as seasonally during specific agricultural activities, such as disking or plowing, for example. Likewise, significant long-term air pollutant emissions would occur from stationary sources within Riverside County in cumulatively-significant, if not individually significant, levels that exceed applicable air quality standards. For this alternative, such impacts would be substantially the same.

In addition, these significant emissions would also collectively result in the exposure of sensitive receptors (including children, the elderly and the infirm) to substantial air pollutants, particularly where increased densities under this alternative would increase the number of people within close proximity (500 feet or less) to freeways and other high-volume traffic sources, warehouses and other industrial uses associated with high diesel and other particulate emissions. Both the alternative and the existing General Plan build out scenarios, in addition to that of the proposed project, would result in significant impacts. Lastly, within the rural agricultural areas, it is possible that fugitive dust impacts would be greater since dust generation is a common hazard associated with land cultivation (disking, plowing, planting, harvesting, etc.) and the amount of agricultural lands would more than double under this alternative.

g. Greenhouse Gas Impacts

As with air pollutants, this alternative would generate slightly more GHG emissions than the proposed project due to the associated small increase in development potential, population, jobs and vehicle operations, particularly off road. As a result of these increases, CalEEMod simulations indicate that GHG emissions would also increase if no actions are taken to mitigate them. Since the existing General Plan was originally adopted prior to the establishment of the various GHG reduction policies, programs and goals in California, it does not currently address the issue. However, the assumption that a Riverside County CAP of some sort would be adopted as part of this alternative resolves this issue and that GHG reduction measures would be implemented. However, because off-road vehicle operations are difficult to reduce through traditional means (e.g., increasing use of carpools, mass transit, bicycles, etc.), it is unlikely that significant GHG emissions could be reduced to less-than-significant levels under this alternative. Therefore, this alternative would likely result in significant GHG emissions above those projected for project-updated General Plan build out.

Pursuant to AB 32, the State of California issued a Scoping Plan outlining measures to achieve greenhouse gas reduction targets. A key focus of reduction plans is centralizing development impacts within urban areas as a means for reducing VMT. Thus, even with the additional emissions associated with off-road (i.e., agricultural) equipment and vehicle operations, associated GHG emissions would be offset, at least in part, by the savings derived from the higher urban/suburban residential densities also proposed. By reducing the overall development footprint of unincorporated Riverside County by over a million acres and reallocating 50,000-plus homes into more urban/suburban areas, this alternative would further the VMT reduction goals established by SCAG pursuant to SB 375 and, therefore, AB 32 GHG reduction goals would be advanced as well.

h. Energy Impacts

The increased number of homes associated with this alternative would generally result in greater demand for connection to existing infrastructure (particularly for electricity and natural gas)

However, the smaller residential units (particularly multi-family homes) facilitated by this alternative generally achieve better energy efficiency and improved energy conservation than compared to the larger rural homes that

would be facilitated under the existing General Plan and proposed project. Attached unit, for example multi-family apartment buildings, are associated with greater energy and water savings. The improved energy efficiency of this alternative would, however, be offset by the increased amount of electricity necessary to provide sufficient water supplies to serve the increased agricultural and economic uses proposed. (Assuming such water imports are even available; see water supply discussion, below.) Water use in California consumes significant amounts of energy and agricultural uses rely heavily on water supply. Research by the California Energy Commission (CEC) indicates that overall, water-related energy needs consumed 19% of all of California's electricity used in 2001 (roughly 48,000 GWh out of 250,500 GWh total). This included over 10,500 GWh dedicated to agricultural water supply and end use. (See page 5 of the CEC's report, "California's Water-Energy Relationship," (CEC-700-2005-11-SF), 2005.)

However, even though agricultural water use encompasses roughly 80% of all water used in the state, agricultural uses account for only 30% of all water supply and treatment needs; the other 70% is used by urban water users (residential, commercial and industrial uses). On-farm agricultural water use consumes an additional 15% of water-related electricity. Water for urban uses requires additional energy input to meet regulatory standards for consumption. By emphasizing agricultural uses, this alternative would increase (up to nearly double) the amount of electricity required for water-related uses. Overall, demand for agricultural water, combined with the increase in homes and employment uses, means that incremental increases in electricity demand would be cumulatively significant for this alternative.

Lastly, urban water uses (particularly water heating for homes and businesses, as well as industrial boilers) account for nearly all (99.5%) natural gas use. Thus, the increase in residential units proposed under this alternative would result in an increase in natural gas demand as well. Though substantial, none of these significant energy impacts are new, however, since demand for electricity and natural gas was already projected to be cumulatively significant at General Plan build out with GPA No. 960.

i. Traffic and Circulation Impacts

Under this alternative, a greater proportion of Riverside County's expected population growth would be accommodated in urban areas, instead of rural, wildland and interface areas, as a result of the density transfers proposed. By moving people into areas of higher residential densities and associated economic uses (retail, commercial, industrial, etc.), the total VMT on public roads, such as freeways, county arterials, etc., can be decreased as needed services, jobs and other trip destinations are located closer. In addition, these trips would be concentrated into an area roughly 1,500 square miles smaller than under the existing General Plan or the proposed project. Accordingly, for this alternative, the CalEEMod simulation run indicated decreased VMTs, despite the increased number of residents and workers. The increased densities and intensities in the urban centers would also have beneficial effects on non-vehicular transportation; making pedestrian travel, bicycle and mass transit use more amenable to the public.

In terms of roadways, a smaller VMT increase means traffic congestion would be less severe at build out. Fewer improvements would be needed for the freeway and local roadway networks to ensure adequate levels of service (LOS) are maintained along the networks' roadway segments and intersections. In areas where existing roadway capacities are already functioning at unacceptable levels, additional increases in traffic would occur more slowly, delaying the incremental contributions to cumulatively significant congestion levels. In total, although this alternative would reduce traffic impacts, as compared to project-updated General Plan build out, these impacts would still be both individually (for specific road segments and intersection) significant and cumulatively considerable. They would not, however, be substantially higher than levels forecast for build out of either the existing or project-updated General Plans. These are not new substantial impacts, however, since traffic impacts were already projected to be significant, both individually and cumulatively, at build out for GPA No. 960.

Despite lower on-road miles travel, this alternative would also increase the number of off-road miles traveled in association with the increase in agricultural uses. As noted under the air quality discussion above, even though these increases affect air pollution and GHG levels, they do not greatly affect vehicle traffic on public roads; agricultural vehicles and equipment are operated primarily on farmlands. Truck traffic on public roads may, however, increase as the amount of produce and other agricultural products shipped out of Riverside County increases. Again, these increases are offset by decreases in other (i.e., urban) VMTs. In conjunction with the agricultural traffic increases, adverse effects associated with incompatible uses (i.e., Impact 4.18.E) would also increase, although not to levels substantially higher than those projected for project-updated General Plan build out.

All other transportation-related impacts associated with this alternative would be substantially the same as those for the existing General Plan and the proposed project, except in two areas. Because of the million-plus acre reduction in rural development footprint, emergency access impacts would be less substantial under this alternative. Roughly 50,000 fewer homes would be built in rural, remote or isolated areas in which emergency vehicles access would be difficult and emergency evacuation, for example in the event of a wildfire, would be perilous. Both this alternative and the proposed project would have less-than-significant effects in this area. Secondly, in terms of public transit and non-motorized travel, the slight increase in housing density proposed under this alternative would also slightly lower the already insignificant impacts of the proposed project. Also, the smaller development footprint also makes transit, walking and other alternate forms of transportation more viable within a community.

j. Noise Impacts

Since motor vehicle travel is the largest single source of noise generation in Riverside County, keeping VMTs from rising directly affects (decreases) the build out noise levels for receptors along roadways. Thus, the lower total on-road VMTs predicted for this alternate (as compared to project-updated General Plan build out), would result in fewer significant noise impacts within Riverside County. Although not new, this alternative would nevertheless have some impacts that would be individually (locally) significant or cumulatively considerable.

In some locations existing (baseline) noise levels already exceed acceptable standards. As such, the VMT resulting from this alternative, particularly from agricultural vehicles increasing off-road noise levels, would further exacerbate such impacts. Agricultural equipment noises tend to be occasional or periodic, for example used only during harvest or for sowing new crops, etc., and thus do not significantly affect long-term ambient noise levels in most areas. However, due to the widespread, incremental nature of traffic-related noise increases, it is not possible to avoid or mitigate all significant ambient noise impacts to the thousands of homes and other uses that would ultimately be exposed to excessive noise levels over time. Thus, future increases in (long-term) ambient noise, as well as short-term (construction or agricultural) noise, exceeding standards would be cumulatively significant under this alternative. These significant noise impacts, however, would be substantially similar in scale to those forecast for build out pursuant to GPA No. 960; they do not represent new substantial impacts associated with this alternative.

Where lands designated for rural residential (OS-RUR) would be reallocated to conserved open space (OS-C), noise impacts would be reduced because fewer homes would be built in the rural, remote and isolated portions of Riverside County. In these areas, noise levels are generally already low, but because of the natural quietness of these areas, even small additional noise sources can be bothersome. Thus, the reduced development in these areas would be very beneficial to lowering noise levels contributing to biological "edge" effects and other issues affecting the suitability of open space for wildlife use.

k. Public Facilities, Parks and Recreation Impacts

As with other population-based effects, the slight (2%) increase in population that would be accommodated by this alternative would result in slightly higher impacts to parks and recreational facilities and other public facilities (including schools, libraries, landfills, medical facilities, government facilities, etc.) Among other things, this would also increase the effects of use (e.g., wear and tear) on existing parks, recreational and other public facilities, as well as increase the need for additional facilities to serve the growing populace. As with the existing General Plan, this alternative would also result in a number of significant cumulative effects on public facilities as well; as shown in Table 6.4-F.

l. Water Impacts

Under this alternative, lands designated as agricultural (AG LUD) would more than double, from 189,700 acres in the existing General Plan to over 441,000 acres, and the rate of allowed agricultural conversions, i.e., redesignating agricultural lands to non-agricultural uses, would be greatly reduced (allowed once every eight years rather than four times a year). This would help protect the roughly 227,000 acres of current agricultural uses within unincorporated Riverside County at present and encourage the expansion accommodated under this alternative. This expansion would substantially increase the need for irrigation water, roughly doubling demand for agricultural water alone.

Increased agricultural demand would be slightly (approximately 1,000 acre-feet per year) offset by the 1.2 million acres removed from Riverside County's residential development footprint. The increase in higher-density urban homes replacing large-lot rural and estate density residences (which typically use much more water) would reduce the overall amount of domestic (potable) water demand and also decrease the amount of water used for residential landscape irrigation. Wastewater generation would also be lower.

Since California's water supply is finite and the State of California has identified critical constraints related to imported water availability, the increased water demand associated with this alternative would substantially increase environmental impacts to water resources, particularly to supply necessary agricultural water (which may be non-potable); in particular, build out of Riverside County pursuant to this alternative would result in cumulatively significant impacts on imported and local water supplies. In addition to using water for irrigation, use of water would also increase for related agricultural and industrial activities, such as watering livestock, producing milk (i.e., dairy use) and food processing (washing, etc.). Further, if the cost for imported water continues to increase (particularly due to increasing scarcity and continuing increases in electricity costs; see energy discussion), this could have be a severely limiting factor in the economic viability of continued agricultural production within Riverside County. With demand increasing greatly, there would also be the potential for significant environmental impacts to occur as a result of the construction of additional infrastructure needed to harvest, treat and deliver additional water, or recycle or otherwise reclaim existing water.

In terms of other water impacts, fewer homes built in areas outside of water agency service areas would mean decreased reliance on local groundwater. Additionally, the decreased housing total in rural wildland and interface areas would mean fewer homes being built where no sanitary sewer connections are available. Frequently homes in remote and isolated areas must rely on individual septic systems or other private subsurface wastewater disposal facilities, which can cause potential water quality impacts and other adverse environmental effects. Thus, by reducing the total number of homes of this type, this alternative would have fewer impacts on water quality resulting from septic systems.

Lastly, the smaller overall development footprint within Riverside County resulting from the reduction in rural and interface residential development under this alternative would also help ensure that a number of other water-

related impacts of this alternative are less severe than that of the proposed project or the existing General Plan. These include: water quality degradation, potential violations of water quality standards, changes in drainage patterns and increased erosion, and lastly, increased runoff of stormwater.

m. Significant Cumulative Impacts

In general, most of the impacts found cumulatively significant for this alternative are substantially similar to those predicted for the proposed project. However, there are a few exceptions: First and foremost, as mentioned above, this alternative would avoid both the individually and cumulatively significant agricultural impacts associated with build out of either the existing General Plan or the proposed project. With its greatly reduced rural development footprint, it would also avoid cumulatively significant impacts to archeological and paleontological resources. Cumulative wildfire hazards (particularly in interface and wildland areas) would be less than significant, as would demands for fire protection services. The smaller development footprint means cumulative effects on existing hydrology and stormwater drainage systems would also be less than significant. This alternative would also avoid significant growth-inducing effects due to encroachment of new development into isolated or remote areas.

However, the greatly increased water demand could potentially result in other new substantial environmental impacts as a result of the development of new water-harvesting facilities (e.g., reservoirs) and other water infrastructure. Lastly, the increased demand for energy (electricity and natural gas) due mainly to increased agricultural uses, such as water pumping, and related economic uses (commercial, industrial, etc.) would result in cumulatively significant energy impacts. See the energy discussion, above. Thus, for these reasons, this alternative's cumulative effects on water resources and groundwater basins due to increasing demand would be substantially higher than that projected for project-updated General Plan build out.

n. Growth Inducement

With its slightly larger urban development potential and slightly smaller rural residential footprint, the Agricultural Emphasis Alternative would accommodate a slightly higher number of homes, population and workforce than the proposed project. As such, this alternative's growth-inducing effects would also be slightly higher than those of the project. Akin to those of the project, most of this alternative's growth-inducing impacts would be significant and unavoidable. This alternative would foster direct and indirect population growth and economic growth. It would also facilitate the construction of additional housing. It does not, however, address (update) existing Rural Village Study Areas (RVSAs) or Rural Village Overlays. As such, this alternative would not remove the obstacles growth that have arisen in the existing General Plan due to lack of detailed planning for the RVSAs. And, in fact, by requiring an eight-year window for all Agriculture Foundation LUD changes (except those within ECVAP), this alternative would actually create additional growth inhibitions within Riverside County. For these reasons, growth inducement Impact 5.4.E was found to be less than significant.

o. Impacts to Cities

The proposed alternative is derived from build out of the existing Riverside County General Plan, with modifications, thus impacts to cities were not included in Table 6.4-F. Rather, it was assumed that growth within the cities would occur in accordance with each city's general plan, as required by state law. See Table 6.4-C for RCCDR estimated build out results for incorporated Riverside County.

Though not addressed separately, the significant effects of this alternative on the cities within and adjacent to unincorporated Riverside County would be limited principally to cumulative effects caused by the incremental

contributions arising from development in the county. These significant cumulative effects would occur in areas where additional future county development causes an impact to exceed a threshold or standard of acceptability. This would occur where development in unincorporated Riverside County areas borders city areas or causes traffic, noise or other effects that carried over the municipal boundary.

In addition, the limit on agricultural conversion within unincorporated areas may also serve to drive more development into the cities as well. This would serve to increase the cumulative effects within the cities as a result. Significant cumulative effects to cities result from this alternative would include:

- Affects to scenic vistas and existing visual character within cities.
- Encroachment on or conflicts with existing agricultural uses within cities.
- Air quality effects where emissions occurring within Riverside County would affect air pollutant levels within cities, including for short-term (construction) and long-term (operational) emissions, particularly traffic-related emissions. Exposure of sensitive receptors within cities to air pollutants generated within Riverside County and cumulatively significant air quality impacts could also occur.
- Greenhouse gas emissions (to the extent that traffic generated by activities within unincorporated Riverside County affected trips and congestion within cities).
- Noise level increases within Riverside County could affect levels within cities, including for construction (short-term) and operational (long-term) emissions. In particular, traffic-related noise increases could result in cities as a result of changes in county traffic patterns and/or increased trips.
- Increased traffic within Riverside County would also result in significant traffic increases in cities where links between city and county circulation networks interface. That is, increased traffic could affect cities in two ways: First, by causing traffic slowing on county roads which would lead to slowing or backups on city roads. Second, when a county roadway becomes less able to accommodate traffic, drivers seeking alternate routes may end up traveling through cities on surface streets. Lastly, development of land uses that attract visitors (such as regional shopping malls, medical centers, universities, casinos and other large-scale uses) within unincorporated Riverside County could increase trips on city roads that lead to/ link to the use within Riverside County.
- In locations where cities rely upon the same groundwater basin(s) that also serve an unincorporated area, additional development within Riverside County could lead to significant demands on the city's existing water supply. Where a groundwater basin is already in overdraft or adjudicated, or where future demands would exceed the recharge capability of the basin, both the city and county areas relying on the basin would be significantly affected. This may particularly be significant where additional agricultural demands would be met solely by groundwater from basins shared by city water providers.
- Where cities and unincorporated areas are both served by the same water district, additional development within Riverside County could increase demand on the existing imported water supply. Since such supplies are finite and subject to factors beyond the control of the water district (e.g., rainfall amounts, state mandates, court-ordered diversions for fish species in the Sacramento/San Joaquin Delta, etc.), increases exceeding the districts' ability to meet the need would result in significant impacts.

3. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. It would provide updated technical data, simply by definition. It also would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons. It would not, however, fully comply with AB 32 due to the substantial increase in greenhouse gas emissions associated with this alternative. Nevertheless, in all, this alternative could be said to adequately meet the address new needs objective. It does not, however, further the Riverside County Vision in regards to growth since the restrictions on agricultural conversion would significantly hinder (not "enhance" or "extend") "continued progress" within Riverside County.

4. Conclusions

Overall, as indicated in Table 6.4-E, the Agricultural Emphasis Alternative would cause slightly more significant environmental impacts in the growing urban and suburban portions of unincorporated Riverside County, while substantially reducing many (but not all) impacts associated with spatial effects in the rural portions of Riverside County. In several key areas, this alternative would avoid, minimize or reduce impacts found significant under the proposed project to less-than-significant levels. These include: conversion of state-designated farmlands and encroachment or conflicts with existing agricultural uses; exposure of people or structures to wildland fire risks; and, facilitation of environmental effects due to the encroachment of development into isolated or remote areas.

With its greatly reduced rural development footprint, it would also avoid cumulatively significant cumulative impacts to archeological and paleontological resources, hazards (particularly in interface and wildland areas), demand for fire protection services and effects on water resources and groundwater basins. The smaller development footprint means cumulative effects on existing hydrology and stormwater drainage systems would also be less than significant. This alternative would also avoid significant growth-inducing effects resulting from facilitating encroachment into isolated or remote areas. However, because this alternative restricts agricultural conversion, it would hinder (reduce) significant growth-inducing effects by creating (rather than removing) obstacles to population growth within Riverside County.

Lastly, this alternative would also result in several substantially greater (worse) environmental impacts, including: greatly increased demand for water, both imported and local (groundwater); increased demand for energy (electricity and natural gas) due mainly to increased agricultural uses (particularly water pumping) and related economic uses (dairies, commercial, industrial, etc.); and, increased energy use and increased off-road equipment and vehicle operations associated with agricultural uses, contributing to substantial cumulative greenhouse gas emissions. And, lastly, environmental impacts associated with the need for new or expanded water infrastructure. Except for the greenhouse gas emissions, however, none of these cumulatively significant impacts are new as compared to those of the project-updated General Plan.

Taken together, this alternative adequately addresses four of the seven areas of significant effects associated with the proposed project, including having substantial improvements over the project in terms of both agricultural impacts and on-road vehicle traffic levels. It would also, however, be associated with three areas of more severe, environmental impacts, including increased water demand and increased cumulative impacts in several areas. Although an improvement over the project in some ways, this alternative would not be the environmentally superior alternative due to the severe limitations and significant environmental impacts that would result in

conjunction with the greatly increased water demand under this alternative. For these reasons, this alternative was not deemed the environmentally superior alternative.

Further, as outlined above, this alternative only meets two of five of the objectives of the project. Thus, this alternative is not an acceptable means for achieving the stated project objectives. For all of these reasons, the Agricultural Emphasis Alternative is not deemed the preferred alternative.

D. Added Community Centers Alternative

Sprawling patterns of suburban growth in car-centric Southern California tend to result in increased traffic, noise and air pollution as vehicle travel increases within the far-flung new communities. Even with the advanced planning called for under the existing Riverside County General Plan and for the General Plan as updated pursuant to GPA No. 960 (considered the "project" for the purposes of comparison within this alternative analysis), impacts due to traffic and circulation, as well as attendant air quality and noise impacts, are significant and unavoidable, both as direct project impacts and on a cumulative basis. This alternative is proposed as a means for addressing (lessening) this significant impact.

To combat growing sprawl, many new developments incorporate "New Urbanism" concepts that call for increased densities and intensities within community centers to create a core of concentrated homes and businesses. Though seemingly counterintuitive, increasing the density/intensity of an urban core can actually result in decreased traffic, noise and air pollution in some locations (particularly outlying areas) because compact development can create shorter commutes for shoppers, workers and others. Also, increased densities, and in particular, mixed use developments, can foster more walkable communities in which pedestrian and bicycle travel supplants vehicle trips for short distances, further reducing traffic and its attendant impacts.

As a nod to New Urbanism, the existing Riverside County General Plan was designed to include a scattering of community centers (CC LUD in the General Plan) throughout Riverside County. For this alternative, several additional community center overlays would be planned along transportation corridors/transit nodes in unincorporated portions of western Riverside County and the Coachella Valley. By placing such centers near freeways, where feasible, in addition to transit nodes, both vehicular and pedestrian travelers can be accommodated. Locations for these additional community centers include along the future Metrolink Perris Valley Extension Line and along the Amtrak commuter line extension through the Coachella Valley.

Rather than increasing the overall build out of unincorporated areas, this alternative would represent (as compared to the existing and proposed GPA No. 960) a more concentrated pattern of development intensity. To accommodate these increases, development intensity within reserve areas for the two MSHCPs would be redistributed into community centers throughout Riverside County. Thus, under this alternative the overall size of the development footprint within unincorporated Riverside County would decrease, but the overall residential density would nearly double. Gross residential density would increase from 0.42 and 0.43 for the existing and project-updated General Plans respectively, to 0.73 houses per acre under this alternative, while the overall number of units would only increase by roughly 1% (6,900) compared to the updated General Plan's total.

1. Assumptions

As defined under the existing General Plan, community centers are "purposefully designed to function differently from the typical patterns of individual, segregated land uses." Instead, "uses and activities are designed together in an integrated fashion to create a dynamic urban environment that acts as the center of activity for the surrounding area." To accomplish this, community centers are designed to accommodate "a variety of residential

densities, non-residential intensities and public spaces...integrated in a manner that promotes pedestrian activity and minimizes the dominance of the automobile."

In terms of overall land use countywide, the development (build out) scenario designed for the Added Community Center Alternative is based on the existing (2008, for the purposes of this EIR) General Plan. To it, the following specific changes were applied to accommodate the community center standards noted above:

Added Community Centers: The existing General Plan identified roughly 1,200 acres of CC and mixed-use (MUPA) land use designations throughout unincorporated Riverside County scattered across the various Area Plans with concentrations roughly focused along Interstate 15 (I-15) in southwestern Riverside County and along Interstate 10 (I-10) in the Coachella Valley region. Under this alternative, the area allotted to CCs is increased three-fold to roughly 4,800 acres. To keep community center densities high, this increase is assumed to allow for 3,600 additional acres of mixed-use, that is both high-density housing and commercial uses through overlays (i.e., alternate LUDs).

Because western Riverside County is generally more urbanized than the eastern two-thirds of Riverside County, it was assumed that roughly 1,200 acres of CC/MUPA were placed in the west. These centers would provide additional community cores along the I-15 and Interstate 215 in the Perris Valley, in particular. The new core areas in these areas would provide jobs and commercial opportunities in close proximity to housing, reducing vehicle travel to more distant locations, particularly worker commutes to Orange County. The remaining 2,400 acres of CC/MUPA are assumed to build out in eastern Riverside County, which has traditionally seen lower growth overall than to the west due to its more remote location relative to the commercial centers of Greater Los Angeles and Orange County.

In total, roughly 21,600 new high- to very high-density dwelling units (du) plus 10,500 medium-high to high-density units would be planned within the added Community Centers throughout Riverside County, accommodating an overall increase of 12,600 people and, with an equal amount of retail-commercial and associated commercial services added as well (3,600 acres total), over 90,000 additional jobs would also be added.

Open Space-Rural and Rural Density Transfer: As noted under the Agricultural Alternative, the existing General Plan includes roughly 1,930,000 acres of lands designated as open space-rural (OS-RUR). However, since much of this land has limited access, utilities or other constraints, it was assumed (for all of the alternatives) that only 65% of the total area would be potentially suitable for rural residential (OS-RUR) development (i.e., 1,254,400 acres total supporting roughly 31,400 du). The other 45% was assumed to remain vacant. As part of this alternative, of the remaining OS-RUR lands, roughly 20% (251,000 acres; 6,300 du) was assumed to remain as OS-RUR; the other 80% (1,004,400 acres; 25,100 du) were transferred to OS-C.

In a fashion similar to the Rural Density Transfer assumptions used for the Agricultural Emphasis Alternative, for this alternative the 25,100 du lost through conversion to OS-C were allowed to transfer to the added community centers. To accommodate the units lost and ensure that private property retains value, this alternative would permit the transfer of development rights from the altered acreage to the urban uses associated with the added Community Centers. The transfers would be required to remain within the Area Plan in which the OS-RUR lands are located, however, in order to prevent severely unbalancing demands on existing and future public services and infrastructure. Acreage was also reduced from the RM and RD LUDs (2,800 acres) to offset the dwelling units reallocated to the community centers. The results are increased MUPA, CC and higher-density housing as described above, totaling 6,900 more dwelling units than proposed for GPA No. 960, yet achieving 3,700 fewer homes than proposed under the original (existing) General Plan.

High Fire Hazard Reduction: In addition to accommodating urban development pressures, this alternative also addresses significant wildfire risks through the reduction of the proposed OS-RUR areas. As shown in General Plan Figure S-11 (or Figure 4.13.3 of this EIR), much of the existing OS-RUR lands are in "high" or "very high" fire hazard severity zones. By decreasing OS-RUR and increasing the areas designated OS-C (which is generally not developable), the number of additional people, structures and property allowed within these fire hazard areas would be greatly reduced. This would also greatly reduce demands for fire protective services in the outlying and remote regions of Riverside County.

Additional Assumptions: All of the general assumptions outlined at the beginning of this section also apply. There are no exceptions or changes to them for this alternative, or additional assumptions beyond those already covered above.

a. Baseline Assumptions

As with all of the other alternatives, as well as the rest of the EIR for that matter, the starting baseline assumptions for the Added Community Center Alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. For example, Section 4.5 (Agricultural and Forestry Resources) provides information on existing Farmland designations, mapped Agricultural Preserve locations and lands designated AG LUD in the General Plan, etc., within Riverside County. These baseline conditions apply to both the incorporated and unincorporated portions of Riverside County. See Table 6.4-G for the full baseline data set used for this alternative. See the footnotes to this table for additional comments on the baseline assumptions.

b. Build Out Assumptions

For this particular alternative, it is assumed that no other changes to the General Plan are made and that the unincorporated portions of Riverside County build out as directed by the existing General Plan. The assumptions and land use changes described above were then applied, resulting in a build out scenario specific to the Added Community Center Alternative. See Table 6.4-G (Added Community Centers – Assumptions and Projections), below.

2. Environmental Implications

Pursuant to Section 15126.6(d) of the State CEQA Guidelines, Table 6.4-H (Added Community Centers Alternative – Environmental Effects Summary), below, outlines in matrix form the significant environmental effects of the Added Community Centers Alternative. A discussion of the significant environmental effects of the alternative follows, below. Where the alternative would cause a significant effect beyond that of the proposed project, it is also discussed further below.

Table 6.4-G: Added Community Centers – Assumptions and Projections

Agricultural Emphasis Alternative ASSUMPTIONS [7]	Baseline: Existing (2007) Conditions[1, 3]			Build Out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Land Uses						
Residential	109,600 ac	113,700 ac	**223,300 ac**	721,800 ac	186,100 ac	**907,900 ac**
Commercial [8]	27,200 ac	31,800 ac	**59,000 ac**	12,800 ac	31,800 ac	**44,600 ac**
Industrial [9]	124,200 ac	121,400 ac	**245,600 ac**	80,600 ac	121,300 ac	**201,900 ac**

Agricultural Emphasis Alternative ASSUMPTIONS [7]	Baseline: Existing (2007) Conditions [1, 3]			Build Out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	189,700 ac	61,000 ac	**250,700 ac**
Open Space [10]	757,000 ac	11,300 ac	**768,300 ac**	1,331,300 ac	34,000 ac	**1,365,300 ac**
Vacant / Other [11]	2,766,000 ac	206,500 ac	**2,972,500 ac**	1,674,700 ac	109,100 ac	**1,783,800 ac**
Total Acres	**4,010,900 ac**	**543,300 ac**	***4,554,200 ac***	**4,010,900 ac**	**543,300 ac**	***4,554,200 ac***
Socioeconomic Data						
Dwelling Units	207,000 du	566,500 du	**773,500 du**	527,800 du	1,040,400 du	**1,568,200 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	1,715,300 pers	3,006,700 pers	**4,722,000 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	652,200 jobs	1,318,200 jobs	**1,970,400 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	1.24	1.27	**1.26**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	0.73 du/ac	5.59 du/ac	**1.73 du/ac**

Footnotes:
1. Source for land use, existing: EIR Table 4.2-F.
2. Source for land use, build out: Modeled for alternative (Unincorporated County) and estimated from RCCDR 2012 data for "Cities, Build Out."
3. Source for socioeconomics, existing: EIR Table 4.3-G.
4. Source for socioeconomics, build out: EIR Table 4.3-G for the cities and modeled for alternative (Unincorporated County).
5. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are included in the unincorporated baseline county totals, rather than the incorporated totals.
6. "Build out" conditions are those projected for full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. All development within the unincorporated portion of Riverside County occurs as directed by the existing (2008) Riverside County General Plan. No additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
7. All values rounded to the nearest hundred. Thus, totals may not sum precisely.
8. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
9. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
10. Open space uses include conservation lands, as well as water (lakes, etc.).
11. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.

Source: See footnotes, above, for data sources.

Table 6.4-H: Added Community Centers Alternative - Environmental Effects Summary

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation [2]	Significant	Cumul. Significant	Relative to Proj. [4]
4.2 – Land Use							
4.2.A	Physically divide an established community.		•				=
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.			•			↓
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				↓
4.3 – Population and Housing							
4.3.A	Induce direct or indirect population growth.			•		•	↑↓
4.3.B	Displace residential units.			•			↓
4.3.C	Displace people.			•			↓
4.4 – Aesthetic and Visual Resources							
4.4.A	Adversely affect scenic vistas.			•		•	↓
4.4.B	Adversely affect scenic resources within State Scenic Highways.			•			↓
4.4.C	Adversely affect existing visual character.			•			↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.4.D	Cause adverse light and glare effects.			•		•	↓
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.			•			↓
4.5 – Agricultural and Forestry Resources							
4.5.A	Cause the direct or indirect conversion of designated Farmlands.		•				↓
4.5.B	Encroach on or conflict with existing agricultural uses.		•				↓
4.5.C	Adversely affect forest lands and forestry uses.		•				↓
4.6 – Air Quality							
4.6.A	Conflict with air quality plans.				•	•	↓
4.6.B (1)	Cause significant construction (short-term) air emissions.				•	•	↑
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↓
4.6.C	Cause cumulatively significant project air quality impacts.				•	•	↓
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↓
4.6.E	Expose substantial numbers of people to objectionable odors.			•			↑
4.7 – Greenhouse Gases							
4.7.A	Generate substantial greenhouse gas emissions.			•		◊	↓
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.			•			↓
4.8 – Biological Resources							
4.8.A	Adversely affect riparian or other sensitive habitats.				•		↓
4.8.B	Cause direct and indirect impacts to protected species or their habitats.				•		↓
4.8.C	Adversely affect wetlands.				•		↓
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.				•		↓
4.8.E	Conflict with adopted habitat conservation plans.		•				↓
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				↓
4.9 – Cultural and Paleontological Resources							
4.9.A	Adversely change the significance of historical resources.		•				↓
4.9.B	Cause the destruction of known archeological resources.			•			↓
4.9.C	Cause the destruction of unique paleontological resources or sites.		•				↓
4.9.D	Result in the disturbance of human remains.		•				↓
4.10 – Energy Resources							
4.10.A	Increase demand for electricity.		•			•	↓
4.10.B	Increase demand for natural gas.		•			•	↓
4.10.C	Cause the inefficient use of energy.		•				↓
4.11 – Flood and Dam Inundation Hazards							
4.11.A	Result in housing within flood hazard areas.		•				↓
4.11.B	Cause impediment of flows.		•				↓
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•				↓
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•				↓
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.12 – Geology and Soils							
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.			•			↑
4.12.B	Expose people or structures to substantial strong seismic groundshaking.			•		•	↑
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.			•			↑
4.12.D	Expose people or structures to substantial adverse effects due to landslide.		•				↓
4.12.E	Result in substantial soil erosion or topsoil loss.			•			↓
4.12.F	Result in development on unstable geological units or soils.		•				↓
4.12.G	Result in development on expansive soil.			•			↓
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.			•			↓
4.13 – Hazardous Materials and Safety							
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.			•			↑
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.			•			↑
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.			•			↑
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.			•			↑
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.			•			↑↓
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.			•			↑↓
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↓
4.13.H	Expose people or structures to significant risk due to wildland fire.		•				↓
4.14 – Mineral Resources							
4.14.A	Result in the loss of availability of delineated locally important minerals.	•					=
4.14.B	Result in the loss of availability of known mineral resources.		•				↓
4.15 – Noise							
4.15.A	Generate noise or cause noise exposure in excess of standards.			•		•	↑↓
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↑
4.15.C	Result in a substantial permanent increase in ambient noise levels.				•	•	↑↓
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.				•	•	↑
4.15.E	Expose people to excessive airport-related noise levels.		•				=
4.16 – Parks and Recreation							
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.				◊	•	↑
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.			•		◊	↑
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.			•			↑
4.17 – Public Facilities							
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•				↓
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•		•	↑
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•		•	↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul . Significant	Relative to Proj.[4]
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the County Integrated Waste Management Plan.		•				↑
4.17.D	Cause adverse environmental effects due to the need for schools.			•		•	↑
4.17.E	Cause adverse environmental effects due to the need for library services.			•		•	↑
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•		•	↑
4.18 – Transportation and Traffic							
4.18.A	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.				•	◊	↑↓
4.18.B	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				•	◊	↑↓
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				↑
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				↑
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				↓
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				↓
4.18.G	Cause an adverse effect on circulation during construction.			•			↓
4.18.H	Result in inadequate emergency access.		•				↓
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				↓
4.19 – Water Resources							
4.19.A	Result in insufficient water supply.				•	•	↑
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.				•	•	↑
4.19.C	Substantially degrade water quality.		•				↓
4.19.D	Violate water quality standards or waste discharge requirements.			•			↓
4.19.E	Exceed wastewater treatment requirements.		•				↓
4.19.F	Exceed wastewater treatment capacity.		•				↑
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.			•			↑
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.			•			↓
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.			•			↓
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.			•			↓
5.2 – Significant Irreversible Changes							
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.				•	•	↓
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				=
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.		•			•	↓
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				↑
5.4 – Significant Growth-Inducing Effects							
5.4.A	Foster direct or indirect economic growth.				•	•	↑
5.4.B	Foster direct or indirect population growth.				•	•	↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
5.4.C	Result in construction of additional housing.				•	•	↑
5.4.D	Remove obstacles to population growth.		•		•	•	↓
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.		•				↓
5.4.F	Result in population increase that may strain community services or facilities.				•	•	↑

Footnotes:
1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; ↓↑ = areas of each result; and, = , approximately the same.
5. Shaded yellow boxes denote impact finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

Overall, the shifting of open space-rural land uses to high density residential and retail-commercial uses in the proposed community centers under this alternative serves a number of complimentary purposes. Even though open space conservation is increased greatly (by over 1 million acres), with the increase in urban uses, this alternative would yield an increase of nearly 7,000 dwelling units and over 90,000 jobs, plus a population increase of roughly 12,600 people as compared to build out under the General Plan as amended per the project. Compared to the existing General Plan, population and dwelling units both decrease (by 12,100 and 3,700, respectively) and jobs increase by only 56,000.

As a result of these changes, future development would be focused within existing and burgeoning community centers along existing major transportation routes. The footprint of new development within the open space and interface/wildland areas of Riverside County would be greatly reduced (by roughly 80%). The reduced footprint in these rural and open areas would better focus suburban and urban development in areas mapped and already planned for such uses, both within county unincorporated areas as well as in cities.

As shown in Table 6.4-H, this alternative would have a number of significant environmental effects (either individual, in localized areas or cumulative). Certain of these significant environmental effects would be substantially worse than those associated with the project-updated General Plan. These effects, which are discussed further below, include:

- Greenhouse gas emissions.
- Increased use of existing parks and recreational facilities.
- Growth effects resulting in the need for new or expanded parks or recreational facilities.
- Circulation system effectiveness and congestion management conflicts.
- Increased traffic levels in localized areas.

a. General Impacts

Overall, as indicated in Table 6.4-H, the Added Community Centers Alternative would generally have environmental effects similar to, but greater than, the proposed project's within the urban and suburban portions of Riverside County because of the increase in housing, jobs and population that this alternative would realize from the added community centers. Despite these increases, the elimination of the OS-RUR land use with 80% reallocated as OS-C would result in a county development footprint that is over a million acres (over 1,500 square miles) smaller than currently proposed.

Thus, in general, when compared to the environmental impacts associated with build out of the existing General Plan, this alternative would have substantially fewer significant environmental impacts related to spatial effects within the county development footprint due to the million-plus acres decrease overall. These include reductions in impacts to: land use, aesthetic and visual resources, agricultural and forestry resources, biological resources, cultural resources, flood and dam hazards, some (non-seismic) geology hazards, mineral resources, floodplains and hydrology. In particular, the decreased rural/interface area footprint would result in a substantial reduction in wildland fire risks and substantially less encroachment into isolated and remote areas.

Conversely, with its density and intensity increases within the added Community Centers in urban/suburban areas, this alternative would have increased population-driven impacts due to the roughly 12,600 additional people and 90,000-plus jobs added, including: air quality, noise, water and energy demand, exposure to seismic risks and potentially hazardous materials, increased demand for various public services and facilities, including law enforcement services, wastewater treatment, schools, libraries and medical services, as well as parks and recreational opportunities. Traffic volumes, as measured in trips per day (TPD) or vehicle miles traveled (VMT), would also increase. Where these increases would be substantially greater than those predicted for the proposed project, they are discussed in greater detail, below.

Lastly, in terms of traffic and several other environmental impacts, this alternative would have a combination of effects; that is, adverse effects would be lower in some areas and higher in other areas. As an example: the increased job opportunities created by the additional community centers would decrease the long commutes by workers into Orange County and other distant job centers, but would increase traffic locally in the areas surrounding the new job centers and commercial opportunities. See the Traffic and Circulation Impacts discussion, below, for further details. Key items related to each of these impacts are discussed more fully, below.

b. Agricultural Resource Impacts

Acreage dedicated to agricultural uses would be unchanged under this alternative. However, in general, impacts to agricultural uses, particularly conflicts between them and non-agricultural activities, would be lessen under this alternative since the overall rural development would be decreased by over a million acres. As a result of this decrease, agricultural impacts associated with this alternative, both individual (local) and cumulative, would be less than significant.

c. Housing Impacts

As noted previously, the county's RHNA indicates a perennial need for additional housing for moderate, low and very low income families. For reasons of economics and scale, higher-density housing is frequently used to provide housing types to meet these needs. Under this alternative, the reallocation of densities from OS-RUR to high density residential and mixed use includes nearly 22,200 du of multi-family residential LUDs. With their higher densities, these categories are particularly well-suited for addressing low-income housing needs. Thus, this

alternative would be a substantial improvement over the existing General Plan in terms of enabling low income housing availability. As noted previously, in addition to reducing the rural/wildland development footprint, the increased number of urban dwelling units associated with this alternative would also help the County of Riverside provide the higher-density units needed to meet fair-share RHNA targets as issued by SCAG, particularly for low-income families in western Riverside County.

d. Biological Impacts

Within Community Development Foundation areas, impacts associated with this alternative would be higher due to the increased densities and intensities. However, existing mitigation, such as compliance with the requirements of the WR-MSHCP and CV-MSHCP, would ensure that biological impacts associated with this alternative were less than significant. Compared to the project, however, this alternative would result in a substantial reduction in the extent of biological impacts due to the million-plus acre reduction in the overall size of the development footprint within Riverside County. With acreage shift, effects of human encroachment, edge effects, habitat disturbance and similar effects would be greatly reduced. As such, this alternative would have substantially fewer impacts to biological resources in the outlying areas, particularly wildlands and interface fringe areas, than either the existing General Plan or the proposed project.

e. Wildfire and Fire Protection Impacts

For similar reasons, this alternative would also provide a substantial reduction in cumulative wildfire risks and, hence, demands on fire protection services. Under the existing General Plan, over 50,000 homes would be possibly scattered throughout the million-plus acres of existing OS-RUR lands. Scattered rural residential development in remote and isolated areas is the type of development pattern most vulnerable to wildland fires. These residences are also the most problematic for fire protective services to defend, given their remote locations, unimproved (dirt) access roads and lack of readily accessible water supplies. By reallocating over half of these homes from the most rural areas of Riverside County to urban areas and reducing the overall development footprint by over a million acres, the potential for people, structures and property to be put at risk for wildland fires is greatly reduced under this alternative compared to that of either the existing General Plan or the proposed project.

f. Traffic and Circulation Impacts

As mentioned above, the changes proposed under this alternative would have several different effects on traffic and circulation. In and around the urban areas in which additional Community Centers are added, traffic would increase in relation to the increased populations living, working, shopping and visiting the new uses. Conversely, however, the reduction of dwelling units allowed in the far-flung rural and wildland portions of Riverside County would also serve to reduce traffic. Lastly, the development of a large number of new jobs in association with the commercial and related economic uses included within the added Community Centers would also reduce VMTs regionally by providing needed jobs in closer proximity to workers' homes.

All of these competing factors affecting traffic make it difficult to deduce the relative effects that would result from the proposed alternative. Thus, in this instance several land use simulations were developed and modeled via the South Coast Air Quality Management District's (SCAQMD's) CalEEMod software. The results of the modeling indicate that this alternative would result in increased air quality emissions (for example, ROG, NO_X and total PM_{10}). Based on VMTs derived by the model, the alternative would also result in roughly 50% increases in the amount of vehicle miles traveled in the county overall (specifically 62% increase over existing General Plan build out and 45% increase over project-updated General Plan build out). However, the majority of the increased

trips would be occurring in the urban centers of Riverside County; only 15% of the increase in trips would be occurring in the rural, wildland and interface portions of Riverside County. This pattern of increases reflects the urban nature of the people, homes and jobs that would be added by the additional Community Centers.

Thus, as a result of the simulation, individual and cumulative traffic impacts (i.e., items 4.18.A and 4.18.B of Table 6.4-H) were found to increase as a result of the proposed land use changes. The increased densities/intensities added for the new community centers would either exacerbate existing traffic conditions or cause existing (or future) roadways to operate at unacceptable levels of service. At the high densities/intensities proposed for the community centers, these impacts are generally significant and unavoidable for the individual intersections and roadway segments closest to these urban uses. Where resulting in new traffic impacts, they would be substantially greater than those forecast for the project-updated General Plan. To some extent, traffic impacts would be lessened by the increased use of non-motorized transportation made feasible by the compact development of the centers. However, given the nature of regional land use in Southern California, it is expected that the local traffic impacts would remain significant and unavoidable even with this mitigation.

In regards to the other circulation-related impacts, those associated with populations (e.g., exposure of people to hazards from air travel) would generally be increased slightly compared to that of the existing General Plan because of the increased population accommodated by this alternative. Conversely, in terms of spatial impacts, those related to roadways would be reduced under this alternative because of the significant decrease in the number of homes built in outlying rural and wildland fringe areas. Thus, this alternative's impacts relative to road maintenance, emergency access, public transit, etc., would all be less pronounced than that of the existing General Plan or the proposed project. The smaller development footprint in particular would make transit, walking and other alternate forms of transportation more viable within Riverside County.

g. Air Quality Impacts

In terms of air quality, the CalEEMod simulations mentioned above were also used to determine how this alternative would differ from the proposed project or existing General Plan. The results indicate that because of the increased number of homes, jobs and people associated with alternative build out, and in particular, the associated increase in VMTs, overall operational air quality emissions would be higher for this alternative. Where increases would be substantially greater than those forecast for the project, they represent new impacts to air quality associated with this alternative. Thus, under this alternative, even with the mitigation outlined in Section 4.6 of this EIR, the overall level of air pollution within Riverside County would be significant and unavoidable for reasons similar to those given for the project in Section 4.6. For example, significant short-term air quality emissions, particularly of fugitive dust (PM_{10}), would occur during construction activities, such as site preparation. Likewise, significant long-term air pollutant emissions would occur from stationary sources within Riverside County in cumulatively-significant, if not individually significant, levels that exceed applicable air quality standards.

Further, with the urban increase, the number of people living and working in the new community centers would cause more people to be exposed to short-term air pollution from adjacent construction emissions and long-term (operational) emissions from increased traffic at nearby intersections. These significant emissions would collectively result in the exposure of sensitive receptors (including children, the elderly and the infirm) to substantial air pollutants, particularly where increased densities under this alternative would increase the number of people within close proximity (500 feet or less) to freeways and other high-volume traffic sources, warehouses and other industrial uses associated with high diesel and other particulate emissions. Thus, aside from objectionable odors, this alternative would result in substantial increases in both individual (future implementing projects) and cumulative (total incremental) totals for air quality emissions. See Table 6.4-H (Impacts 4.6.A through 4.6.D).

h. Greenhouse Gas Impacts

As with air pollutants, this alternative would also generate substantially greater GHG emissions than the proposed project or the existing General Plan due to the overall increase in traffic (VMT). CalEEMod simulations estimate that annual operational CO_2e emissions would approximately mirror those of other vehicle exhaust products, yielding roughly 54% for emissions that existing General Plan build out and 61% more greenhouse gases than build out of the project-updated General Plan.

Despite these increases, however, the higher density housing and concentrated urban development plans are generally consistent with the types of changes called for by SCAG to reduce regional VMTs in Southern California and, thus, lower the State of California's overall GHGs. A key focus of CARB's AB 32 Scoping Plan is centralizing development impacts within urban areas as a means for reducing VMT. Thus, even though traffic levels may rise locally in and around the proposed additional community centers (or within Riverside County as a whole), these increases are consistent with regional plans. In particular, VMTs regionally would decrease when more workers are able to find jobs near their homes in the new community centers, rather than having to commute to distant counties, such Orange or Los Angeles for work. In addition, by reducing the overall development footprint of the unincorporated county by over a million acres and reallocating 25,000-plus homes into more urban/suburban areas, this alternative would further the VMT reduction goals established by SCAG pursuant to SB 375 and, therefore, the GHG reduction goals of AB 32 would be advanced as well.

i. Energy Impacts

The demand for energy associated with the overall net increase in homes would be offset by the improved energy efficiency associated with the smaller homes built as multiple-family housing and other higher-density products. Additional energy savings would be realized from the reduced number of homes in rural and wildland areas that would need to use electricity to pump groundwater to supply the home's potable water needs. In total, according to the CalEEMod simulations, overall energy use would decrease under this alternative; mainly due to the greater energy efficiencies afforded the high-density and intensity uses. Even with these reductions, however, increased demands for energy under this alternative would be cumulatively significant for both electricity and natural gas.

j. Noise Impacts

As with air quality and GHGs, the severity of noise impacts in a community are largely dependent upon the contributions of vehicular traffic. Thus, for this alternative, the overall VMT increase would correspond to similar cumulative increases in noise levels at build out as well. That is, on a purely traffic-volume basis, overall noise levels would be higher throughout Riverside County because of the increased homes, jobs and population.

Ambient noise would increase to, or exceed, significant levels in localized areas, particularly those of increased density/intensity within the additional Community Centers, as a result of the compact development patterns proposed. Though interior levels can generally be reduced to less-than-significant levels through various structural mitigation measures (e.g., double-paned windows, thicker wall insulation, etc.), it would not be possible to fully mitigate exterior noise levels due to the compact nature of the developments. Thus, to a large extent, these noise impacts would remain significant and unavoidable under this alternative. In particular, those locations in which existing (baseline) noise levels already exceed acceptable standards would likely be further exacerbated by the additional urban development proposed. Also, due to the widespread, incremental nature of traffic-related noise increases, it is not possible to avoid or mitigate such impacts to the hundred, or even thousands, of homes and other uses that would ultimately be exposed to excessive noise levels over time. Thus, future increases in

(long-term) ambient noise, as well as construction (short-term) noise, exceeding standards would be cumulatively significant under this alternative.

Where lands designated for rural residential (OS-RUR) would be reallocated to conserved open space (OS-C), noise impacts would be reduced because fewer homes would be built in the rural, remote and isolated portions of Riverside County. In these areas, noise levels are generally already low, but because of the natural quietness of these areas, even small additional noise sources can be bothersome. Thus, the reduced development in these areas would be very beneficial to lowering noise levels contributing to biological "edge" effects and other issues affecting the suitability of open space for wildlife use. Though less than significant in any case, overall, this alternative would have fewer rural noise impacts than build out of either the existing General Plan or the proposed project.

k. Public Facilities, Parks and Recreation Impacts

As with other population-based effects, the slight (less than 1%) increase in population that would be accommodated by this alternative (as compared to the proposed project) would result in slightly higher impacts to parks and recreational facilities and other public facilities (including schools, libraries, landfills, medical facilities, government facilities, etc.) Among other things, this would also increase the effects of use (e.g., wear and tear) on existing parks, recreational and other public facilities, as well as increase the need for additional facilities to serve the growing populace. As with the existing General Plan, this alternative would also result in a number of significant cumulative effects on public facilities as well, as shown in Table 6.4-I.

In particular, it should be noted that although the overall (countywide) increase is very small, the cumulative effects to the various public services and facilities would occur based more on locality than overall populations. Thus, the concentration of growth in key added community centers means that increased use of existing public facilities (and demand for additional facilities) would not be spread evenly across Riverside County; the increases would be focused disproportionately in the urban areas of increased density/intensity. Likewise, the decreased population and housing associated with the reduced OS-RUR land would not proportionally offset these increases.

In particular, because of the compact development proposed for the community centers and their urban settings, it is likely that such new development would doubly impose on existing recreational facilities (parks, trails, golf courses, sports fields, community pools, picnic areas, etc.). First, multi-family homes, particularly apartments and other multi-floor units, tend to have little to no individual yards or green areas. Second, in order to achieve the compact development envisioned for these community centers, the opportunities for large open areas of greenspace (such as parks and picnic grounds) would be limited. Thus, for all of these reasons, this alternative's impacts to existing parks and recreational facilities (Impact 4.16.A) was deemed significant and unavoidable, and cumulative impacts of growth effects on the need for additional parks and recreational facilities (Impact 4.16.B) were also found significant. These two types of park and recreation impacts would be substantially greater under this alternative, as compared to build out of the project-updated General Plan.

l. Water Impacts

Under this alternative, total residential water usage would be lower than both that of the project or the existing General Plan. This is because of the much lower per-household water usage associated with higher-density homes, particularly multifamily (attached) units with minimal yard or landscaping. The replacement of large, estate-sized homes, which typically are the most water-intensive type of residences, with these smaller units would achieve an appreciable savings in potable water (between 5,000-15,000 acre-feet per year [AFY] countywide).

This water savings, however, is counteracted by the increase in commercial uses also associated with the added community centers. Under this alternative, commercial and industrial water use would also increase slightly, roughly 6% over the existing General Plan or 9% over build out of the General Plan per GPA No. 960. This cumulatively net increase means that additional water supplies and the infrastructure to treat and deliver such water would be needed within unincorporated Riverside County beyond already identified existing needs.

As outlined in Section 4.19.4.D, some portions of Riverside County already cope with tightly constrained water resources. These include adjudicated groundwater basins and imported State Water Project (SWP) water, which is apportioned by the State of California and can vary greatly depending on conditions. As a result, since California's water supply is finite and the State of California has identified critical constraints related to imported water availability, build out of Riverside County pursuant to this alternative would have cumulatively significant impacts on imported water supplies. A similarly significant impact would cumulatively result for local water supplies, that is, groundwater basins. The reduction of homes permitted in rural, wildland and interface areas (OS-RUR) would partially lessen this significant impact, as fewer homes would be built in areas outside of water agency service areas were reliance on local groundwater is necessary.

Impacts to wastewater (sewage) treatment facilities are the only other impact increasing under this alternative. The greater number of homes, residents and workers accommodated by this alternative means treatment needs would be cumulatively greater than for either the existing General Plan or the project. Though increased, this impact remains less than significant because of both regulatory compliance and the greatly reduced number of homes that would be accommodated in the rural wildland and interface areas where no sanitary sewer connections are available. In much of these areas individual septic systems or other private wastewater disposal facilities would be needed to serve the scattered homes, resulting in potential water quality impacts and other adverse environmental effects.

Nevertheless, the smaller overall development footprint within Riverside County resulting from the reduction in rural and interface residential development under this alternative would also help ensure that a number of other water-related impacts of this alternative are less severe than for the project or the existing General Plan. These include: water quality degradation, potential violations of water quality standards, changes in drainage patterns, hydrology and increased erosion, and lastly, increased runoff of stormwater. In total, this alternative would have significant individual and cumulative impacts to water supplies, including groundwater (Impacts 4.19.A and 4.19.B), that, while larger, are not substantially greater than, either the existing General Plan's or the project-updated General Plan's. In all other areas for water resources, impacts would be less than significant both individually and cumulatively, mainly because of the significantly smaller development footprint associated with this alternative.

m. Significant Cumulative Impacts

In general, most of the impacts found cumulatively significant for this alternative are substantially similar to those predicted for the proposed project. However, there are a few exceptions: First and foremost, the reduced development footprint within the rural wildlands and interface areas would greatly reduce the cumulative adverse effects of certain environmental impacts in these areas. These include: effects to scenic resources within State Scenic Highways, effects to farmlands and agricultural uses, including encroachment on existing uses, disturbance of cultural, archeological or paleontological resources, potential for increased landslide risks, impairment of emergency access or evacuation, need for fire protection services and additional stormwater drainage systems, and the potential for increased runoff, erosion and siltation. It would also avoid or substantially lessen cumulatively significant wildfire risks with its greatly reduced rural development footprint and avoid significant growth-inducing effects, including cumulative, associated with activities that facilitate environmental effects and

encroachment into isolated or remote areas. Again, the million-plus acre reduction in rural footprint under this alternative would substantially lessen this impact, ensuring it is less than significant.

As shown in Table 6.4-H, a number of cumulative impacts would be significant, though substantially similar in degree as for build out pursuant to the project. Cumulative impacts that would be significant and substantially greater than for the proposed project include: air quality effects, greenhouse gas emissions, transportation effects related to traffic, and growth effects on parks and recreational facilities.

n. Growth Inducement

Although its overall development footprint is smaller, this alternative would result in a small (roughly 1%) increase in both people and homes within the urban areas of Riverside ounty and a larger increase (16%) in jobs associated with the commercial uses added in the additional community centers. As such, this alternative's growth-inducing effects would also be slightly higher than those of the proposed project. Akin to those of the project, most of this alternative's growth-inducing impacts, both individually and cumulatively, would be significant and unavoidable. This alternative would foster direct and indirect population growth and economic growth; it would also facilitate construction of additional housing. It does not, however, address existing Rural Village Study Areas (RVSAs) and Rural Village Overlays. Thus, this alternative does not remove the substantial to obstacles growth that have arisen in the existing General Plan due to lack of detailed planning for these RVSAs. This alternative would, however, have substantially less impacts than project build out in terms of facilitation of additional environmental impacts, specifically those due to encroachment into isolated or remote areas, due to the greatly reduced footprint within rural, interface and wildland areas. In total, all of the growth inducement impacts outlined in Section 5.4, except Impact 5.4.E, were found to be individually and cumulatively significant for this alternative.

o. Impacts to Cities

The proposed alternative is derived from build out of the existing Riverside County General Plan, with modifications, thus impacts to cities were not included in Table 6.4-H. Rather, it was assumed that growth within the cities would occur in accordance with each city's general plan, as required by state law. See Table 6.4-G for RCCDR estimated build out results for incorporated Riverside County.

Though not addressed separately, the significant effects of this alternative on the cities within and adjacent to unincorporated Riverside County would be limited principally to cumulative effects caused by the incremental contributions arising from development in Riverside County. These significant cumulative effects would occur in areas where additional future county development causes an impact to exceed a threshold or standard of acceptability. This would occur where development in unincorporated Riverside County areas borders cities or causes traffic, noise or other effects that carried over a municipal boundary.

In addition, the reduced rural, wildland and interface development potential may serve to drive more development into other more remote areas outside of unincorporated Riverside County (e.g., eastern San Bernardino County or northern Imperial County) as well. This would increase the cumulative effects of growth within these distant areas. In total, significant cumulative effects to cities result from this alternative would include:

- Air quality effects where emissions occurring within Riverside County would affect air pollutant levels within cities, including for short-term (construction) and long-term (operational) emissions, particularly

traffic-related emissions. Exposure of sensitive receptors within cities to air pollutants generated within Riverside County and cumulatively significant air quality impacts could also occur.

- Noise level increases within Riverside County could affect levels within cities, including for construction (short-term) and operational (long-term) emissions. In particular, traffic-related noise increases could result in cities as a result of changes in county traffic patterns and/or increased trips.

- Increased traffic within Riverside County would also result in significant traffic increases in cities where links between city and county circulation networks interface. That is, increased traffic could affect cities in two ways: First, by causing traffic slowing on county roads which would lead to slowing or backups on city roads. Second, when a county roadway becomes less able to accommodate traffic, drivers seeking alternate routes may end up traveling through cities on surface streets. Lastly, development of land uses that attract visitors (such as regional shopping malls, medical centers, universities, casinos and other large-scale uses) within unincorporated Riverside County could increase trips on city roads that lead to/link to the use within Riverside County.

- Where city parks or recreational facilities are near unincorporated areas slated for increased urban development, such facilities would likely be subject to disproportionate increased use resulting in accelerated wear-and-tear on the facilities. Depending on the availability of added recreational facilities within unincorporated Riverside County, the provision of additional facilities may not offset these city increases.

- Similar to parks, concentrated growth in specific urban areas would have disproportionate effects on individual schools and school districts within Riverside County. As a result, some school districts and facilities would see population and growth increases in excess of that experienced regionally, resulting in cumulatively considerable impacts in some cases. Similar effects would occur for public services and facilities, such as medical centers, landfills, post offices, health clinics, libraries and the like.

- In locations where cities rely upon the same groundwater basin(s) that also serve an unincorporated area, additional development within Riverside County could lead to significant demands on the city's existing water supply. Where a groundwater basin is already in overdraft, adjudicated or where future demands would exceed the recharge capability of the basin, both the city and county areas relying on the basin would be significantly affected. This may particularly be significant where additional added urban demands would be met solely by groundwater from basins shared by city water providers.

- Where cities and unincorporated areas are both served by the same water district, additional development within Riverside County could increase demand on the existing imported water supply. Since such supplies are finite and subject to factors beyond the control of the water district (e.g., rainfall amounts, State mandates, court-ordered diversions for fish species in the Sacramento/San Joaquin Delta, etc.), increases exceeding the districts' ability to meet the need would result in significant impacts.

3. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative would satisfy all but one. It would provide a suitable plan for "further progress" within Riverside County, since it provides for additional urban development in Riverside County. It would provide updated technical data, simply by definition. It also would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons, even though it would require additional

CAP measures to reduce to the additional greenhouse gas emissions associated with this alternative. Nevertheless, it could still be said to adequately meet the "address new needs" objective. It also may further the Riverside County Vision by allowing higher growth in certain urban cores, extending or enhancing "continued progress" within Riverside County. The only objective not met is that it does not include any LUD updates, and thus does not address the "updated land use" objective.

4. Conclusions

Overall, as indicated in Table 6.4-H, the Added Community Centers Alternative would enable increased growth in urban cores while lessening some the significant effects associated with the proposed project. It addresses nearly all of the significant environmental impacts identified for the project and greatly reduces a number of effects, particularly spatial impacts, as a result of the reduced development footprint.

Some, but not all, of the project's significant cumulative impacts are lessened under this alternative, however these effects are offset by the localized increases that would result within the urbanized Community Centers proposed. Specifically, due to the increase in housing, population, jobs, traffic and associated economic activity, this alternative would result in substantial individual and/or cumulative impacts in a number of areas, including greenhouse gas emissions and traffic congestion. Also, because of the disproportionate effects of growth in urban areas, this alternative would also have substantially greater impacts on existing parks and recreational facilities and cause growth effects triggering the need for additional facilities. It would also have growth-inducing effects on Riverside County, its cities and the surrounding communities, cities and counties. In all other areas, significant impacts either individually or cumulatively would be generally similar to those associated with build out of the General Plan pursuant to the project, GPA No. 960.

Taken together, this alternative addresses six of the seven areas of significant effects associated with the proposed project. However, it only substantially lessens or avoids significant impacts for one of the seven (agriculture); for air quality, noise and growth inducement, this alternative's impacts are generally similar to those of the project. Although an improvement in many ways over the project, because of the absolute limiting effect of the finite water supply availability, this alternative will cause an increase in greenhouse gas emissions and traffic congestion. For these reasons, this alternative was not deemed the environmentally superior alternative.

Further, although this alternative meets four of the five objectives of the project, it does so while increasing growth and localized urban impacts beyond that of the proposed project or existing General Plan. Thus, this alternative is not deemed the favored means for achieving the stated project objectives and, for these reasons, the Added Community Centers Alternative is not deemed the preferred alternative.

E. Green Economy Alternative

In the past decade, modern society has become increasingly focused on the need to use the planet's resources wisely and efficiently. The possibility of global climate change has further sharpened that focus, particularly in the wake of California's Global Warming Solutions Act of 2006. The state has initiated a number of plans to reduce greenhouse gas emissions, including an initiative directing California to be obtaining a third of its electricity through alternative "green" methods by 2020. As used here, "green" energy means alternatives to traditional generation methods using coal, natural gas or other non-renewable petroleum-based sources. This legislative mandate has helped fuel the impetus for the growing green energy industry in the state. With its expansive open desert noted for 360 days of sunshine a year (in Blythe), bracketed by the famously windy San Gorgonio Pass to the north and the geothermal hot springs around the Salton Sea to the south, Riverside County offers unparalleled opportunities for green alternative energy generation.

Accordingly, this alternative aims to capitalize on Riverside County's renewable energy opportunities for wind, solar and geothermal by creating "green economy" jobs and improving the jobs-housing balance within tRiverside Ccounty. To do so, it proposes changes similar to the density transfers proposed for the Added Community Center Alternative. However, in this case, half the remaining OS-RUR is instead reallocated to Public Facilities (PF) to accommodate green energy generating land uses, such as commercial wind and solar energy generation, as well as geothermal or biomass, as opportunities arise. A portion (10%) of the remainder would also be allocated to additional light industrial (LI) land uses to provide additional related and ancillary services, manufacturing and other complimentary uses. Lastly, another 50% would be shifted to open space-conservation (OS-C) to provide buffers around energy uses and also to reduce the number of residences in remote, fire-prone areas (i.e., OS-RUR designated properties in interface/wildlands).

The result of this shift would greatly increase the jobs available within Riverside County, ideally allowing more residents to work in closer proximity to their homes, rather than commute to distant cities or counties. This would improve traffic on the region's freeways and main arteries, as well as greatly reducing the air pollution and traffic noise generated in our communities. In addition to reducing energy generated from non-petroleum sources, this alternative would also aid in reducing greenhouse gas emissions by reducing commuter travel. (Vehicle trips are the number one source of greenhouse gas emissions in California.) Through these means, the Green Economy Alternative addresses a number of significant, unavoidable impacts associated with the project, in particular those resulting related to air pollution, noise, traffic and energy consumption within unincorporated Riverside County.

1. Assumptions

Accordingly, the development (build out) scenario developed for the Green Energy Alternative is based on the existing (2008 for the purposes of this EIR) General Plan. To it, the following specific changes are applied:

Green Energy Development: As per the prior alternatives, and for the same reasons, there are a total of 1,254,400 acres of OS-RUR assumed to be developable within unincorporated Riverside County. Under the Green Economy Alternative, this total is split 50-50 with half going to OS-C for conservation. Of the remaining half, most (313,600 acres) would be would be reallocated to "green energy uses" allowed under the Public Facilities ("PF") LUD; a total of 10% of the remainder (62,700 acres) would be reallocated to Light Industrial ("LI") LUD to foster growth of industries allied with green energy (solar installation companies, manufacturing facilities, etc.). This transfer of intensity to industrial and energy uses would be in place of the rural residential density type of transfers proposed for the prior two alternatives.

High Fire Hazard Reduction: In addition to addressing energy-related issues, this alternative is also designed to address wildfire hazards through the methods described under the previous two alternatives. As a result of this change, roughly 15,400 fewer homes (and nearly 60,000 fewer residents) overall would be introduced into the rural and remote portions of Riverside County. This would minimize the increase in wildfire risks to people, property and structures due to future development and also enhance the production of renewable energy, which benefits the entire region.

Additional Assumptions: All of the general assumptions outlined at the beginning of this section also apply. There are no exceptions or changes to them for this alternative, or additional assumptions beyond those already covered above.

a. Baseline Assumptions

As with all of the other alternatives, as well as the rest of the EIR for that matter, the starting baseline assumptions for the Green Economy Alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. For example, Section 4.10 (Energy Resources) provides information on existing and projected future energy demand, including for electricity and natural gas supplies, for unincorporated Riverside County. The baseline conditions capture both the cities and unincorporated portions of Riverside County. See Table 6.4-I (Green Economy Alternative – Assumptions and Projections) for the full baseline data set used for this alternative and table footnotes for additional comments on the baseline assumptions.

b. Build Out Assumptions

For this particular alternative, the existing General Plan is assumed to build out as previously outlined, except for the changes noted in the amounts of OS-RUR, LI and PF for green energy generation and related uses within the unincorporated portions of Riverside County. The effects of these land use changes on the build out demographics of Riverside County (population, housing and job outcomes) are outlined in Table 6.4-I, below. The resultant environmental implications are summarized in Table 6.4-J (Green Economy Alternative – Environmental Effects Summary).

2. Environmental Implications

Pursuant to Section 15126.6(d) of the State CEQA Guidelines, Table 6.4-J, below, outlines in matrix form the "significant environmental effects" of the Green Economy Alternative. Discussion of the significant environmental effects noted, follow. Where the alternative would cause a significant effect beyond that of the proposed project, it is also discussed below.

Table 6.4-I: Green Economy Alternative – Assumptions and Projections

Green Economy Alternative ASSUMPTIONS [7]	Baseline: Existing (2007) Conditions [1, 3]			Build Out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Land Uses						
Residential	109,600 ac	113,700 ac	**223,300 ac**	721,900 ac	186,100 ac	**908,000 ac**
Commercial [8]	27,200 ac	31,800 ac	**59,000 ac**	9,200 ac	31,800 ac	**41,000 ac**
Industrial [9]	124,200 ac	121,400 ac	**245,600 ac**	456,900 ac	121,300 ac	**578,200 ac**
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	189,700 ac	61,000 ac	**250,700 ac**
Open Space [10]	757,000 ac	11,300 ac	**768,300 ac**	1,313,300 ac	34,000 ac	**1,347,300 ac**
Vacant / Other [11]	2,874,400 ac	194,300 ac	**3,068,700 ac**	1,319,900 ac	109,100 ac	**1,429,000 ac**
Total Acres	**4,010,900 ac**	**543,400 ac**	**4,554,300 ac**	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**
Socioeconomic Data						
Dwelling Units	207,000 du	566,500 du	**773,400 du**	505,500 du	1,040,400 du	**1,545,900 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	1,642,800 pers	3,006,700 pers	**4,649,500 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	1,466,300 jobs	1,318,200 jobs	**2,784,500 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	2.90	1.27	**1.80**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	0.70 du/ac	5.59 du/ac	**1.70 du/ac**

Footnotes:
1. Source for land use, existing: EIR Table 4.2-F.
2. Source for land use, build out: Modeled for alternative (Unincorporated County) and estimated from RCCDR 2012 data for "Cities, Build out."
3. Source for socioeconomics, existing: EIR Table 4.3-G.

4. Source for socioeconomics, build out: EIR Table 4.3-G for the cities and modeled for alternative (Unincorporated County).
5. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are included in the unincorporated baseline county totals, rather than the incorporated totals.
6. "Build out" conditions are those projected for full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. All development within the unincorporated portion of Riverside County occurs as directed by the existing (2008) Riverside County General Plan. No additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
7. All values rounded to the nearest hundred. Thus, totals may not sum precisely.
8. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
9. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
10. Open space uses include conservation lands, as well as water (lakes, etc.).
11. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.

Source: See footnotes, above, for data sources.

Table 6.4-J: Green Economy Alternative – Environmental Effects Summary

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.2 – Land Use							
4.2.A	Physically divide an established community.		•				↓
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.		•				↓
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				↓
4.3 – Population and Housing							
4.3.A	Induce direct or indirect population growth.		•			•	↑
4.3.B	Displace residential units.		•				↑
4.3.C	Displace people.		•				↑
4.4 – Aesthetic and Visual Resources							
4.4.A	Adversely affect scenic vistas.				◊	•	↑
4.4.B	Adversely affect scenic resources within State Scenic Highways.				◊	•	↑
4.4.C	Adversely affect existing visual character.				◊	◊	↑
4.4.D	Cause adverse light and glare effects.		•			•	↓
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•				↓
4.5 – Agricultural and Forestry Resources							
4.5.A	Cause the direct or indirect conversion of designated Farmlands.		•				↓
4.5.B	Encroach on or conflict with existing agricultural uses.		•				↓
4.5.C	Adversely affect forest lands and forestry uses.		•				↓
4.6 – Air Quality							
4.6.A	Conflict with air quality plans.				•	•	↑
4.6.B (1)	Cause significant construction (short-term) air emissions.				•	•	↑
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↑
4.6.C	Cause cumulatively significant project air quality impacts.				•	•	↑
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↑
4.6.E	Expose substantial numbers of people to objectionable odors.			•			↓
4.7 – Greenhouse Gases							
4.7.A	Generate substantial greenhouse gas emissions.			•		◊	↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.			•			↑
4.8 – Biological Resources							
4.8.A	Adversely affect riparian or other sensitive habitats.			•			↓
4.8.B	Cause direct and indirect impacts to protected species or their habitats.			•			↓
4.8.C	Adversely affect wetlands.			•			↓
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.			•			↓
4.8.E	Conflict with adopted habitat conservation plans.		•				↓
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				↓
4.9 – Cultural and Paleontological Resources							
4.9.A	Adversely change the significance of historical resources.		•				↓
4.9.B	Cause the destruction of known archeological resources.			•			↓
4.9.C	Cause the destruction of unique paleontological resources or sites.		•				↓
4.9.D	Result in the disturbance of human remains.		•				↓
4.10 – Energy Resources							
4.10.A*	Increase demand for electricity.		•				↑
4.10.B	Increase demand for natural gas.		•				↑
4.10.C	Cause the inefficient use of energy.		•				↑
4.11 – Flood and Dam Inundation Hazards							
4.11.A	Result in housing within flood hazard areas.		•				↓
4.11.B	Cause impediment of flows.		•				↓
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•				↓
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•				↓
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				↓
4.12 – Geology and Soils							
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.		•				↓
4.12.B	Expose people or structures to substantial strong seismic groundshaking.		•			•	↓
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.		•				↓
4.12.D	Expose people or structures to substantial adverse effects due to landslide.		•			•	↓
4.12.E	Result in substantial soil erosion or topsoil loss.		•				↑
4.12.F	Result in development on unstable geological units or soils.		•				↓
4.12.G	Result in development on expansive soil.		•				↓
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.		•				↓
4.13 – Hazardous Materials and Safety							
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•				↓
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•				↓
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•				↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•				↓
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•				↓
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.		•				↓
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↓
4.13.H	Expose people or structures to significant risk due to wildland fire.		•				↓
4.14 – Mineral Resources							
4.14.A	Result in the loss of availability of delineated locally-important minerals.	•					=
4.14.B	Result in the loss of availability of known mineral resources.		•				↓
4.15 – Noise							
4.15.A	Generate noise or cause noise exposure in excess of standards.				•	•	↑
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↑
4.15.C	Result in a substantial permanent increase in ambient noise levels.				•	•	↑
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.				•	•	↓
4.15.E	Expose people to excessive airport-related noise levels.		•				↓
4.16 – Parks and Recreation							
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.		•				↓
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•				↓
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•				↓
4.17 – Public Facilities							
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•				↓
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•			↓
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•			↓
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the County Integrated Waste Management Plan.		•				=
4.17.D	Cause adverse environmental effects due to the need for schools.		•				↓
4.17.E	Cause adverse environmental effects due to the need for library services.			•			↓
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•			↓
4.18 – Transportation and Traffic							
4.18.A*	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.				◊	◊	↑
4.18.B*	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				◊	◊	↑
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				↓
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				↓
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				↓
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				↑
4.18.G	Cause an adverse effect on circulation during construction.		•				↓
4.18.H	Result in inadequate emergency access.		•				↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				↓
4.19 – Water Resources							
4.19.A	Result in insufficient water supply.				•	•	↑
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.				•	•	↑
4.19.C	Substantially degrade water quality.		•				↓
4.19.D	Violate water quality standards or waste discharge requirements.		•				↓
4.19.E	Exceed wastewater treatment requirements.		•				↓
4.19.F	Exceed wastewater treatment capacity.		•				↓
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•				↓
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.		•			•	↑
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.		•				↓
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.		•			•	↓
5.2 – Significant Irreversible Changes							
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.				•	•	↓
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				↓
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.				•	•	↓
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				↑
5.4 – Significant Growth-Inducing Effects							
5.4.A	Foster direct or indirect economic growth.				•	◊	↑
5.4.B	Foster direct or indirect population growth.				•	•	↑
5.4.C	Result in construction of additional housing.				•	•	↑
5.4.D	Remove obstacles to population growth.				•	•	↑
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.		•				↓
5.4.F	Result in population increase that may strain community services or facilities.				•	•	↓

Footnotes:
1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; ↓↑ = areas of each result; and, **=** , approximately the same.
5. Yellow boxes denote finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

Overall, the shifting of open space-rural land uses to green energy, light industrial and conserved open space proposed under this alternative serves a number of complementary purposes. With the shift of housing to industrial uses, the unincorporated portion of Riverside County would offer roughly 15,400 fewer homes under

this alternative as compared to build out of the existing General Plan. This means nearly 60,000 fewer people would be accommodated as Riverside County residents, lessening the increases in demand for additional schools, parks and other public services. Despite this, the additional industrial uses could provide nearly a million additional jobs (904,500) at build out of this alternative, if fully realized. Such an increase would greatly alter Riverside County's jobs-to-housing balance and shift workers from commuting out of Riverside County for jobs to commuting into Riverside County. This influx of workers, however, would come at a cost: increased vehicular traffic and increases in other vehicle-associated impacts, such as air pollutant and greenhouse gas emissions, noise levels and wear-and-tear on roads. All of these issues are discussed more fully, below.

As shown in Table 6.4-J, this alternative would have a number of significant environmental effects (either individual, in localized areas, or cumulative). Certain of these significant environmental effects would be substantially worse than those associated with the project-updated General Plan. These effects, which are discussed further below, include:

- Greenhouse gas emissions.
- Circulation system effectiveness.
- Increased traffic levels in localized areas.
- Fostering of direct and indirect economic growth due to the large increase in available jobs proposed.

a. General Impacts

Overall, as indicated in Table 6.4-J, the Green Economy Alternative would generally have environmental effects within unincorporated Riverside County similar to, but less than the proposed project's in terms of spatial (land-based) effects because of the reduced (627,200 acres smaller) development envelope within the interface and wildland portions of Riverside County. This decrease also means fewer homes and a corresponding decrease in population (roughly 60,000 less). In terms of economic activities, however, this alternative would offer greatly higher job opportunities. However, their location in the more rural parts of Riverside County would disproportionally increase overall VMT, even if urban/suburban traffic is not severely affected. Overall, build out of the urban and suburban portions of Riverside County would be relatively similar to that of the existing General Plan, except for more workers would possibly be commuting to jobs in-county, rather than driving to more distant jobs in other counties or cities (particularly Orange County).

Thus, generally speaking, when compared to the environmental impacts associated with build out of the existing General Plan, this alternative would have substantially fewer environmental impacts related to spatial effects within the county development footprint. These include impacts to: land use, agriculture, light and glare, forestry, biological resources, cultural resources, mineral resources, floodplain and dam inundation hazards, hazardous materials risks, hydrology, geology and seismic hazards. In particular, the decreased footprint would result in a substantial reduction in wildland fire risks and substantially less encroachment into isolated and remote areas. In conjunction with this decreased development envelope, the decreased population that would be accommodated in Riverside County would also serve to lessen adverse effects in a variety of demand-driven areas, including: lower demand for electricity, natural gas and potable water for residential use, lower demand for additional parks and recreational uses, as well as fewer additional people using existing facilities and fewer additional demands across the gamut of public services and facilities, such as schools, libraries, medical services and need for fire protection and law enforcement services. It would also result in decreased hazard exposure (including seismic, geologic, hazardous substances, flooding and other risks) and exposure of fewer people to noise impacts.

b. Agricultural Resource Impacts

This alternative would not directly affect agricultural uses. Thus, it is assumed they would continue to undergo a gradual loss due to growth pressures from the urban and suburban uses in Riverside County. The development of new green energy uses adjacent to agricultural activities may, in fact, provide additional buffering between residential uses incompatible with certain agricultural uses (for example, dairies). This would help slow urban/suburban encroachment into existing agricultural areas. Overall, however, this alternative would in aggregate have slightly fewer impacts on existing and future agriculture than the proposed project because of the 627,000-acre reduction in development footprint and fewer residents accommodated in the outlying rural, wildland and interface portions of Riverside County. Thus, both direct individual impacts and the cumulative incremental impacts to agricultural and forestry resources under this alternative would be expected to be less than significant.

c. Housing Impacts

This alternative decreases the overall development footprint associated with OS-RUR residential uses and would result in 26,000 fewer homes than build out of the existing General Plan and 15,400 fewer homes than the General Plan as amended per the project. As a result, this alternative's overall adverse effects on housing and population would be slightly greater than that of either the existing General Plan or the updated General Plan. The additional housing added over time as this alternative builds out would still result in cumulatively significant impacts on population growth compared to the baseline conditions that currently exist in Riverside County. The large increase in job availability may serve to accelerate population growth and housing demand even further in Riverside County; see discussion under Growth Impacts, below.

d. Aesthetic Impacts

This alternative proposes to set aside only 627,500 acres of OS-RUR as open space. The remaining 627,200 acres would be developed as mostly green energy generating public facilities (utilities), such as geothermal stations, solar and wind farms. As a result, large swaths of Riverside County would have altered viewsheds, particularly for wind or solar generation, which require the installation of fixtures at low densities across broad areas. These uses have aesthetic viewshed effects that are distinctly different than, and not generally harmonious with, the rural estate, ranch and other more bucolic land uses traditionally associated with very low density (e.g., 20-plus-acre parcel) residential lots. For these reasons, it is likely that this alternative would have significant individual (i.e., resulting from the implementation of individual green energy projects) impacts on aesthetics and viewshed. It would also result in cumulatively considerable changes in existing visual character, with substantially greater adverse effects than those forecast for build out of the General Plan pursuant to the project.

e. Wildfire and Fire Protection Impacts

The reduced development footprint in wildlands and interface areas for this alternative would provide a substantial reduction in cumulative wildfire risks and, hence, demands on fire protection services. Under the existing General Plan, over 50,000 homes would be possible scattered throughout the million-plus acres of existing OS-RUR lands. This sort of diffuse rural residential development in remote and isolated areas introduces homes that can be extremely vulnerable to wildland fires due to their remote locations amidst wildlands with high fire fuel loads (i.e., brush, weeds, etc.). These properties present difficulties for the provision of fire protective services due to their remote locations, unimproved (dirt) access roads, lack of readily accessible water supplies and possibly steep topography (hills and canyons) which can exacerbate wildfire behavior. By reallocating 50,000-plus homes from the most rural areas of Riverside County and reducing the overall development footprint by over a

million acres (1,500-plus square miles), the potential for people, structures and property being put at risk for wildland fires is greatly reduced under this alternative compared to that of either the existing General Plan or the proposed project.

f. Traffic and Circulation Impacts

This alternative has a reduced population due to the reduced rural (OS-RUR) housing in wildlands, and vehicle trips from residents are thus reduced correspondingly. As noted above, these decreases are offset, however, by the greatly increased number of jobs that would be associated with the green industry proposed under this alternative. Increasing the number of jobs available locally can be beneficial in providing employment for Riverside County residents closer to their homes, decreasing commutes to more distant job centers, such as Orange County. Increase job opportunities can also have the opposite effect, however, and cause trips (vehicle miles traveled) to increase as a result of a net influx of commuters if green economy jobs increase Riverside County's role as a job center in its own right.

Since all of these competing factors affecting traffic make it difficult to deduce the relative effects that would result from the proposed alternative, as noted for the prior alternative, several land use simulations were developed and modeled via SCAQMD's CalEEMod software. In order to estimate air quality and greenhouse gas emissions, the model generates estimated traffic levels, since vehicles are the largest single source of air emissions in Southern California. Though greatly simplified in comparison to the data that would be derived from full traffic modeling of each alternative (which was not feasible due to time and expense, as well as the lack of specificity/detailed land use for these scenarios), these rough estimates nevertheless provide at least an indication of the overall degree to which vehicular traffic would be increasing or decreasing within Riverside County.

The results of the modeling indicate that this alternative would result in an increase of roughly 36% more miles traveled per year than that expected from build out of the existing General Plan or an increase of roughly 21% over project-updated General Plan build out. This indicates that under this alternative Riverside County would become a net importer of workers to supply the workforce needed for the proposed green energy economy (which would include jobs in energy generation, operation and light industry, as well as the construction of these uses, plus all of the supportive industries and services, such as food service, gas stations, etc.). In particular, compared to the existing General Plan's development outlook for rural areas, this alternative would result in a roughly 66% increase in VMTs, since workers would have to travel into outlying areas of Riverside County for these green economy jobs. Trips within urban areas of Riverside County would increase by a more modest 25%. For build out of the General Plan with the proposed project (GPA No. 960), however, the rural VMT increase is much lower, only 6%, because the new trips for green economy jobs would be offset by the decrease in housing allowed in the outlying OS-RUR uses. The VMT increase for urban uses however, would be roughly 29%.

As discussed under prior alternatives, when the VMTs increase, there must typically be an increase in the network's available roadway capacity in order to ensure adequate levels of service (LOS) are maintained along both the network's roadway segments and at the intersections that link these segments. In areas where existing roadway capacities are already functioning at unacceptable levels, any additional increases in traffic would contribute incrementally to cumulatively significant impacts. Further, even future roadways constructed with capacity sufficient to serve initial and projected needs could suffer similar impacts if traffic increases regionally beyond that planned for the area.

Thus, for this alternative, significant traffic impacts would consist of a combination of cumulative impacts similar to those projected for General Plan build out and GPA No. 960 for roadways already projected to operate at levels in excess of operating standards. Plus, due to the added traffic under this scenario, a number of roadway segments and intersections previously expected to operate within target ranges (LOS) (under existing General

Plan or GPA No. 960 build out) would instead fall within unacceptable LOS ranges, resulting in new significant impacts. Adverse impacts due to the need for new or altered road maintenance activities would also increase under this alternative because of the increase wear-and-tear resulting from the increased VMTs.

For other types of transportation-related impacts, their severity under this alternative depends on whether they are population driven (and hence, would decrease with the population) or VMT driven (and hence, would increase under this alternative). Accordingly, potential safety risks to people exposed to air, water or rail traffic would decrease in conjunction with the projected 60,000-person population decrease under this alternative. Impacts on accessibility and utility of pedestrian and other non-vehicular transportation modes and routes would also be improved under this alternative as a result of fewer people in outlying areas and more people living in urban regions that are more readily served by mass transit. Emergency access needs would also be less significant under this alternative due to the 50,000 fewer rural (OS-RUR) homes and people that would be allowed in wildlands and interface areas.

g. Air Quality Impacts

In terms of air quality, this alternative would have greater impacts due in large part to the projected VMT increase expected from the large increase in available jobs in Riverside County. The CalEEMod simulations run for this alternative indicate that operational air pollutant emissions (such as ROG, NO_x and PM_{10}) would increase roughly 20%-30% compared to those expected under build out of the existing General Plan or nearly 30%-40% compared to those associated with General Plan build out as altered by GPA No. 960.

These impacts would be significant but not new. EIR No. 441, certified for the existing General Plan, found there would be several significant and unavoidable air quality impacts, even after the implementation of all feasible mitigation, for both short-term (mainly construction-related) air quality emissions and for long-term (operational) emissions (from both vehicular and stationary sources). For this alternative, such impacts would similarly be significant for both the individual projects that implement the alternative and cumulatively, as indicated in Table 6.4-J.

h. Greenhouse Gas Impacts

The "California Renewables Portfolio Standard" that also arose out of AB 32, as well as other state legislation, directs electricity providers to generate (or procure) at least 33% of their energy from specific renewable sources by 2020. The green energy industry proposed under this alternative would greatly aid the State of California in achieving this standard. Ironically, however, the substantial increase in VMTs resulting from workers commuting into Riverside County to work in these industries means that GHG emissions would also increase significantly. Specifically, while operational air pollutants would increase by roughly a quarter to a third, simulations predict that under this alternative GHG emissions would more than double. In addition to vehicles, stationary source increases associated with the various energy generation and industrial uses would also contribute.

This effect seems contradictory on the surface, given the GHG reductions associated with non-fossil fuel-based energy generation. However, it must be remembered that the energy generated would be disturbed across most of Southern California (e.g., all of the territory served by Southern California Edison) or, possibly even across the Western U.S. (if the electricity is sold to other, more distant providers), and that fossil fuels would still be providing the majority of energy generation. As a result, the overall decrease in GHG emissions for Riverside County would be relatively small on a per-capita basis, particularly when compared to the direct increase in emissions added to the countywide GHG inventory as a result of the increased commuter trips from the thousands of added green-energy workers.

The result of these competing needs means that, even assuming that a Riverside County CAP was adopted and implemented as part of this alternative, this alternative would contribute cumulatively significant levels of GHGs to the region. Further, it is possible that the VMT increases would also prevent Riverside County from achieving consistency with the State of California's AB 32 regulations. Because of the competing regional factors, more advanced modeling would be needed than is feasible for the scope of this EIR. However, since a key focus of California State's Scoping Plan is reducing vehicle emissions, including through reductions in VMTs, this alternative would likely be inconsistent with this State of California goal.

As such, since this alternative includes CAP implementation, additional implementation measures, for example expansion of mass transit, light rail or other modes for reducing single-occupant vehicle trips, would have to be added to the CAP. Though specific calculations of additional GHG reductions for proposed mitigation were outside the scope of this alternatives analysis, based on the wealth of published plans and measures, both at state and regional levels, it is assumed the proposed Riverside County CAP could be amended to achieve the necessary carbon emission reductions, despite the cumulatively considerable increase in GHG emissions associated with this alternative.

i. Energy Impacts

The energy savings associated with the fewer number of homes under this alternative are offset by the large increase in industrial and energy-related land uses. Compared to the existing General Plan, this alternative would use more than twice the electricity and natural gas. Compared to Riverside County build out of the updated General Plan (with GPA No. 960), energy use under this alternative would be roughly 40% greater for both electricity and natural gas. The difference between the two is lessened by implementation of the energy conservation measures arising from the Riverside County Climate Action Plan which is included in either of these scenarios (existing General Plan build out scenario does not include the CAP). Unlike the proposed project, however, the increased availability of electricity that is presumed to arise from the green energy generated under this alternative would ensure that the project's incremental increases in electricity demand are not cumulatively considerable.

j. Noise Impacts

Because ambient noise levels, particularly in urban and suburban areas, are generated largely by vehicles, any increases in traffic volumes generally will also increase noise levels. Thus, for this alternative the projected VMT increases mean noise levels would also increase. In locations where existing (baseline) noise levels already exceed acceptable standards, the additional VMT resulting from this alternative would further exacerbate this significant impact. Due to the widespread, incremental nature of traffic-related noise increases, it is not possible to avoid or mitigate such impacts to the thousands of homes and other uses that would ultimately be exposed to excessive noise levels over time. Future increases in (long-term) ambient and short-term (construction) noise that exceed standards would be cumulatively significant under this alternative.

In areas where the development footprint is smaller (e.g., where OS-RUR homes will instead become conserved, undeveloped open space), ambient noise levels will be protected from growth increases. Overall, however, this affects relatively few people, due to the sparse levels of development at issue. Of greater significance would be noise level increases associated with the additional green energy uses developed within the rural parts of Riverside County. In addition to temporary (short-term) construction noise, industrial uses, including green energy generation, can often increase operational noise levels. Electricity generation via wind (turbines or propellers) may increase noise and vibration exposure to sensitive receptors (e.g., residents, students, patients of nursing homes,

hospitals, etc.) while they are in operation. Geothermal energy generation can be noisy if high-pressure releases from steam lines, pumps, valves or other hydraulic systems are involved.

k. Public Facilities, Parks and Recreation Impacts

As with other population-based effects, the slight (4%) decrease in population that would result under this alternative would result in slightly lower impacts to parks and recreational facilities and other public facilities (including schools, libraries, landfills, medical facilities, government facilities, etc.) Among other things, this would also slightly decrease the effects of use (e.g., wear-and-tear) on existing parks, recreational and other public facilities, as well as decrease or slightly slow the need for additional facilities to serve the growing populace. These decreases, particularly combined with the emphasis on decreasing outlying rural housing and populations, would serve to ensure that incremental impacts associated with public services, parks and recreation are not cumulatively significant under this alternative.

l. Water Impacts

Under this alternative, residential uses would decrease by roughly 15,400 units overall, leading to a decrease in the amount of potable water needed for domestic use, as well as resulting in corresponding decrease in the amount of wastewater (sewage) generated needing sanitary sewer disposal, wastewater treatment or subsurface (septic system) disposal.

Industrial uses, under this alternative, including those associated with green energy generation directly, would be substantially increased, as would their resultant water needs. Industrial and energy-related water needs would include both those associated with ordinary domestic uses, such as bathrooms, kitchens, drinking fountains, landscaping irrigation, etc., as well as industrial "process" uses specific to the industry (for example, water cooled cutting equipment, washing parts, steam production, etc.). In addition, certain energy generation systems can also have extra water needs. As an example: photovoltaic solar panels can require fairly frequent cleaning (and hence water) to maintain optimal electricity generation rates; cooling towers associated with steam-based electricity generation (whether powered by fossil fuels, biomass or other) can also use large amounts of water as the principle coolant. (In fact, the US Geological Survey estimates that on a national level "41% of all freshwater withdrawals in the United States in 2005 were for thermoelectric power operations, primarily for cooling needs" (as noted in USGS Circular No. 1344, "Estimated Use of Water in the United States in 2005," page 52, 2009).)

According to the National Renewable Energy Laboratory (NREL), since the water used is normally re-injected back into the aquifer, geothermal energy production has much fewer impacts on freshwater resources than might be expected, but the energy technology with the lowest water-use by far is wind energy, which does not use water other than for incidental human use (bathrooms, etc.) and, rarely, washing of equipment (per NREL's "A Review of Operational Water Consumption and Withdrawal Factors for Electricity Generating Technologies," table 1, 2011). Not surprisingly, water usage rates for electricity generation can vary widely depending on the exact technology used. In total, estimates indicate that this alternative's net water demand would be roughly 1.3 million to 1.4 million acre-feet per year greater at build out than for the existing General Plan or project-amended General Plan, respectively.

As result of this increased demand, additional water supplies (both potable and industrial) and the infrastructure to treat and deliver such water would be needed within unincorporated Riverside County beyond already identified existing needs. Since water availability is already outstripped by demand, the additional water demand associated with this alternative would result in significant impacts on existing water supplies; both for imported water and groundwater. Where increases would be served by existing groundwater supplies, increased demands

could result in significant drawdown or overdraft of existing groundwater basins. And, even in cases where the additional basin drawdown itself was not significant, it is likely that such increased use would contribute incrementally to a cumulatively significant impact on water basins already in overdraft or where the current basin withdrawals exceed its replenishment (which would eventually lead to depletion of the basin). Since California's water supply is finite and the State of California has identified critical constraints related to imported water availability, build out of Riverside County pursuant to this alternative would result in cumulatively significant impacts on imported water supplies.

Lastly, this alternative could also have cumulatively significant effects on existing drainage patterns. The hundreds to thousands of acres devoted to energy generation would be subject to construction-related (short-term) water quality effects from siltation and erosion of construction sites. More significantly, wide expanses of cleared land necessary for these facilities (e.g., panels for photovoltaic solar farms, mirrors for concentrated solar generation, etc.) may be at greater risk for runoff, siltation and erosion if not properly designed, installed and maintained.

m. Significant Cumulative Impacts

In general, most of the impacts found cumulatively significant for the proposed project are substantially similar to those that would occur for this alternative. However, a few exceptions exist.

First, this alternative would minimize the effects of urbanizing growth pressures on agricultural uses and limit encroachment and conflicts with existing agricultural activities, resulting in less-than-significant cumulative impacts in these areas. It would alter less vacant land overall, resulting in lessened potential for cumulatively significant impacts to spatial (ground-based) resources, such as paleontological and archeological resources, decrease residential demand for energy, decrease the people and property potentially at risk for wildfire threats in wildlands and interface fringes, and, lastly, decrease cumulative impacts on a variety of public facilities, including parks, landfills, schools, libraries and medical facilities, as well as wastewater treatment facilities and related infrastructure.

This would result in substantially greater cumulative impacts beyond those associated with the proposed project in several key areas. It would have individually and cumulatively considerable aesthetic and viewshed impacts due to the incremental effects of introducing hundreds to thousands of acres of energy-generating uses into rural areas. It would result in cumulatively significant greenhouse gas emissions and direct or indirect economic growth. It would also result in cumulatively significant impacts to existing and future roadway segments and intersections beyond those already forecast for significant impacts under either the existing General Plan or the General Plan as amended by GPA No. 960.

n. Growth Inducement

As clearly outlined above, with its slightly smaller development potential and footprint, but larger overall industrial uses, including a substantial increase in the area devoted to green energy generation, the Green Economy Alternative would accommodate a slightly smaller resident population, but a much larger workforce than the proposed project. Thus, this alternative's overall growth-inducing effects would be somewhat higher than the project's. As with those for General Plan build out pursuant to the project, most of this alternative's growth-inducing impacts would be significant and unavoidable. It would foster direct and indirect population growth. In particular, it would foster substantially greater levels of direct and indirect economic growth as a result of the nearly one million additional jobs created. It would also facilitate the construction of additional housing (presumably to supply demand created by workers looking to reduce their commutes from outlying areas).

It does not, however, address existing Rural Village Study Areas (RVSAs) and Rural Village Overlays. Thus, this alternative does not remove the substantial obstacles to growth that have arisen in the existing General Plan due to lack of detailed planning for these RVSAs. By reducing the development envelope allowed for OS-RUR in wildlands and interface areas, it does, however, prevent growth that would cause additional significant environmental effects through encroachment into these isolated and remote parts of Riverside County. It also limits to some extent the extent of population growth that would be expected, thus reducing slightly the overall potential for strain on community services and facilities, as compared to build out of either the existing General Plan or the amended plan as proposed by GPA No. 960.

o. Impacts to Cities

The proposed alternative is derived from build out of the existing Riverside County General Plan, with modifications, thus impacts to cities were not included in Table 6.4-J. Rather, it was assumed that growth within the cities would occur in accordance with each city's general plan, as required by state law. See Table 6.4-I for RCCDR estimated build out results for incorporated Riverside County.

Though not addressed separately, the significant effects of this alternative on the cities within and adjacent to unincorporated Riverside County would be limited principally to cumulative effects caused by the incremental contributions arising from development in Riverside County. These significant cumulative effects would occur in areas where additional future county development causes an impact to exceed a threshold or standard of acceptability. This would occur where development in unincorporated Riverside County areas borders cities or causes traffic, noise or other effects that carried over a municipal boundary.

The increase in jobs generated under this alternative would likely cause indirect growth in terms of both housing demand and demand for supporting retail, commercial and other services within the cities as well as unincorporated Riverside County. In addition, the reduced rural, wildland and interface development potential may serve to drive more development into other more remote areas outside of unincorporated Riverside County (e.g., eastern San Bernardino County or northern Imperial County). This would increase the cumulative effects of growth within these distant areas.

In total, significant cumulative effects to cities result from this alternative would include:

- Air quality effects where emissions occurring within Riverside County would affect air pollutant levels within cities, including for short-term (construction) and long-term (operational) emissions, particularly traffic-related emissions. Exposure of sensitive receptors within cities to air pollutants generated within Riverside County and cumulatively significant air quality impacts could also occur.

- Noise level increases within Riverside County could affect levels within cities, including for construction (short-term) and operational (long-term) emissions. In particular, traffic-related noise increases could result in cities as a result of changes in county traffic patterns and/or increased trips.

- Increased traffic within Riverside County would also result in significant traffic increases in cities where links between city and county circulation networks interface. By causing traffic slowing on county roads, slowing or backups could cascade onto city roads. Also, when a county roadway becomes less able to accommodate traffic, drivers seeking alternate routes may end up traveling through cities on surface streets. Lastly, development of land uses that attract visitors, including the job-centers proposed under this alternative, within unincorporated Riverside County could increase trips on city roads that lead to/link to the use within Riverside County.

- Although no substantial increases in urban growth are proposed under this alternative, it is possible that development in unincorporated Riverside County areas could result in increases in the number of visitors to public facilities within adjacent cities, e.g., libraries, parks, post offices, hospitals, etc. Such increases are not expected to be cumulatively considerable, however.

- In locations where cities rely upon the same groundwater basin(s) that also serve an unincorporated area, additional development within Riverside County could lead to significant demands on the city's existing water supply. Where a groundwater basin is already in overdraft, adjudicated or where future demands would exceed the recharge capability of the basin, both the city and county areas relying on the basin would be significantly affected. This may particularly be significant where additional added urban demands would be met solely by groundwater from basins shared by city water providers.

- Where cities and unincorporated areas are both served by the same water district, additional development within Riverside County could increase demand on the existing imported water supply. Since such supplies are finite and subject to factors beyond the control of the water district (e.g., rainfall amounts, state mandates, court-ordered diversions for fish species in the Sacramento/San Joaquin Delta, etc.), increases exceeding the districts' ability to meet the need would result in significant impacts.

3. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative appears to satisfy all of them. It provides a suitable plan for further progress within Riverside County, particularly in terms of increasing jobs availability. Even though it does not update the RVOSAs identified in 2003 for future planning specifications, it provides an alternate plan for future development and would also provide LUD updates, thus it does addresses the updated land use objective. It would provide updated technical data, simply by definition. And, despite increased greenhouse gas emissions, it would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning). Thus, it is would adequately meet the address new needs objective. Lastly, it would further the Riverside County Vision, since it proposes to greatly increase jobs in the region, helping to balance a region that traditionally has more homes than jobs, while preserving open space and the quality of life for Riverside County residents. This new economy would serve to "enhance" and "extend" the "continued progress" within Riverside County.

4. Conclusions

Overall, as indicated in Table 6.4-J, the Green Economy Alternative seeks to provide the planning needed to help California, and the country, transition from the existing, petroleum-based economy to a new, cleaner "Green Economy" based on alternative energy generation and related industries. Despite the decreased reliance on fossil fuels, however, the analysis herein finds that this alternative would have environmental impacts of similar severity to those forecast for build out of the General Plan as updated per GPA No. 960. In certain areas, in fact, as summarized in Table 6.0-A, this alternative would have substantially greater significant impacts driven mostly by the large increase in jobs created in Riverside County.

While it would reduce certain *regional* impacts (such as greenhouse gases and, possibly, traffic congestion), it would do so at the expense of substantial increases in cumulative environmental impacts within Riverside County itself. In particular, key areas adversely affected are those associated with the increased number of commuters heading into Riverside County for work: increased traffic and congestion (due to increased vehicle miles traveled within the county), higher ambient noise levels (increased due to roadway traffic noise), increased localized and regional air pollution and greenhouse gas emissions. This alternative would also result in specific new significant impacts

to viewsheds and aesthetics (including scenic highways) and to roadways and intersections in which the additional traffic volumes cause LOS ranges to be exceeded above and beyond those already identified by either the existing General Plan or for this proposed project (i.e., in Section 4.18). Lastly, even though not new significant impacts, water-related impacts to domestic and groundwater supplies would also be substantially greater under this alternative.

Taken together, this alternative only addresses four of the seven areas of significant effects associated with the proposed project. Although an improvement in many ways over the project, because of the increase in jobs and the improved jobs-to-housing balance, this alternative has substantially greater adverse effects associated with this greenhouse gases, traffic and aesthetics. Even though this alternative meets all of the project objectives, it does so at the expense of greater environmental effects. For all of these reasons, this alternative would not be deemed the environmentally superior alternative.

In summary, this alternative is not an acceptable means for achieving the stated project objectives and for all of the above reasons, the Green Economy Alternative is not deemed the preferred alternative.

F. Reduced Rural Villages Alternative

The most fundamental role of a city or county's general plan is to provide a blueprint for the future growth and development expected (or desired) to occur in the jurisdiction over time. Riverside County's RCIP General Plan fundamentally accomplishes this through the dual mechanisms of the Land Use Certainty System and a corresponding set of General Plan LUDs, which are applied to all parcels under Riverside County's jurisdiction and dictate acceptable land uses in a manner roughly akin to zoning. See the Land Use and Administrative Elements of the General Plan for full details on these issues and Section 3.0 (Project Description) of this EIR for additional information relative to this project specifically.

To accommodate future development pressures in portions of unincorporated Riverside County expected to see growth, the Riverside County General Plan also includes a number of RVOs, in addition to the basic Foundation Components and LUDs. As described in the General Plan (page LU-67), RVOs allow "a concentration of development within rural areas" designed to "accommodate a range of residential and local-serving commercial, educational, cultural and recreational opportunities." As such, RVOs are designated in portions of Riverside County that, despite being currently rural (or otherwise not urbanized), are planned to grow as Riverside County's population increases over time. Thus, the "overlay" function of an RVO is that it provides a secondary General Plan LUD to allow for both the existing (typically rural) use to remain indefinitely until growth pressures make the area ripe for expanded development, at which time the alternate (typically more community development-driven) LUD included in the RVO may be utilized. In this way, future growth can be accommodated in a manner that allows for its orderly development while allowing existing rural communities to continue in their current functions.

The General Plan also includes RVO Study Areas (RVOSAs), locations in which "dispersed development patterns, physical characteristics, such as topography and floodplains, and other factors" prevented the definitive placement of an RVO prior to the October 2003 adoption of the RCIP General Plan for Riverside County. The intent for these areas is for subsequent study to result in these RVOSAs to either be finalized into specific RVOs or to be deleted entirely. This project, GPA No. 960, in fact, addresses this very issue. Part of the development process for this General Plan update included review of all existing RVOSAs in the General Plan. Planning Department staff, as advised by the General Plan Advisory Committee, finalized a number of proposals addressing RVOSAs as part of GPA No. 960. Several RVOSAs were dropped from areas no longer deemed suitable for serving future urbanizing populations (e.g., the El Cariso Village Study Area above Lake Elsinore) and several were essentially left as-is after being found not ready for additional plans (e.g., the Sky Valley RVSA in the

Western Coachella Valley, northeast of Palm Springs). See Section 3.0 for the full list and descriptions of the RVOs and RVOSAs, as well as other Policy Areas, addressed herein.

As noted throughout this EIR, both the existing General Plan and the proposed project, GPA No. 960, will accommodate and facilitate the continued growth of unincorporated Riverside County. As analyzed throughout this EIR, this ongoing growth and resultant urbanization will have a number of significant adverse environmental impacts throughout Riverside County. Thus, this alternative was conceived to address the significant effects of continued urbanization by limiting the plans designed to accommodate it in the General Plan. Accordingly, this alternative proposes to address environmental effects stemming from population growth by limiting the planned RVOs that would be incorporated into the General Plan as a result of GPA No. 960. Specifically, this alternative proposes to eliminate the two RVOs proposed under this project (Good Hope and Meadowbrook), leaving the areas with only their existing underlying rural LUDs. To counter urbanizing effects beyond the RVOSAs, this proposal also includes deleting other proposed urbanization changes from GPA No. 960, such as the Northeast Business Park Overlay and most of the Lakeland Village (i.e., Lake Elsinore Environs Policy Area) changes and also existing and proposed policies for the Anza and Aguanga areas in southern Riverside County. Full details are outlined below.

1. Assumptions

Accordingly, the development (build out) scenario developed for the Reduced Rural Villages Alternative is based on the existing (2008 for the purposes of this EIR) General Plan. To it, the following specific changes are applied:

Rural Village Removal: As described in Section 3.0, this project proposes to provide two new Rural Village Overlays over the existing General Plan's Good Hope and Meadowbrook RVOSAs. Under this alternative, these RVOs do not go forward and the existing rural LUDs are left as currently designated in the existing General Plan. Existing/proposed RVOs, RVSAs and/or Policy Areas proposed for the Aguanga and Anza areas in REMAP are also eliminated, and only the existing base LUDs would be allowed to develop.

Other Proposed Changes: Also as described in Section 3.0, this project includes a proposed overlay (Northeast Dairies Business Park Overlay) in the Lakeview/Nuevo Area Plan that would allow existing agricultural lands ("AG" LUD) presently utilized for dairies to develop in the future as a business park ("BP" LUD). This change, affecting nearly 260 acres total, would be rolled back under this alternative. Additionally, to address growth within the eastern desert portion of Riverside County, existing or proposed policy areas for Chiriaco Summit and Vista Santa Rosa (both in the Eastern Coachella Valley Area Plan) also would be eliminated. No future urbanization would be allowed under this alternative.

Effects on LUDs: In total, these changes would directly affect a variety of LUDs, including: reducing future Medium-High Density Residential (MHDR) by approximately 200 acres and Medium Density Residential (MDR) by roughly 270 acres, Commercial-Retail (CR) by 105 acres, BP by 260 acres and Light Industrial (LI) by 70 acres. In preserving the existing/ underlying rural uses, a number of LUDs would see acreages increase, including: 20 acres of Rural-Mountain (RM) residential and 710 acres of lower-density housing (Estate-Density [EDR], Very Low-Density [VLDR] and Low-Density Residential [LDR]), as well as roughly 260 acres of Agriculture. All other proposed changes affect development in ways not reflected by the General Plan LUDs applied.

Additional Assumptions: All of the general assumptions outlined at the beginning of this section also apply. There are no exceptions or changes to them for this alternative, or additional assumptions beyond those already covered above.

a. Baseline Assumptions

As with all of the other alternatives, as well as the rest of the EIR for that matter, the starting baseline assumptions for the Reduce Rural Villages Alternative are the existing physical conditions within Riverside County. Full details on these existing conditions are provided throughout the EIR and, in particular, conditions for each environmental issue are presented in the section addressing that topic. As shown in Table 6.4-K (Reduced Rural Villages Alternative – Assumptions and Projections), the baseline conditions capture both the cities and unincorporated portions of Riverside County. Also see that table's footnotes for additional comments addressing baseline assumptions.

b. Build Out Assumptions

For this particular alternative, the existing General Plan is assumed to build out as previously outlined, except for the changes noted in the amounts of RM, lower-density residential (EDR, VLDR, LDR), MDR, MHDR acreage (and corresponding numbers of dwelling units), CR, LI, BP and AG associated with the RVOs, RVOSAs and various existing and proposed policy areas throughout Riverside County. The effects of these land use changes on the build out demographics of Riverside County (population, housing and job outcomes) are outlined in Table 6.4-K, below. The resultant environmental implications are summarized in Table 6.4-L (Reduced Rural Villages Alternative – Environmental Effects Summary).

2. Environmental Implications

Pursuant to Section 15126.6(d) of the State CEQA Guidelines, Table 6.4-L, below, outlines in matrix form the "significant environmental effects" of the Reduced Rural Villages Alternative. Discussion of the significant environmental effects noted, follow. Where the alternative would cause a significant effect beyond that of the proposed project, it is also discussed below.

Overall, the reductions in development potential (residential densities and economic use intensities) proposed under this alternative serve a number of complementary purposes. The reduction in housing (11,400 fewer units than proposed for the existing General Plan) would have a corresponding effect on Riverside County population, decreasing it by 37,000 people. Similarly, the reduced commercial and industrial uses proposed would result in roughly 42,000 fewer jobs at build out. This decrease in workers would yield complementary decreases in vehicle miles traveled for commuters, reducing traffic congestion and the associated effects on air quality, greenhouse gas emissions and noise levels. The decreased population would also lessen demand for and effects on public services and facilities, such as schools, parks, etc. Unlike the prior Green Energy Alternative, this alternative's population decreases would not be offset by other proposed increases elsewhere in unincorporated Riverside County. Accordingly, this alternative does not cause any impacts that would be substantially greater than those for build out of either the existing or updated General Plans. All of these issues and more are discussed more fully, below.

Table 6.4-K: Reduced Rural Villages Alternative – Assumptions and Projections

Reduced RVOs Alternative ASSUMPTIONS[7]	Baseline: Existing (2007) Conditions[1, 3]			Build Out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Land Uses						
Residential	109,600 ac	113,700 ac	**223,300 ac**	1,718,200 ac	186,100 ac	**1,904,300 ac**
Commercial [8]	27,200 ac	31,800 ac	**59,000 ac**	8,200 ac	31,800 ac	**40,000 ac**
Industrial [9]	124,200 ac	121,400 ac	**245,600 ac**	79,300 ac	121,300 ac	**200,600 ac**
Agricultural	226,900 ac	58,600 ac	**285,500 ac**	189,200 ac	61,000 ac	**250,600 ac**
Open Space [10]	757,000 ac	11,300 ac	**768,300 ac**	1,342,200 ac	34,000 ac	**1,376,200 ac**

Reduced RVOs Alternative ASSUMPTIONS[7]	Baseline: Existing (2007) Conditions[1, 3]			Build Out: Future (2060) Conditions [2, 4, 6]		
	Unincorp. County	Cities [5]	Countywide Total	Unincorp. County	Cities [5]	Countywide Total
Vacant / Other [11]	2,874,400 ac	194,300 ac	**3,068,700 ac**	673,800 ac	109,100 ac	**782,900 ac**
Total Acres	**4,010,900 ac**	**543,400 ac**	**4,554,300 ac**	**4,010,900 ac**	**543,300 ac**	**4,554,200 ac**
Socioeconomic Data						
Dwelling Units	207,000 du	566,500 du	**773,400 du**	520,100 du	1,040,400 du	**1,560,500 du**
Population	553,500 pers	1,525,100 pers	**2,078,600 pers**	1,690,400 pers	3,006,700 pers	**4,697,100 pers**
Employment	107,900 jobs	592,400 jobs	**700,300 jobs**	554,200 jobs	1,318,200 jobs	**1,872,400 jobs**
Jobs-to-Housing Ratio	0.52	1.05	**0.91**	1.07	1.27	**1.20**
Average Resi. Density	1.89 du/ac	4.98 du/ac	**3.46 du/ac**	0.30 du/ac	5.59 du/ac	**0.82 du/ac**

Footnotes:
1. Source for land use, existing: EIR Table 4.2-F.
2. Source for land use, build out: Modeled for alternative (Unincorporated Riverside County) and estimated from RCCDR 2012 data for "Cities, Build out."
3. Source for socioeconomics, existing: EIR Table 4.3-G.
4. Source for socioeconomics, build out: EIR Table 4.3-G for the cities and modeled for alternative (Unincorporated Riverside County).
5. Since their incorporations occurred after the date of NOP issuance for this EIR, the cities of Eastvale and Jurupa Valley are included in the unincorporated baseline county totals, rather than the incorporated totals.
6. "Build out" conditions are those projected for full realization of the alternative's land use plans. For this alternative, the build out scenario includes the following assumptions:
   a. All development within the unincorporated portion of Riverside County occurs as directed by the existing (2008) Riverside County General Plan. No additional unincorporated lands are annexed into any cities.
   b. The incorporated portions of Riverside County fully develop (build out) according to the land uses mapped in the existing General Plans for the individual cities (as interpreted by RCCDR).
7. All values rounded to the nearest hundred. Thus, totals may not sum precisely.
8. Commercial uses include commercial-retail, commercial-office, commercial-tourist, community center and MUPA (mixed-use).
9. Industrial uses include heavy and light industry, business parks, warehouses and public facilities, as well as mining and (active) recreational uses.
10. Open space uses include conservation lands, as well as water (lakes, etc.).
11. "Other" uses encompass any not listed elsewhere and include freeways, roads, canals, etc., as well as vacant (undeveloped) lands.

Source: See footnotes, above, for data sources.

Table 6.4-L: Reduced Rural Villages Alternative – Environmental Effects Summary

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.2 – Land Use							
4.2.A	Physically divide an established community.		•				=
4.2.B	Conflict with land use policies intended to avoid or mitigate an environmental effect.		•				↓
4.2.C	Conflict with any habitat conservation plan or natural community conservation plan.		•				↓
4.3 – Population and Housing							
4.3.A	Induce direct or indirect population growth.		•				↓
4.3.B	Displace residential units.		•				↓
4.3.C	Displace people.		•				↓
4.4 – Aesthetic and Visual Resources							
4.4.A	Adversely affect scenic vistas.			•		•	↑
4.4.B	Adversely affect scenic resources within State Scenic Highways.					•	↑
4.4.C	Adversely affect existing visual character.			•			↑
4.4.D	Cause adverse light and glare effects.		•			•	↑
4.4.E	Interfere with nighttime use of the Palomar Astronomical Observatory.		•				↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.5 – Agricultural and Forestry Resources							
4.5.A	Cause the direct or indirect conversion of designated Farmlands.				•	•	↑↓
4.5.B	Encroach on or conflict with existing agricultural uses.				•	•	↑↓
4.5.C	Adversely affect forest lands and forestry uses.		•				↓
4.6 – Air Quality							
4.6.A	Conflict with air quality plans.				•	•	↓
4.6.B (1)	Cause significant construction (short-term) air emissions.				•	•	↓
4.6.B (2)	Cause significant operational (long-term) air emissions.				•	•	↓
4.6.C	Cause cumulatively significant project air quality impacts.				•	•	↓
4.6.D	Expose sensitive receptors to air pollutants.				•	•	↓
4.6.E	Expose substantial numbers of people to objectionable odors.			•			↓
4.7 – Greenhouse Gases							
4.7.A	Generate substantial greenhouse gas emissions.			•			↓
4.7.B	Conflict with greenhouse gas reduction plans, policies or regulations.			•			↓
4.8 – Biological Resources							
4.8.A	Adversely affect riparian or other sensitive habitats.			•			↓
4.8.B	Cause direct and indirect impacts to protected species or their habitats.			•			↓
4.8.C	Adversely affect wetlands.			•			↓
4.8.D	Impede species movement, migration, wildlife corridors or use of wildlife nursery sites.			•			↓
4.8.E	Conflict with adopted habitat conservation plans.		•				↓
4.8.F	Conflict with local biological resource protection policies or ordinances.		•				↓
4.9 – Cultural and Paleontological Resources							
4.9.A	Adversely change the significance of historical resources.		•				↓
4.9.B	Cause the destruction of known archeological resources.			•		•	↓
4.9.C	Cause the destruction of unique paleontological resources or sites.		•			•	↓
4.9.D	Result in the disturbance of human remains.		•				↓
4.10 – Energy Resources							
4.10.A*	Increase demand for electricity.		•			•	↓
4.10.B	Increase demand for natural gas.		•			•	↓
4.10.C	Cause the inefficient use of energy.		•				↓
4.11 – Flood and Dam Inundation Hazards							
4.11.A	Result in housing within flood hazard areas.		•				↓
4.11.B	Cause impediment of flows.		•				↓
4.11.C	Expose people or structures to flooding hazards, including flooding due to dam or levee failure.		•				↓
4.11.D	Cause the adverse alteration of drainage patterns or substantially increase surface runoff.		•				↓
4.11.E	Cause inundation risks due to seiche, tsunami or mudflow.		•				↓
4.12 – Geology and Soils							
4.12.A	Expose people or structures to substantial adverse effects due to rupture or a known earthquake fault.		•				↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.12.B	Expose people or structures to substantial strong seismic groundshaking.		•			•	↓
4.12.C	Expose people or structures to substantial adverse effects due to seismic-related ground failure, including liquefaction.		•				↓
4.12.D	Expose people or structures to substantial adverse effects due to landslide.		•			•	↓
4.12.E	Result in substantial soil erosion or topsoil loss.		•				↓
4.12.F	Result in development on unstable geological units or soils.		•				↓
4.12.G	Result in development on expansive soil.		•				↓
4.12.H	Result in development on soils incapable of supporting septic tanks or alternative wastewater disposal systems.		•				↑↓
4.13 – Hazardous Materials and Safety							
4.13.A	Create a significant hazard through the routine transport, use or disposal of hazardous materials.		•				↓
4.13.B	Cause a significant hazard through the accidental release of hazardous materials.		•				↓
4.13.C	Result in hazardous emissions or related hazards within ¼-mile of a school.		•				↓
4.13.D	Result in a significant hazard due to development on a Cortese List hazardous materials site.		•				↓
4.13.E	Result in a safety hazard for people within a two-mile radius of a public or public use airport.		•				↓
4.13.F	Result in a safety hazard in the vicinity of a private airstrip or heliport.		•				↓
4.13.G	Impair or interfere with adopted emergency response or evacuation plans.		•				↓
4.13.H	Expose people or structures to significant risk due to wildland fire.		•			•	↑
4.14 – Mineral Resources							
4.14.A	Result in the loss of availability of delineated locally important minerals.	•					=
4.14.B	Result in the loss of availability of known mineral resources.		•				↓
4.15 – Noise							
4.15.A	Generate noise or cause noise exposure in excess of standards.				•	•	↓
4.15.B	Generate or cause exposure to excessive groundborne vibration.			•			↓
4.15.C	Result in a substantial permanent increase in ambient noise levels.				•	•	↓
4.15.D	Result in a substantial temporary or periodic increase in ambient noise.				•	•	↓
4.15.E	Expose people to excessive airport-related noise levels.		•				↓
4.16 – Parks and Recreation							
4.16.A	Increase the use of existing parks or recreational facilities resulting in their substantial physical deterioration.		•				↓
4.16.B	Trigger growth effects resulting in the need for additional parks or recreational facilities.		•				↓
4.16.C	Result in significant adverse effects due to the need for additional parks or recreational facilities.		•				↓
4.17 – Public Facilities							
4.17.A	Cause adverse environmental effects due to the need for fire protection services.		•			•	↑
4.17.B	Cause adverse environmental effects due to the need for law enforcement services.			•		•	↓
4.17.C(1)	Adversely affect or exceed the permitted capacity of a landfill.			•		•	↓
4.17.C(2)	Cause inconsistencies with applicable statutes and regulations related to solid waste, including the Riverside County Integrated Waste Management Plan.		•				=
4.17.D	Cause adverse environmental effects due to the need for schools.		•			•	↓

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
4.17.E	Cause adverse environmental effects due to the need for library services.			•		•	↓
4.17.F	Cause adverse environmental effects due to the need for medical facilities.			•		•	↓
4.18 – Transportation and Traffic							
4.18.A*	Conflict with circulation system effectiveness regulations for any transportation, including vehicular, mass transit and non-motorized travel.				•	•	↓
4.18.B*	Conflict with a congestion management program, including level of service (LOS) standards and travel demand measures.				•	•	↓
4.18.C	Cause substantial safety risks as a result of a change in air traffic patterns.		•				↓
4.18.D	Cause substantial alterations in waterborne, rail or air traffic.		•				↓
4.18.E	Substantially increase road hazards due to design or incompatible uses.		•				↓
4.18.F	Cause an adverse effect on or need for new or altered road maintenance.		•				↓
4.18.G	Cause an adverse effect on circulation during construction.		•				↓
4.18.H	Result in inadequate emergency access.		•				↓
4.18.I	Conflict with policies for public transit or non-motorized travel, or decrease the performance or safety of such facilities.		•				↑
4.19 – Water Resources							
4.19.A	Result in insufficient water supply.				•	•	↓
4.19.B	Substantially deplete groundwater supplies or substantially interfere with groundwater recharge.				•	•	↓
4.19.C	Substantially degrade water quality.		•				↓
4.19.D	Violate water quality standards or waste discharge requirements.		•				↑↓
4.19.E	Exceed wastewater treatment requirements.		•				↓
4.19.F	Exceed wastewater treatment capacity.		•				↓
4.19.G	Result in significant adverse effects due to the construction of new or expanded water or wastewater facilities.		•				↓
4.19.H	Substantially alter existing drainage patterns resulting in substantial erosion or siltation.		•			•	↓
4.19.I	Cause runoff exceeding stormwater drainage system capacities or cause substantial water pollution.		•			•	↓
4.19.J	Cause significant adverse effects due to the need for new or expanded stormwater drainage facilities.		•			•	↓
5.2 – Significant Irreversible Changes							
5.2.A	Result in a large commitment of non-renewable resources that make later removal or non-use unlikely.				•	•	↓
5.2.B	Result in the unjustified commitment of irretrievable resources.		•				↓
5.2.C	Result in primary or secondary impacts that generally commit future generations to similar uses.				•	•	↓
5.2.D	Result in an environmental accident that could cause irreversible damage.		•				↓
5.4 – Significant Growth-Inducing Effects							
5.4.A	Foster direct or indirect economic growth.				•	•	↓
5.4.B	Foster direct or indirect population growth.				•	•	↓
5.4.C	Result in construction of additional housing.				•	•	↓
5.4.D	Remove obstacles to population growth.				•	•	↑

Impact #	Impact Title / Description [1, 3, 5, 6]	No Impact	Less Than Signif.	Less Than Signif. With Mitigation[2]	Significant	Cumul. Significant	Relative to Proj.[4]
5.4.E	Facilitate other activities leading to significant environmental effects; e.g., encroach into isolated or remote areas.				•	•	↑
5.4.F	Result in population increase that may strain community services or facilities.				•	•	↓

Footnotes:
1. Impacts are based on a comparison of the effects of build out of the alternative as compared to the environmental baseline. Unless noted otherwise in the text, the environmental baseline is assumed to be the same as or substantially similar to that described for the proposed project in Sections 4.0 through 5.0 of the EIR.
2. Only impacts requiring new CEQA-specific mitigation measures to reduce their impacts to less than significant are considered to be "less than significant with mitigation." (Compliance with existing laws, ordinances, regulations, etc., is assumed under CEQA.)
3. Diamond (◊) denotes an impact that is substantially greater than for the General Plan as updated per GPA No. 960.
4. Severity of projected impacts relative to proposed project (rather than environmental baseline), for comparison purposes: ↓, less severe; ↑, more severe; =, approximately the same, ↓↑ = areas of each result.
5. Shaded yellow boxes denote impact finding for build out of the General Plan with GPA No. 960 (per Table 5.5-AJ) for comparison.

Source: Riverside County Planning Dept., new analysis and results from EIR Sections 4.2 - 4.19 and 5.1 - 5.5, 2012.

a. General Impacts

Overall, as indicated in Table 6.4-L, the Reduced Rural Villages Alternative would generally have environmental effects within unincorporated Riverside County similar to, but mostly less substantial than, those forecast for build out of either the existing General Plan or the General Plan as amended per the project. The fewer homes and employment-generating land uses proposed under this alternative means that increases in both population and jobs would be reduced and, with this the attendant environmental effects would be lessened as well. The reduced population at build out would mean fewer population-driven demands for increased infrastructure, public services and facilities, such as parks, schools, post offices, hospitals, etc. Fewer homes and jobs in Riverside County would also mean fewer trips within Riverside County traveled by residents and commuters, resulting in lower VMT, less wear-and-tear on roads and less congestion compared to the General Plan build out scenarios. It should be noted, however, that these effects would be slight compared to the proposed project, GPA No. 960, as this alternative's reduction in jobs and housing only average about 1% each.

In terms of spatial impacts, this alternative proposed an overall development footprint that is largely similar to that associated with the project. The exception, however, is in areas where RVOs and RVSAs are removed under this alternative (particularly in the Aguanga and Anza regions in southwestern Riverside County). These areas would have smaller development footprints with fewer attendant spatial environmental impacts. For this reason, environmental impacts associated with spatial changes (i.e., those tied directly to land itself and the resources on or in it) would generally be less significant under this alternative. This includes all of the impacts associated with: forestry resources, biological resources, including wildlife and its habitat, cultural resources, including historical and archeological artifacts and sites, paleontological resources, flooding and dam inundation hazards, hazards to or due to geology, soils or seismicity, including known earthquake faults, liquefaction zones, expansive soils, etc., exposure to hazardous materials and sites as a result of existing or past activities, and changes in hydrology, drainage or groundwater runoff. Since the areas reduced are small portions of the overall unincorporated Riverside County, the overall effect on the environment relative to these areas would be large similar to those outlined for the proposed project.

In addition, though minor in most cases, this alternative would nevertheless yield decreased impacts across most of the environmental areas examined in this EIR, particularly as compared to those associated with existing General Plan build out. As shown in Table 6.4-L, while lowered, the overall levels of significance for most of

these are roughly the same as those predicted for the proposed project. In only a few areas does this alternative differ from the project: The reduced development potential to accommodate urbanization means this alternative would be unlikely to result in cumulatively significant inducement of population growth (i.e., Impact 4.3.A). In addition, the limits on urban population increases (due to the removal of the RVOs) would also prevent cumulatively significant demands on existing parks and recreational facilities.

In a few areas, competing forces would serve to both increase impacts in some areas and decrease those in other areas; see discussion below. Lastly, this alternative was found to have overall higher impacts in two areas related. First, its encroachment effects on isolated and remote areas would likely be greater than the project's because of greater economic pressure to meet housing demands that could not be provided in more urban areas (Impact 5.4.E). This effect would also be noticeable in the cities and in the counties adjacent to Riverside County. Secondly, the reduced urbanization under this alternative would remain a greater obstacle to growth (i.e., Impact 5.4.D). Additional details, below.

b. Agricultural Resource Impacts

This alternative would not directly affect agricultural uses. Thus, it is assumed they would continue to undergo a gradual loss due to growth pressures from the urban and suburban uses in Riverside County. Also, because of the lack of developable land of higher densities within urbanizing areas, additional development could end up spreading further into rural and agricultural portions of Riverside County under this alternative. The result could be greater levels of low-density rural-residential development to meet demands which would have otherwise been served by more urban or suburban areas. Because of these competing forces, agricultural impacts in Table 6.4-L are listed as both increasing and decreasing. The net impact cannot be foreseen at this level of detail. Absent evidence otherwise, it is assumed that individual and cumulative agricultural impacts associated with this alternative would be significant in ways similar to those outlined in the analysis performed in Section 4.5 for the project.

c. Housing Impacts

On strictly a density basis, this alternative would reduce the total number of housing units accommodated within unincorporated Riverside County at build out; there would be roughly 800 fewer units compared to build out as amended by the project, or 11,400 fewer homes as compared to existing General Plan build out. Thus, population growth in Riverside County would be similarly reduced and Impact 4.3.A would not be cumulatively substantial. In addition, by not providing for Rural Villages in several potentially urbanizing areas, this alternative would also be less likely to cause displacement of people or homes due to the conversion of existing rural uses to more urban uses. In the more rural areas, the existing supply of vacant land would readily accommodate growth without substantial displacement. This alternative would also yield fewer homes on small lots, as well as condominiums, townhomes, apartments and other higher-density, more urban, products. This could cause the available inventories of small units to increase in price, disproportionately impacting those looking for affordable housing who can neither afford (nor want, possibly) a larger home or one located farther from an existing urban center. This issue is discussed further under Growth Inducing Effects.

d. Aesthetic Impacts

This alternative limits future urban development in a manner that would result in increased development pressures occurring in the rural and outlying wildlands and interface areas of tRiverside Ccounty, which might not otherwise be developed. In addition, however, this alternative reduces the potential for rural village (and other less rural) development in the Aguanga and Anza areas. As a result of the lower densities allowed in these areas,

the footprint of urbanized lands would be greatly reduced and effects to the viewshed in relation to the existing rural and undeveloped lands would be lower as well. The potential for scattered low-density rural and estate housing would remain, however. Thus, the overall impacts to aesthetics would likely be slightly higher under this alternative, though within a similar range as those projected for GPA No. 960.

e. Wildfire and Fire Protection Impacts

This alternative would place slightly decreased demands on fire protection services based solely on the overall fewer number of homes. However, by limiting future urban development, unmet development pressures would likely lead to increased homes being built in the rural and outlying wildlands and interface areas of Riverside County, which might not otherwise be developed. Homes in these areas, particularly wildland interface regions, are at the greatest risk for wildfires. Thus, the development pattern that would result under this alternative would likely result in greater overall cumulative demands for fire protective services (Impact 4.17.A) and somewhat increased hazards associated with the exposure of people and property to wildfire hazards (Impact 4.13.H).

f. Traffic and Circulation Impacts

This alternative has a reduced population due to the reduced urban housing density; vehicle trips from residents overall would thus be reduced correspondingly. The intensities of economic land uses, particularly Commercial-Retail, Business Park and Light Industrial, would also be decreased. As indicated by the CalEEMod simulation performed for this alterative, this would result in an overall decrease in the vehicle miles traveled within unincorporated Riverside County. Thus, it would be expected that wear-and-tear on roads and associated road maintenance needs would be similarly reduced.

As discussed under impacts to cities, below, however, these decreases would likely be offset by increased travel (and, hence, traffic) in other locations outside of unincorporated Riverside County, including its cities and the adjacent counties. Additionally, the increased emphasis on lower density and, in particular, rural and scattered estate-density homes under this alternative would be less likely to facilitate use of non-pedestrian transportation. This pattern would likely hinder efforts to encourage greater walking and bicycle use within Riverside County and limit use of mass transportation as well. The other areas of environmental impact associated with transportation and circulation would be substantially similar to those outlined for the project in Section 4.18.

g. Air Quality Impacts

In terms of air quality, this alternative would have fewer impacts due mainly to the projected decrease in VMT resulting from the fewer homes and jobs to be accommodated. As VMT reductions average a modest 1-4%, air quality would show similar improvements overall. This alternative's effects on criteria pollutant emissions, such as for ROG, NO_x and particulate (PM_{10}), would be greatest in urban areas where lower densities/intensities of allowed development would mean fewer pollutant sources being introduced. Further, despite its lower density and more diffuse development, the rural portions of Riverside County would contribute nearly a third of all expected emissions. Nevertheless, the emissions associated with this alternative would be both individually and cumulatively improved (though still significant) compared to either the existing General Plan or project-updated General Plan build out scenarios.

These impacts would be significant but not new. EIR No. 441, certified for the existing General Plan, found there would be several significant and unavoidable air quality impacts, even after the implementation of all feasible mitigation, for both short-term (mainly construction-related) air quality emissions and for long-term (operational) emissions (from both vehicular and stationary sources). For this alternative, such impacts would

similarly be significant for both the individual projects that implement the alternative and cumulatively, as indicated in Table 6.4-L.

h. Greenhouse Gas Impacts

For reasons similar to those for criteria pollutants, greenhouse gas emissions would also be lower under this alternative due to the reduced densities and intensities accommodated. The greater emphasis on low density housing, which tends to feature both larger lots and larger homes, would tend to increase energy use (both electricity and natural gas). However, this increase is ultimately offset by the overall decrease in homes under this alternative. With Riverside County CAP implementation, it is expected that GHG reductions would occur similar to those forecast for the updated General Plan. Most importantly, the lower VMT associated with this alternative means that mobile source (vehicular) GHG emissions also drop significantly. Overall, this alternative would be both consistent with the proposed Riverside County CAP and aid in achieving County of Riverside targets under AB 32; no GHG impacts would be significant.

i. Energy Impacts

As noted above, the energy savings associated with the fewer number of homes under this alternative are offset by the larger home types commonly built in rural and wildland areas. Nevertheless, in total, demand for electricity and natural gas would be very similar to that forecast for build out of the updated General Plan pursuant to GPA No. 960, though roughly 1-4% lower. For these reasons, this alternative is projected to have cumulatively substantial effects on both electricity and natural gas demands, as indicated in Table 6.4-L.

j. Noise Impacts

Because ambient noise levels, particularly in urban and suburban areas, are generated largely by vehicles, as traffic volumes increase, so do ambient noise levels. Thus, from existing (baseline) conditions to build out, traffic levels will increase, as will noise levels, for any of the General Plan build out scenarios or alternatives. As noted above, CalEEMod simulations indicate overall VMTs at build out for this alternative would be lower than those predicted for build out of either the existing General Plan or the project-updated General Plan. As a result, this means this alternative would have fewer noise impacts than these General Plans at build out in terms of permanent increases in ambient noise levels as well as noise exposures in excess of standards. Such reductions would be minor (1-4%) overall, however, and not uniformly spread throughout Riverside County (since noise impacts are location and distance dependent). For these reasons, overall noise impacts associated with this alternative are forecast to be substantially similar to those for the proposed project; both individually and cumulatively significant for all but two impacts, as indicated in Table 6.4-L.

k. Public Facilities, Parks and Recreation Impacts

As with other population-based effects, the slight (1-4%) decrease in population that would result under this alternative would result in slightly lower impacts to parks and recreational facilities and other public facilities (including schools, libraries, landfills, medical facilities, government facilities, etc.) Among other things, this would also slightly decrease the effects of use (e.g., wear-and-tear) on existing parks, recreational and other public facilities, as well as decrease or slightly slow the need for additional facilities to serve the growing populace. These decreases would also serve to ensure that incremental impacts associated with public services, parks and recreation are not cumulatively significant under this alternative. The sole exception to these decreases, as discussed above, is in impacts to fire protection. Because of the increased emphasis on residential development in rural, wildlands and interface areas, this alternative would have greater impacts on the need for fire protection

services. In total, as shown in Table 6.4-L, the overall pattern of significance for impacts to public facilities would be the same as that forecast for build out of the General Plan as updated pursuant to the project.

l. Water Impacts

Under this alternative, the net reduction in residential, commercial and industrial uses, though slight, would technically result in a slightly lower increase in water demand at build out as compared to the other two General Plan build out scenarios. These decreases would be seen in both the amount of potable water needed for domestic use, as well as correspondingly in the amount of wastewater (sewage) generated needing sanitary sewer disposal, wastewater treatment or subsurface (septic system) disposal.

The decreased urban densities/intensities under this alternative would also mean that impacts to water delivery and wastewater treatment infrastructure would be lower for the utilities serving these urban areas. The increased emphasis on diffuse, rural development, however, would result in more homes being built in areas outside of existing water or sewer districts. These homes would rely on privately pumped groundwater, resulting in increased impacts on the individual groundwater basins serving these areas. Similarly, new homes in much of the interface and wildland portions of unincorporated Riverside County would also rely on individual septic systems for disposal of sewage. Though of minimal effects when sited, installed and operated correctly, increasing the amount of subsurface sewage could also result in increased water quality impacts to watersheds, groundwater and related hydrology. Thus, in Table 6.4-L, impacts to water quality (Impact 4.19.C) and associated with septic systems (Impact 4.12.H) are indicated as increasing to reflect the rural situation, as well as decreasing because of the urban reductions.

In total, the decreased development allowed under this alternative means that net water and sewer demands would be lower. Yet, since decreases are only slight (1-4%), the overall pattern of water resource impacts for this alternative would be substantially the same as those resulting from build out of the project-updated General Plan. Thus, as shown in Table 6.4-L, this alternative would result in individually and cumulatively significant impacts to potable and groundwater water supplies, as well as cumulatively substantial changes in existing drainage patterns leading to erosion or siltation, runoff potentially exceeding existing stormwater drainage systems and triggering the need for new or expanded stormwater drainage facilities.

m. Significant Cumulative Impacts

In general, most of the impacts found cumulatively significant for the proposed project are substantially similar to those that would occur for this alternative. However, a few exceptions exist. First, with its reduced urban development potential, this alternative would minimize the effects of urbanizing growth pressures on population growth. It would also minimize cumulatively significant impacts to existing parks and recreational facilities. In all other areas, cumulatively impacts associated with this alternative would be substantially similar to those forecast for build out of the General Plan as updated pursuant to GPA No. 960.

n. Growth Inducement

As clearly outlined above, with its slightly smaller development potential and footprint, the Reduced Rural Villages Alternative would accommodate a slightly smaller resident population and workforce, with an attendant reduction in the growth-inducing effects. As such, this alternative's overall growth-inducing effects, both economic and population-related, would be slightly lower than the project's within unincorporated Riverside County. The reduced population growth expected would also slightly reduce the overall potential for strain on

community services and facilities, as compared to build out of either the existing General Plan or the amended plan as proposed by GPA No. 960.

In two areas, however, this alternative's impacts would be greater: First, rather than removing obstacles to population growth, by limiting the potential for urbanization in key rural areas, this alternative increased these obstacles. And, as a result, this limit would increase pressure on rural areas to develop to provide the necessary housing stock demanded in Riverside County. This pressure would also increase growth in non-county jurisdictions; see discussion under impacts to cities, below. Thus, the result of this project would be encroachment into the more isolated and remote portions of Riverside County that would have otherwise seen limited development pressure. With increased development in such areas there would be an attendant increase in the potential for other activities leading to significant environmental effects, for example, increased wildfire risks, increased pet predation, human disturbance, increases in light and sound, and other wildland-interface fringe effects. However, since the build out of the General Plan pursuant to the project would also allow increased development in interface and wildland areas (as compared to the existing General Plan), this alternative's impacts, while significant, are not considered new.

o. Impacts to Cities

The proposed alternative is derived from build out of the existing Riverside County General Plan, with modifications, thus impacts to cities were not included in Table 6.4-L. Rather, it was assumed that growth within the cities would occur in accordance with each city's general plan, as required by state law. See Table 6.4-K for RCCDR estimated build out results for incorporated Riverside County.

Though not addressed separately, the significant effects of this alternative on the cities within and adjacent to unincorporated Riverside County would be limited principally to cumulative effects caused by the incremental contributions arising from development in Riverside County. These significant cumulative effects would particularly occur in areas where additional future county development causes an impact to exceed a threshold or standard of acceptability. Examples include where development in unincorporated county areas borders cities or causes traffic, noise or other effects that carried over a municipal boundary.

Unique to this alternative, the reduced urban development potential allowed would have a ripple effect within adjacent cities and counties. Since this alternative would be less able to meet demand for smaller units, particularly affordable housing for low income families and small, multiple-family homes, such as townhomes, condominiums and apartments, development pressures for such housing stock would increase in the cities and adjacent counties. These increases would contribute to additional indirect growth for supporting retail, commercial and other services within the cities, as well as increase the cumulative effects of demand on existing and future infrastructure, including water and sewer, parks and recreational facilities, schools, hospitals, roads, etc.

In total, significant cumulative effects to cities resulting from this alternative would include:

- Air quality effects where emissions occurring within Riverside County would affect air pollutant levels within cities, including for short-term (construction) and long-term (operational) emissions, particularly traffic-related emissions. Exposure of sensitive receptors within cities to air pollutants generated within Riverside County and cumulatively significant air quality impacts could also occur.

- Noise level increases within Riverside County could affect levels within cities, including for construction (short-term) and operational (long-term) emissions. In particular, traffic-related noise increases could result in cities as a result of changes in Riverside County traffic patterns and/or increased trips from commuters added to cities.

- Increased residential development in the cities could also contribute to significant traffic increases in cities where city and county circulation networks interface. Also, when a city or county roadway becomes less able to accommodate traffic, drivers seeking alternate routes may end up traveling through cities on surface streets. Lastly, development of land uses that attract drivers, including additional housing in cities, could increase trips on city roads. All of these increases could also increase the need for road maintenance on city roads.

- By increasing pressure for urban growth in cities under this alternative, there would also be increases in the number of visitors to public facilities within adjacent cities, e.g., libraries, parks, post offices, hospitals, etc. Such increases are not expected to be cumulatively considerable, however.

- As discussed above, insufficient urban development opportunities within unincorporated Riverside County areas could lead to increased urban development, particularly of higher-density housing, within cities, inducing cumulatively significant levels of direct and indirect population growth accordingly.

- Increased urban development in cities and adjacent counties could also have effects on the viewsheds and visual character of the affected areas, leading to cumulative impacts to aesthetic and visual resources within these jurisdictions.

- Increased growth pressures in cities and adjacent counties could also result in incremental contributions to cumulative agricultural impacts in these jurisdictions due to conversion of farmlands, encroachment on existing agricultural uses and conflicts between urbanization and existing agricultural activities.

- In locations where cities rely upon the same groundwater basin(s) that also serve an unincorporated area, additional urban development pressures in cities could lead to significant demands on the city's existing water supply. Where a groundwater basin is already in overdraft, adjudicated or where future demands would exceed the recharge capability of the basin, both the city and county areas relying on the basin would be significantly affected. This may particularly be significant where additional added urban demands would be met solely by groundwater from basins shared by city water providers.

- Where cities and unincorporated areas are both served by the same water district, additional development within cities could increase demand on the existing imported water supply. Since such supplies are finite and subject to factors beyond the control of the water district (e.g., rainfall amounts, state mandates, court-ordered diversions for fish species in the Sacramento/San Joaquin Delta, etc.), increases exceeding the districts' ability to meet the need would result in significant impacts.

- Lastly, as described above, the reduced urban development potential allowed fosters direct and indirect population growth, economic growth and housing demand in adjacent cities and counties. This growth within the cities and adjacent counties could contribute incrementally to population increases that could strain community services and facilities resulting in direct or indirect impacts to services and facilities provided by these jurisdictions.

3. Achievement of Project Objectives

In terms of the project's stated objectives, this alternative does adequately meet 60% of them: It would provide LUD updates and thus addresses the updated land use objective. It would also provide updated technical data, by definition, and would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons.

Thus, it is would meet some of the objective for meeting new needs. It would not, however, provide future planning necessary to address and accommodate the new needs related to urbanizing growth pressures on rural areas located near urban fringes. As such, it also would not accommodate further progress within Riverside County. Rather than providing plans to handle future demand for urbanizing uses within unincorporated Riverside County, this alternative actually limits further progress in terms of future development necessary to meet population growth forecast for Riverside County. Similarly, it also would not "further the County Vision," as its limits on urbanization in growing rural-fringe areas would limit, rather than enhancing or extending, continued progress within Riverside County.

4. Conclusions

Overall, as indicated in Table 6.4-L, the Reduced Rural Villages Alternative would likely cause slightly fewer significant environmental impacts within the unincorporated portions of Riverside County as a result of the small (1-4%) decrease in the number of houses, people, jobs and economic uses proposed. These slight reductions mean that impacts associated with this alternative would be largely the same or substantially similar to those forecast for build out of the General Plan as amended pursuant to the project, GPA No. 960. Particularly as a result of fewer vehicle miles traveled in Riverside County, impacts associated with traffic, noise and air quality would be lower under this alternative. A lower population at build out would also mean that risks to people, such as from seismic, flood, air travel and hazardous material use, for example, would be slightly lower. Impacts resulting from the presence of people, such as demand for parks, schools, landfills, hospitals and other public services, as well as for water, wastewater treatment, electricity, roads and other infrastructure, would also be correspondingly reduced. In most cases, however, incremental impacts in these areas would still be cumulatively substantial. Lastly, this alternative does not adequately address significant adverse effects to agriculture because the reduced potential for urbanizing development in key locations would contribute to an increase in development within areas that would otherwise remain rural and undeveloped, particularly within wildland and interface portions of Riverside County. Nor does it provide adequate plans for handling future urbanizing growth pressures and, as a result, would tend to lead to sprawling growth within the rural portions of Riverside County, particularly within the Rural Community Foundation.

In terms of environmental impacts, this alternative was found to "substantially lessen" traffic impacts because of the reduced urban areas allowed. It was also found to successfully address, though not "substantially lessen," impacts in six areas of significant effects associated with the proposed project. It was not found to cause any new significant impacts or substantially increase any already expected to be significant pursuant to project analyses. Although a slight improvement over the project, because of the reduced urban development accommodated under this alternative, it would induce significant growth within cities and adjacent counties as a result of the unmet growth pressures within the unincorporated areas.

Although a slight improvement over the project, because of the reduced urban development accommodated under this alternative, it would induce significant growth within cities and adjacent counties. Nevertheless, notwithstanding these impacts outside unincorporated Riverside County, this alternative does reduce, either slightly or substantially, a majority of the significant adverse impacts associated with the project (i.e., build out of the General Plan pursuant to GPA No. 960). For this reason, this alternative is considered the environmentally superior alternative. However, because of the limitations on future urbanization inherent in this alternative, it only meets two of five of the project objectives (40%). For this reason, despite being environmentally favorable, this alternative would not be an acceptable means for achieving the stated project objectives. Accordingly, the Reduced Rural Villages Alternative is not deemed the preferred alternative.

6.5 Environmentally Superior Alternative and Preferred Alternative

As noted at the beginning of Section 6.0, the purpose of this exercise is to determine if there are feasible alternatives that would "substantially lessen any significant effects that the project would have on the environment" (CCR Section 15021(a)(20)). Specifically, as directed under the State CEQA Guidelines, e.g., Section 15126.6(c), the alternatives analysis is intended to allow the EIR to identify the "environmentally superior alternative" and explain why alternatives other than the proposed project were rejected.

The matrix presented under Table 6.0-A at the beginning of Section 6.0 provides a summary of each alternative's major attributes relative to project objectives and their adequacy in addressing the significant environmental effects associated with the project. An analysis of each alternative selected for inclusion then follows and conclusions are made as to the relative suitability of each in terms of both meeting project objectives and reducing significant environmental effects. The environmentally superior alternative is identified. In addition, the ultimate suitability of the alternatives in terms of feasibility in meeting stated project objectives is summarized and the preferred alternative selected.

A. Environmentally Superior Alternative

Build out of the General Plan, as it would be if updated pursuant to the proposed project, GPA No. 960, would have significant, unavoidable adverse impacts on: agriculture, air quality, noise, transportation and traffic, water supplies and growth inducement. There would also be a variety of other cumulatively considerable effects.

As indicated in Table 6.0-A, only one of the alternatives (Reduced Rural Villages Alternative) was found to address nearly all of the areas of significant project impacts and not result in any new (substantially greater) environmental impacts within unincorporated Riverside County. All of the other alternatives have substantial new and/or greater impacts, though most also had areas of substantially fewer impacts as well. The end results of each alternative's analysis are summarized below.

No Build/No Growth Alternative

This alternative, one of the "no project" scenarios addressed by CEQA for comparison purposes, would entail no growth occurring at all within unincorporated Riverside County (i.e., the County of Riverside would not approve any additional development applications). The only growth occurring in Riverside County would be within its cities, which are assumed to build out according to their General Plans. Although the No Build/No Growth Alternative does include some artificial assumptions in order to "preserve the physical environment," it is nonetheless included among the alternatives considered because of its utility in providing a clear examination of the effects of future growth in the cities within Riverside County, as well as the surrounding cities and counties. Though an admittedly extreme example, it specifically serves to paint a clear picture of how these areas' growth will themselves affect the unincorporated portions of Riverside County, even in the absence of any other unincorporated growth. Under this alternative, the environmental baseline of Riverside County would be preserved in many areas, except where adversely affected by the growing demands of the cities within Riverside County (e.g., water use, traffic generation, land annexations, etc.).

As noted in Table 6.0-A, this alternative would substantially lessen many of the significant environmental impacts associated with the project-updated General Plan. However, it would also result in significant impacts in relation to transportation system effectiveness (e.g., provide inadequate Levels of Service for roadways) and water

resources (particularly due to increased demand on groundwater basins). It would also generate two new significant impacts within Riverside County in relation to inconsistencies with greenhouse gas reduction plans (particularly AB 32) and energy efficiency plans (particularly Title 24). Lastly, it would also escalate growth pressures within adjacent cities and counties; some of which could cause significant new (or worsened) impacts in these jurisdictions, for example increased strain on existing community services and facilities. See Section 6.4.A for full details.

Taken together, the substantial reduction in significant impacts associated with this alternative would make it appear to be the environmentally superior alternative addressed under CEQA. However, Section 15126.6(e)(2) of the State CEQA Guidelines notes, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

No Project /Status Quo Alternative

As noted above, CEQA specifies analysis of a no-project alternative that would be "reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with the available infrastructure and community services." (See State CEQA Guidelines, Section 15126.6(e)). Accordingly, the No Project/Status Quo Alternative examines the environmental effects associated with abandoning the proposed project, GPA No. 960, and "doing nothing," that is, allowing unincorporated Riverside County to continue to develop as planned under the existing Riverside County General Plan. Again, as with the first alternative, analysis of this alternative provides a look at the environmental cost of maintaining the status quo. As such, this alternative serves as a lens for highlighting the environmental implications for approving (or denying) the proposed project.

As noted in Table 6.0-A, this alternative would not substantially lessen any of the significant environmental impacts associated with the project-updated General Plan, mainly because this alternative, which represents build out of the existing General Plan, would result in more people, houses, jobs, economic land uses, vehicle miles travel and related effects. Specifically, General Plan build out with implementation of project (GPA No. 960) changes would result in a reduction of roughly 2-6% fewer people, homes, jobs and economic land uses as compared to the existing General Plan. Accordingly, analysis predicts significant impacts largely in line with those forecast for the project-updated General Plan, except with a number of new significant impacts, including some substantially greater than those of the project. These new substantial impacts include: changes to existing visual character, increased greenhouse gas emissions, effects to biological resources outside of areas under an adopted MSHCP and inefficient use of energy. See Section 6.4.B for full details.

Because this alternative would have substantial environment effects in several key areas, including four new significant impacts, it is not deemed the environmentally superior alternative.

Agricultural Emphasis Alternative

Between 2000 and 2006, Riverside County loss roughly 30% of its existing agricultural lands to conversions made in the face of increasing development pressure. Although agriculture is Riverside County's largest industry in terms of dollars, agricultural decline continues as urban uses encroach upon agriculture operations and economic pressures (including the price of water supplies) make conditions ever more tenuous for Riverside County's farmers and ranchers. Not surprisingly, one of the significant impacts of build out of either the existing or updated General Plans is loss of agricultural lands to non-agricultural uses and encroachment of non-agricultural uses into agricultural areas. This alternative is proposed as a means for addressing (lessening) this significant impact by preserving existing farmlands and increasing overall agricultural uses within unincorporated Riverside

County by roughly 250,000 acres. In addition, it also addresses cumulatively significant wildfire hazards by shifting roughly 25,000 future homes in remote, wildfire-prone rural areas to more accessible urban/suburban regions.

Overall, as indicated in Table 6.4-E, the Agricultural Emphasis Alternative would cause slightly more significant environmental impacts in the growing urban and suburban portions of unincorporated Riverside County, while substantially reducing many (but not all) impacts associated with spatial effects in the rural portions of Riverside County. In several key areas, this alternative would avoid, minimize or reduce impacts found significant under the proposed project to less-than-significant levels. These include: conversion of state-designated farmlands and encroachment or conflicts with existing agricultural uses; exposure of people or structures to wildland fire risks; and, facilitation of environmental effects due to the encroachment of development into isolated or remote areas.

With its greatly reduced rural development footprint, it would also avoid cumulatively significant cumulative impacts to archeological and paleontological resources, hazards (particularly in interface and wildland areas), demand for fire protection services and effects on water resources and groundwater basins. The smaller development footprint means cumulative effects on existing hydrology and stormwater drainage systems would also be less than significant. This alternative would also avoid significant growth-inducing effects resulting from facilitating encroachment into isolated or remote areas. However, because this alternative restricts agricultural conversion, it would hinder (reduce) significant growth-inducing effects by creating (rather than removing) obstacles to population growth within Riverside County.

Lastly, this alternative would also result in several substantially greater (worse) environmental impacts, including: greatly increased demand for water, both imported and local (groundwater); increased demand for energy (electricity and natural gas) due mainly to increased agricultural uses (particularly water pumping) and related economic uses (dairies, commercial, industrial, etc.); and, increased energy use and increased off-road equipment and vehicle operations associated with agricultural uses, contributing to substantial cumulative greenhouse gas emissions. And, lastly, environmental impacts associated with the need for new or expanded water infrastructure. Except for the greenhouse gas emissions, however, none of these cumulatively significant impacts are new as compared to those of the project-updated General Plan.

Taken together, this alternative adequately addresses four of the seven areas of significant effects associated with the proposed project, including having substantial improvements over the project in terms of both agricultural impacts and on-road vehicle traffic levels. It would also, however, be associated with three areas of more severe, environmental impacts, including increased water demand and increased cumulative impacts in several areas. Although an improvement over the project in some ways, this alternative would not be the environmentally superior alternative due to the severe limitations and significant environmental impacts that would result in conjunction with the greatly increased water demand under this alternative. For these reasons, this alternative was not deemed the environmentally superior alternative.

Added Community Centers Alternative

Sprawling patterns of suburban growth in car-centric Southern California tend to result in increased traffic, noise and air pollution as vehicle travel increases within the far-flung new communities. Even with the advanced planning called for under the existing or project-updated County General Plans, impacts due to traffic and circulation, as well as attendant air quality and noise impacts, will be significant and unavoidable. This alternative is proposed as a means for addressing (lessening) this significant impact through the incorporation of an increased number of Community Centers. As defined under the existing General Plan, community centers are purposefully designed to provide land uses and activities designed in an "integrated fashion to create a dynamic urban environment that acts as the center of activity for the surrounding area." To accomplish this, community centers

are designed to accommodate "a variety of residential densities, non-residential intensities and public spaces... integrated in a manner that promotes pedestrian activity and minimizes the dominance of the automobile."

Rather than increasing the overall build out of unincorporated areas, this alternative would represent (as compared to the existing and proposed GPA No. 960) a more concentrated pattern of development intensity. To accommodate these increases, development intensity within reserve areas for the two MSHCPs would be redistributed into community centers throughout Riverside County. Thus, under this alternative the overall size of the development footprint within unincorporated Riverside County would decrease, but the overall residential density would nearly double because of increases in lands designated as community center (CC) or mixed use planning area (MUPA) through overlays.

In total, roughly 1,200 acres of additional CC/MUPA were assumed for western Riverside County along the I-15 and Interstate 215 in the Perris Valley, in particular. In addition, 2,400 acres of CC/MUPA were placed out in eastern Riverside County, which has traditionally seen lower growth overall than to the west due to its more remote location relative to the job centers of Greater Los Angeles and Orange County. In total, roughly 21,600 new high- to very high-density dwelling units plus 10,500 medium-high to high-density units would be added throughout Riverside County, accommodating an increase of 12,600 people. With an equal amount of retail-commercial and associated commercial services added as well, over 90,000 additional jobs would be created.

Overall, as indicated in Table 6.4-H, the Added Community Centers Alternative would enable increased growth in urban cores while lessening some the significant effects associated with the proposed project. It addresses nearly all of the significant environmental impacts identified for the project and greatly reduces a number of effects, particularly spatial impacts, as a result of the reduced development footprint.

Some, but not all, of the project's significant cumulative impacts would be lessened under this alternative, however these effects are offset by the localized increases that would result within the urbanized Community Centers proposed. Specifically, due to the increase in housing, population, jobs, traffic and associated economic activity, this alternative would result in substantial individual and/or cumulative impacts in a number of areas, including greenhouse gas emissions and traffic congestion. Also, because of the disproportionate effects of growth in urban areas, this alternative would also have substantially greater impacts on existing parks and recreational facilities and cause growth effects triggering the need for additional facilities. It would also have growth-inducing effects on Riverside County, its cities and the surrounding communities, cities and counties. In all other areas, significant impacts either individually or cumulatively would be generally similar to those associated with build out of the General Plan pursuant to the project, GPA No. 960.

Taken together, this alternative addresses six of the seven areas of significant effects associated with the proposed project. However, it only substantially lessens or avoids significant impacts for one of the seven (agriculture); for air quality, noise and growth inducement, this alternative's impacts are generally similar to those of the project. Although an improvement in many ways over the project, because of the absolute limiting effect of the finite water supply availability, this alternative will cause an increase in greenhouse gas emissions and traffic congestion. For these reasons, this alternative was not deemed the environmentally superior alternative.

Green Economy Alternative

In the past decade, modern society has become increasingly focused on the need to use the planet's resources wisely and efficiently. In particular, in conjunction with AB 32, California's Global Warming Solutions Act of 2006, the State of California has initiated a number of plans to reduce greenhouse gas emissions, including an initiative directing California to be obtaining a third of its electricity through alternative green methods by 2020. This legislative mandate has helped fuel the impetus for the growing green energy industry in the state. With its

expansive open desert noted for 360 days of sunshine a year (in Blythe), bracketed by the famously windy San Gorgonio Pass to the north and the geothermal hot springs around the Salton Sea to the south, Riverside County offers unparalleled opportunities for green alternative energy generation.

Accordingly, this alternative aims to capitalize on Riverside County's renewable energy opportunities for wind, solar and geothermal by creating green economy jobs and improving the jobs-housing balance within Riverside County. It would accomplish this by proposing density transfers in which half the remaining rural residential (OS-RUR) lands are reallocated to Public Facilities (PF) to accommodate green energy generating land uses, such as commercial wind and solar energy generation, as well as geothermal or biomass, as opportunities arise. A portion (10%) of the remainder would also be allocated to additional light industrial (LI) land uses to provide additional related and ancillary services, manufacturing and other complimentary uses. Lastly, another 50% would be shifted to open space-conservation (OS-C) to provide buffers around energy uses and also to reduce the number of residences in remote, fire-prone areas (i.e., OS-RUR designated properties in interface/wildlands).

The result of this shift would greatly increase the jobs available within Riverside County, ideally allowing more residents to work in closer proximity to their homes, rather than commute to distant cities or counties. This would improve traffic on the region's freeways and main arteries, as well as greatly reducing the air pollution and traffic noise generated in our communities. In addition to reducing energy generated from non-petroleum sources, this alternative would also aid in reducing greenhouse gas emissions by reducing commuter travel. (Vehicle trips are the number one source of greenhouse gas emissions in California.) Thus, the Green Economy Alternative addresses a number of significant, unavoidable impacts associated with the project, in particular those related to air pollution, noise, traffic and energy consumption in unincorporated Riverside County.

Overall, as indicated in Table 6.4-J, the Green Economy Alternative seeks to provide the planning needed to help California, and the country, transition from the existing, petroleum-based economy to a new, cleaner green economy based on alternative energy generation and related industries. Despite the decreased reliance on fossil fuels, however, the analysis herein finds that this alternative would have environmental impacts of similar severity to those forecast for build out of the General Plan as updated per GPA No. 960. In certain areas, in fact, as summarized in Table 6.0-A, this alternative would have substantially greater significant impacts driven mostly by the large increase in jobs created in Riverside County.

While it would reduce certain regional impacts (such as greenhouse gases and, possibly, traffic congestion), it would do so at the expense of substantial increases in cumulative environmental impacts within Riverside County itself. In particular, key areas adversely affected are those associated with the increased number of commuters heading into Riverside County for work: increased traffic and congestion (due to increased vehicle miles traveled within the county), higher ambient noise levels (increased due to roadway traffic noise), increased localized and regional air pollution and greenhouse gas emissions. This alternative would also result in specific new significant impacts to viewsheds and aesthetics (including scenic highways) and to roadways and intersections in which the additional traffic volumes cause LOS ranges to be exceeded above and beyond those already identified by either the existing General Plan or for this proposed project (i.e., in section 4.18). Lastly, even though not new significant impacts, water-related impacts to domestic and groundwater supplies would also be substantially greater under this alternative.

Taken together, this alternative only addresses four of the seven areas of significant effects associated with the proposed project. Although an improvement in many ways over the project, because of the increase in jobs and the improved jobs-to-housing balance, this alternative will cause substantially greater adverse effects associated with this greenhouse gases, traffic and aesthetics. Even though this alternative meets all of the project objectives, it does so at the expense of greater environmental effects. For all of these reasons, this alternative would not be deemed the environmentally superior alternative.

Reduced Rural Villages Alternative

This alternative was conceived to address the significant effects of continued urbanization by limiting the plans designed to accommodate it in the General Plan. Accordingly, this alternative proposes to address environmental effects stemming from population growth by limiting the planned RRVOs, and other overlays and policy areas, that would be incorporated into the General Plan as a result of GPA No. 960. Specifically, this alternative proposes to eliminate the two RVOs proposed under this project (Good Hope and Meadowbrook), leaving the areas with only their existing underlying rural LUDs. To counter urbanizing effects beyond the RVOSAs, this proposal also includes deleting other proposed urbanization changes from GPA No. 960, such as the Northeast Business Park Overlay, most of the Lakeland Village (i.e., Lake Elsinore Environs Policy Area) changes and also existing and proposed policies for the Anza and Aguanga areas in southern Riverside County. In addition, areas of potential future urbanization or intensification in association with the Coachella Valley, specifically Chiriaco Summit and Vista Santa Rosa, would also be eliminated under this alternative.

Overall, as indicated in Table 6.4-L, the Reduced Rural Villages Alternative would likely cause slightly fewer significant environmental impacts within the unincorporated portions of Riverside County as a result of the small (1-4%) decrease in the number of houses, people, jobs and economic uses proposed. These slight reductions mean that impacts associated with this alternative would be largely the same or substantially similar to those forecast for build out of the General Plan as amended pursuant to the project, GPA No. 960.

Particularly as a result of fewer vehicle miles traveled in Riverside County, impacts associated with traffic, noise and air quality would be lower under this alternative. A lower population at build out would also mean that risks to people, such as from seismic, flood, air travel and hazardous material use, for example, would be slightly lower. Impacts resulting from the presence of people, such as demand for parks, schools, landfills, hospitals and other public services, as well as for water, wastewater treatment, electricity, roads and other infrastructure, would also be correspondingly reduced. In most cases, however, incremental impacts in these areas would still be cumulatively substantial.

Lastly, this alternative does not adequately address significant adverse effects to agriculture because the reduced potential for urbanizing development in key locations would contribute to an increase in development within areas that would otherwise remain rural and undeveloped, particularly within wildland and interface portions of Riverside County. Nor does it provide adequate plans for handling future urbanizing growth pressures and, as a result, would tend to lead to sprawling growth within the rural portions of Riverside County, particularly within the Rural Community Foundation.

In terms of environmental impacts, this alternative was found to substantially lessen traffic impacts because of the reduced urban areas allowed. It was also found to successfully address, though not substantially lessen, impacts in six areas of significant effects associated with the proposed project. It was not found to cause any new significant impacts or substantially increase any already expected to be significant pursuant to project analyses. Although a slight improvement over the project, because of the reduced urban development accommodated under this alternative, it would induce significant growth within cities and adjacent counties as a result of the unmet growth pressures within the unincorporated areas.

Nevertheless, notwithstanding these impacts outside unincorporated Riverside County, this alternative does reduce, either slightly or substantially, a majority of the significant adverse impacts associated with the project (i.e., build out of the General Plan pursuant to GPA No. 960). For this reason, this alternative is considered the environmentally superior alternative.

B. Preferred Alternative

Although the environmentally superior alternative was identified above, the ultimate suitability of the alternatives must still be weighed against their ability to successfully achieve the stated project objectives. While CEQA notes that not all of the objectives need be attained, per CCR Section 15126.6(a)), the alternative selected must still "feasibly attain most of the basic objectives of the project" while also avoiding or substantially lessening the significant effects of the project. Accordingly, each of the alternatives was examined relative to these standards and the stated project objectives to determine whether any among them is the preferred alternative (instead of the proposed project, GPA No. 960) for achieving build out of the General Plan. These conclusions are summarized below.

No Build/No Growth Alternative

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for further progress within Riverside County since it posits no growth and no development. Nor would it address new needs, since it pushes all new growth into the cities where Riverside County's General Plan does not apply. It would provide updated technical data, simply by definition, but would not provide any updated land uses within Riverside County (since no further development would be permitted). And, most particularly, it does not further the Riverside County Vision in any way since it does not permit or promote any continued progress within Riverside County. Thus, in total, this alternative meets only one of five of the objectives of the project and it, therefore, is not considered an acceptable means for achieving the stated project objectives. For all of these reasons, despite being found environmentally superior to the proposed project, the No Build/No Growth Alternative is not deemed the preferred alternative.

No Project /Status Quo Alternative

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. It does not address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning). Thus, this alternative does not satisfy the address new needs objective. It would provide updated technical data, simply by definition. Lastly, it does not further the Riverside County Vision in any way since it does not enhance or extend the continued progress within Riverside County. Since this alternative meets only one of five of the objectives of the project, it is not considered an acceptable means for achieving the stated project objectives. For all of these reasons, the No Project/Status Quo Alternative is not deemed the preferred alternative.

Agricultural Emphasis Alternative

In terms of the project's stated objectives, this alternative does not satisfy several: It would not provide a suitable plan for further progress within Riverside County since it does not update the study areas identified in 2003 for future planning specifications. It does not include any LUD updates and thus does not address the updated land use objective. It would provide updated technical data, simply by definition. It also would address the updated regulatory environment that future development within Riverside County and would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons. It would not, however, fully comply with AB 32 due to the substantial increase in greenhouse gas emissions associated with this alternative. Nevertheless, this alternative could be said to adequately meet the "address new needs" objective. It does not, however, further the

Riverside County Vision in regards to growth since the restrictions on agricultural conversion would significantly hinder (not enhance or extend) continued progress within Riverside County. Overall, this alternative only meets two of five of the objectives of the project, thus it is not an acceptable means for achieving the stated project objectives. For all of these reasons, the Agricultural Emphasis Alternative is not deemed the preferred alternative.

Added Community Centers Alternative

In terms of the project's stated objectives, this alternative would satisfy all but one. It would provide a suitable plan for further progress within Riverside County, since it provides for additional urban development in Riverside County. It would provide updated technical data, simply by definition. It also would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons, even though it would require additional CAP measures to reduce to the additional greenhouse gas emissions associated with this alternative. Nevertheless, it could still be said to adequately meet the "address new needs" objective. It also may further the Riverside County Vision by allowing higher growth in certain urban cores, extending or enhancing "continued progress" within Riverside County. The only objective not met is that it does not include any LUD updates, and thus does not address the updated land use objective. In total, although this alternative meets four of the five objectives of the project, it does so while increasing growth and localized urban impacts beyond that of the proposed project or existing General Plan. Thus, this alternative is not deemed the favored means for achieving the stated project objectives. For all of these reasons, the Added Community Centers Alternative is not deemed the preferred alternative.

Green Economy Alternative

In terms of the project's stated objectives, this alternative appears to satisfy all of them. It provides a suitable plan for further progress within Riverside County, particularly in terms of increasing jobs availability. Even though it does not update the RVO study areas identified in 2003 for future planning specifications, it provides an alternate plan for future development and would also provide LUD updates, thus it does addresses the updated land use objective. It would provide updated technical data, simply by definition. And, despite increased greenhouse gas emissions, it would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning). Thus, it is would adequately meet the address new needs objective. Lastly, it would further the Riverside County Vision, since it proposes to greatly increase jobs in the region, helping to balance a region that traditionally has more homes than jobs, while preserving open space and the quality of life for Riverside County residents. This new economy would serve to enhance and extend the continued progress within Riverside County. In total, although this alternative meets all of the five objectives of the project, it does so while increasing growth and localized urban impacts beyond that of the proposed project or existing General Plan. For all of these reasons, the Green Economy Alternative is not deemed the preferred alternative.

Reduced Rural Villages Alternative

In terms of the project's stated objectives, this alternative does adequately meet 60% of them: It would provide LUD updates and thus addresses the updated land use objective. It would also provide updated technical data, by definition, and would address the updated regulatory environment that future development within Riverside County would need to comply with (e.g., AB 32 and greenhouse gas reduction planning) for similar reasons. Thus, it is would meet some of the objective for meeting new needs. It would not, however, provide future planning necessary to address and accommodate the new needs related to urbanizing growth pressures on rural

areas located near urban fringes. As such, it also would not accommodate further progress within Riverside County. Rather than providing plans to handle future demand for urbanizing uses within unincorporated Riverside County, this alternative actually limits further progress in terms of future development necessary to meet population growth forecast for the county. Similarly, it also would not further the Riverside County Vision, as its limits on urbanization in growing rural-fringe areas would limit, rather than enhance or extend, continued progress within Riverside County. However, because of the limitations on future urbanization inherent in this alternative, it only meets two of five of the project objectives (40%). For this reason, despite being environmentally superior, this alternative would not be an acceptable means for achieving the stated project objectives. For all of these reasons, the Reduced Rural Villages Alternative is not deemed the preferred alternative.

C. Conclusions

As the result of the data and analyses presented in Section 6.0, it was determined that two alternatives exist that would be environmentally superior to the proposed project in terms of providing a scenario for guiding ultimate build out of the Riverside County General Plan. One, however, was the No Build/No Growth Alternative, which met only a single project objective. The second environmentally superior alternative was the Reduced Rural Village Alternative. While not without significant adverse environmental impacts, this alternative addresses the widest gamut of project impacts with the fewest new significant impacts. It would not, however, meet more than two of the stated project objectives.

Thus, as a result of this alternatives analysis, it was determined that the proposed project, GPA No. 960, remained suitable as the preferred project. It would achieve all of the stated project objectives while minimizing, to the extent feasible, the significant, unavoidable environmental impacts. Further, certain beneficial aspects of the alternatives analyzed have been incorporated into the proposed project. Specifically, GPA No. 960 proposes to eliminate some of the Rural Village Study Areas in which future urbanization was found to be unsuitable, associated with too many adverse environmental effects and/or to be otherwise infeasible (for example, due to lack of water and infrastructure, topography, or seismic hazards). In this way, GPA No. 960 has incorporated impact-reducing aspects of the Reduced Rural Villages Alternative in order to ensure the most environmentally suitable project alternative goes forward for consideration by the decision-makers of Riverside County. For all of these reasons, the project, GPA No. 960, remains the preferred alternative for achieving build out of the Riverside County General Plan pursuant to the stated project objectives.

Section 7.0

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Section 8.0

Glossary and Acronyms

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8.1 Acronyms

A

AAQS	Ambient Air Quality Standard
AB	Assembly Bill
ABOP	Antifreeze, batteries, oil and (latex) paint
Ac	Acre *(1 ac = 43,560 sf)*
ACHP	Advisory Council on Historic Properties
ACOE	(US) Army Corps of Engineers
ADP	Area Drainage Plan
ADT	Average daily traffic
AEC	Anza Electric Cooperative
AEP	Association of Environmental Professionals
AEPC	Arizona Electronic Power Cooperative
af	Acre-feet *(1 af = 325,900 gallons)*
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ALUP	Airport Land Use Plan
ALUPH	Airport Land Use Planning Handbook
am	Ante meridiem *(i.e., morning)*
AP	Area Plan
A-P Act	Alquist-Priolo Earthquake Fault Zoning Act *(formerly the Alquist-Priolo Special Studies Zones Act)*
APS	Aboveground petroleum storage
A-P Zone	Alquist-Priolo Earthquake Fault Zone
AQ	Air quality
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
ARA	Aggregate Resource Area

B

BACT	Best available control technology
BAU	Business as usual
bcfd	Billion cubic feet per day *(1,000,000,000 cfd)*

BCP	Base Cleanup Plan
BCVRPD	Beaumont-Cherry Valley Recreation and Park District
BGS	Below ground surface
BMP	Best management practice
BNSF	Burlington Northern Santa Fe *(railroad line)*
BRAC	Base realignment and closure
BRT	Bus rapid transit

C

CAA	(Federal) Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalTrans	California Department of Transportation
CalEPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Protection
CAMA	California – Arizona Maneuver Area
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CAPTAC	Comprehensive Agriculture Preserve Technical Advisory Committee
CARB	California Air Resources Board
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CAS	Climate Change Adaption Strategy
CCAT	California Climate Action Team
CCR	California Code of Regulations
CCTP	Climate Change Technology Program
Cd	Cadmium
C&D	Construction and demolition
CDE	California Department of Education
CDF	California Department of Forestry and Fire Protection *(also goes by CalFire)*
CDFW	California Department of Fish and Wildlife (*formerly CDFG)*
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEDD	California Employment Development Department
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act *(also known as the Superfund Act)*
CESA	California Endangered Species Act
CETAP	Community Environmental and Transportation Acceptability Program
cf	Cubic feet
CF_4	Carbon tetrafluoride
CFIP	California Forest Improvement Plan
CFR	Code of Federal Regulations
CGC	California Government Code
CGS	California Geological Survey
CH_4	Methane
CHP	California Highway Patrol

CHPO	County Historic Preservation Officer
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CIC	County initiated change *(to the General Plan)*
CIP	Capital Improvement Program
CIWMB	California Integrated Waste Management Board
CIWMP	Riverside Countywide Integrated Waste Management Plan (existing)
CLOMR	Conditional Letter of Map Revision
CLOMR-F	Conditional Letter of Map Revision Based on Fill
CLUP	Comprehensive Land Use Plan
CMAGR	Chocolate Mountain Aerial Gunnery Range
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO_2e	Carbon dioxide equivalent
CO	Carbon monoxide
COI	Certificate of Inclusion
CPHI	California Point of Historic Interest
Cr	Chromium
CRHR	California Register of Historic Resources
CSA	County Service Area
CSD	Community Service District
CVC	California Vehicle Code
CV-MSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVWD	Coachella Valley Water District
CWA	Clean Water Act

D

dB	Decibel
dBA	A-weighted decibel
DCAP	Desert Center Area Plan
DHS	California Department of Health Services *(now known as the California Department of Public Health)*
DIF	Development impact fee
DOD	(US) Department of Defense
DOF	(US) Department of Finance
DOT	(US) Department of Transportation
DPA	Direct Protection Area
DRD	Desert Recreation District
DTSC	(California) Department of Toxic Substances Control
DU	Dwelling unit
DWR	(California) Department of Water Resources

E

EAP	Eastvale Area Plan
EBS	Environmental baseline survey
ECC	Emergency Command Center

ECS	Environmental Constraint Sheet
ECVAP	Eastern Coachella Valley Area Plan
EDA	Economic Development Agency
eGRID	Emissions and Generation Resource Integrated Database
EIA	Energy Information Administration
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELAP	Elsinore Area Plan
EMFAC	US-EPA's model and database for combustion emission factors
EMWD	Eastern Municipal Water District
EOC	Emergency Operations Center
EOP	Emergency Operation Plan
EPA	(US) Environmental Protection Agency
ESA	Endangered Species Act
EVRP	Evacuation and Response Plan

F

FAA	Federal Aviation Administration
FAR	Floor-to-area ratio
FAR	Federal Aviation Regulation
FCC	Family care center
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FFA	Federal facilities agreement
FHWA	Federal Highway Administration
FIRM	Federal Insurance Rate Map
FIS	Flood Insurance Study
FCWCD	Riverside County Flood Control and Water Conservation District *(Also referred to as "Flood" or "Flood Control" or "County Flood Control")*
FMMP	(California) Farmland Mapping and Monitoring Program
FRIF	Forest Resources Investment Fund
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FUDS	Formerly used defense site

G

g	Gravity *(meaning the unit of gravitational force or acceleration)*
g	Gram
GASB	Governmental Accounting Standard Board
GHG	Greenhouse gas
GIS	Geological Information System
GPA	General Plan Amendment
GPAC	General Plan Advisory Committee
GSA	General Services Administration
GWP	Global warming potential

H

HAP	Highgrove Area Plan
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbon
HHW	Household hazardous waste
HHWE	Household Hazardous Waste Element
HMTA	Hazardous Materials Transportation Act
HOT	High-occupancy toll
HOV	High occupancy vehicle
HPS	High pressure sodium *(type of lighting)*
HRS	Hazard Ranking System
HSC	Health and Safety Code
HUD	U.S. Department of Housing and Urban Development
HWCL	Hazardous Waste Control Law
HVAC	Heating, ventilation and air condition
HVWAP	Harvest Valley / Winchester Area Plan
HWCL	Hazardous Waste Control Law
Hz	Hertz *(unit of vibration and sound)*

I

I	Interstate
IA	Implementing Agreement
IEPR	Integrated Energy Policy Report
IID	Imperial Irrigation District
IPCC	Intergovernmental Panel on Climate Change
IRP	Installation Restoration Program
IS	Initial Study
IS/NOP	Initial Study/Notice of Preparation
ISO	Insurance Service Office
IWMA	Integrated Waste Management Act

J

JARPD	Jurupa Area Recreation and Park District
JP-8	Jet fuel
JURAP	Jurupa Area Plan

K

kg	Kilogram
ksf	Thousand square feet
kV	Kilovolt

L

L_{10}, L_{50}, L_{90}	Level at which noise threshold is exceeded *X*% of the time (10%, 50%, 90%)
LAFCO	Local Agency Formation Commission
LAX	Los Angeles International Airport
L_{dn}	Day-night average equivalent *(measure of noise levels)*
LEA	Local Enforcement Agency
LEED-EB	LEED Existing Building
L_{eq}	Continuous sound level-equivalent
LFG	Landfill gas
LHMP	Local Hazard Mitigation Plan
L_{max}	Maximum A-weighted sound level
L_{min}	Minimum A-weighted sound level
LMWAP	Lake Mathews / Woodcrest Area Plan
L_N	Percentile exceedance noise levels *(For example, see L_{10}.)*
LNAP	Lakeview / Nuevo Area Plan
LOMR	Letter of Map Revision
LRA	Local Responsibility Area *(for fire hazards)*
LST	Localized Significance Threshold *(for air pollutants)*
LUD	Land Use Designation *(under the Riverside County General Plan)*
LUSTIS	Leaking Underground Storage Tank Information System

M

MJARB	March Joint Air Reserve Base
MJPA	March Joint Powers Authority
MCE	Maximum credible earthquake
MCL	Maximum contamination level *(as in water pollutant level)*
MDAB	Mojave Desert Air Basin
MDP	Master Drainage Plan
MDAQMD	Mojave Desert Air Quality Management District
MEC	Munition and Explosive of Concern
mg	Milligram
µg	Microgram
mg/L	Milligrams per liter
MLD	Most likely descendent *(referring to cultural artifact and Tribal lineage)*
MMBTU	Million British thermal unit *(measure of energy output)*
MMT	Million metric ton
MPE	Maximum probable event
mpg	Miles per gallon
mph	Miles per hour
MPO	Metropolitan Planning Organization
MRMHMP	Mineral Resources and Mineral Hazards Mapping Program
MRMPs	Mineral Resource Management Policies
MRZ	Mineral Resources Zone
MSHCP	Multiple Species Habitat Conservation Plan
MSW	Municipal solid waste
MTBE	Methyl tertiary-butyl ether *(common gasoline additive)*

MT	Metric tons
MVAP	Mead Valley Area Plan
M_w	Maximum magnitude *(measure of seismic activity)*
MWD	Metropolitan Water District of Southern California
Mwh	MegaWatt-hour

N

N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standard
NAHC	(California) Native American Heritage Commission
NAGPRA	Native American Graves Protection and Repatriation Act
NATDAM	National Inventory of Dams
NCCP	Natural Community Conservation Planning
NDFE	Nondisposal Facility Element
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHL	National Historic Landmarks
NHPA	National Historic Preservation Act
Ni	Nickel
NIMS	National Incident Management System
NO	Nitric oxide
NO2	Nitrogen dioxide
NOC	Notice of Completion
NOP	Notice of Preparation
NOX	Nitrogen oxide *(referring generally to all compounds of nitrogen oxide)*
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTMP	Non-Industrial Timber Management Plan
NWS	Naval Weapons Station

O

O_3	Ozone
OES	Office of Emergency Services
OHWM	Ordinary high water mark
ORV	Off-road vehicle
OPR	(California Governor's) Office of Planning and Research

P

PAP	(San Gorgonio) Pass Area Plan
PCB	Polychlorinated biphenyl
PCC	Portland cement concrete
PDP	Planning Department paleontology (study)

PG&E	Pacific Gas and Electric Company
POL	Petroleum, oil and lubricant
PRIMP	Paleontological Resource Impact Mitigation Program
PVVAP	Palo Verde Valley Area Plan
Pb	Lead
PFC	Perfluorocarbon
pm	post meridiem *(after noon, i.e., evening)*
PM-2.5	Particulate matter, fine particles - under 2.5 µm *(also written $PM_{2.5}$)*
PM-10	Particulate matter, coarse particles - between 2.5 to 10 µm *(also written PM_{10})*
ppm	Parts per million
PPV	Peak particle velocity
PRC	(California) Public Resource Code
PRPA	Paleontological Resources Preservation Act
PSD	Prevention of significant deterioration
PUC	(California) Public Utilities Code

R

RAO	Remedial Order
RAW	Removal Action Workplan
RCA	Regional Conservation Authority
RCALUC	Riverside County Airport Land Use Commission
RCBAP	Reche Canyon / Badlands Area Plan
RCCDR	Riverside County Center for Demographics Research
RCDEH	Riverside County Department of Environmental Health
RCFD	Riverside County Fire Department
RCHL	Riverside County Historical Landmark
RCIP	Riverside County Integrated Plan
RCOES	Riverside County Office of Emergency Services
RCP-10	Riverside County Projections (for Year) 2010
RCPG	Regional Comprehensive Plan and Guide
RCRA	(Federal) Resource Conservation and Recovery Act
RCRMC	Riverside County Regional Medical Center
RCWMD	Riverside County Waste Management Department
REMAP	Riverside Extended Mountain Area Plan
RHNA	Regional Housing Needs Assessment
RI/FS	Remedial Investigation and Feasibility Study
RIVTAM	Riverside County Traffic Analysis Model
RMS	Root-mean square
ROC	Reactive organic compound
ROG	Reactive organic gas
ROW	Right-of-way
RP	Responsible party
RPS	Renewable portfolio standard
RTC	Resolution trust corporation
RTP	Regional Transportation Plan
RUFMP	Riverside Unit Fire Management Plan
RVO	Rural Village Overlay

RVSA	Rural Village Study Area
RWQCB	Regional Water Quality Control Board

S

SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCGC	Southern California Gas Company
SCH	State Clearinghouse
SCHWMA	Southern California Hazardous Waste Management Authority
SCS	Sustainable Communities Strategy
SEMS	Standardized Emergency Management Systems
sf	Square feet
SF_6	Sulfur hexafluoride
SFHA	Special Flood Hazard Area
SFP	School Facilities Program
SHMA	Seismic Hazards Mapping Act
SIP	State Implementation Plan
SKR-HCP	Stephens' Kangaroo Rat Habitat Conservation Plan
SLC	State Lands Commission
SMARA	State Mining and Reclamation Act
SMGB	State Mining and Geology Board
SO_2	Sulfur dioxide
SOI	Sphere of Influence
SONGS	San Onofre Nuclear Generating Station
SOP	Standard operating procedure
SOx	Sulfur oxide
SR	State Route
SRA	Source Receptor Area *(air quality)*
SRA	State Responsibility Area *(fire hazard management)*
SRRE	Source Reduction and Recycling Element
SSAB	Salton Sea Air Basin
STOLport	Short takeoff and landing airport
SWAP	Southwest Area Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
SWTC	Southwest Transmission Cooperative

T

TAC	Toxic air contaminant
TCAP	Temescal Canyon Area Plan
TDR	Transfer of development right

TDS	Total dissolved solid
THP	Timber Harvest Plan
TL	Transmission loss
TOD	Transit-oriented development
TPZ	Timberland Production Zone
tpy	Tons per year
TRI	Toxics Release Inventory
TUMF	Transportation Uniform Mitigation Fee

U

UFC	Uniform Fire Code
UNFCCC	United Nations Framework Convention Climate Change
UP	Union Pacific *(railroad line)*
UP LA Sub	UP Los Angeles Subdivision *(railroad line)*
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UXO	Unexploded ordinance
UWMP	Urban Water Management Plan

V

VdB	Vibration decibel
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle miles traveled
VOC	Volatile organic compound

W

WCVAP	Western Coachella Valley Area Plan
WECS	Wind energy conversion system *(proper name for "wind turbines")*
WIMP	Wind Implementation Monitoring Program
WRC-MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
WRP	Waste Recycling Plan
WWTP	Wastewater Treatment Plan

8.2 General Plan Land Use Designation (LUD) Abbreviations

Community Development Foundation:

EDR	Estate Density Residential
VLDR	Very Low Density Residential
LDR	Low Density Residential
MDR	Medium Density Residential
MHDR	Medium High Density Residential
HDR	High Density Residential
VHDR	Very High Density Residential
HHDR	Highest Density Residential
CR	Commercial Retail
CT	Commercial Tourist
CO	Commercial Office
LI	Light Industrial
HI	Heavy Industrial
BP	Business Park
PF	Public Facilities
CC	Community Center
MUPA	Mixed Use Planning Area

Rural Community Foundation:

RC-EDR	Rural Community - Estate Density Residential
RC-VLDR	Rural Community - Very Low Density Residential
RC-LDR	Rural Community - Low Density Residential

Rural Foundation:

RR	Rural - Residential
RM	Rural - Mountainous
RD	Rural - Desert

Agriculture:

AG	Agriculture

Open Space:

OS-C	Open Space - Conservation
OS-CH	Open Space - Conservation Habitat
OS-W	Open Space - Water
OS-R	Open Space - Recreation *(or OS-REC)*
OS-RUR	Open Space - Rural
OS-MR	Open Space - Mineral Resources *(or OS-MIN)*

Overlays:

CCO	Community Center Overlay
RVO	Rural Village Overlay
CDO	Community Development Overlay

8.3 Glossary

Acre-Foot (af): An acre foot is a unit of measure and represents a volume of water that would cover an acre to a depth of one foot (43,560 cubic feet of water or approximately 326,000 gallons). Enough water is contained in an acre foot to supply the water needs of two families for one year.

Acres, Gross: The entire acreage of a site. Gross acreage is calculated to the centerline of proposed bounding streets and to the edge of the right-of-way of existing or dedicated streets.

Acres, Net: The portion of a site that can actually be built upon. The following are not included in the net acreage of a site: public or private road rights-of-way, public open-space, and flood ways.

Affordable Housing: Housing capable of being purchased or rented by a household with very low, low, or moderate income, based on a household's ability to make monthly payments necessary to obtain housing. "Affordable to low-and moderate-income households" means that at least 20 percent of the units in a development will be sold or rented to lower income households, and the remaining units to either lower or moderate income households. Housing units for lower income households must sell or rent for a monthly cost not greater than 30 percent of 60 percent of area median income. Housing units for moderate income must sell or rent for a monthly cost not greater than 30 percent of area median income.

Agriculture Preserve: An agricultural preserve defines the boundary of an area within which the County of Riverside has entered into a contract with the property owner, through a resolution of the Board of Supervisors. Only land located within an agricultural preserve is eligible for a Williamson Act contract. Preserves are regulated by rules and restrictions designated in the resolution to ensure that the land within the preserve is maintained for agricultural or open space use.

Airport Influence Area: A planning area designated by the Airport Land Use Commission around each public airport which is, or reasonably may become, affected by airport related noise, fumes, or other influence, or which is, or reasonably may become, a site for a hazard to aerial navigation.

Airport Land Use Compatibility Plan (ALUCP): Plan that protects airports from encroachment by incompatible land uses that could result in restricted operations of the airport.

Alignment: A planning term used to identify the general location of a current or future roadway. For future roadways, it is intended to describe a designated area or buffer set aside so a specific alignment (road location) can be determined as the need is established.

Alluvial Fan: A sedimentary deposit located in a topographic break such as the base of a mountain front, escarpment, or valley side, that is composed of streamflow and/or debris flow sediments and which has the shape of a fan, either fully or partially extended.

Alquist-Priolo Earthquake Fault Zoning Act of 1973: Prevents the construction of new buildings along known active faults and also requires that any building project in an active fault zone produce a geology report.

Ambient: Surrounding on all sides; used to describe measurements of existing conditions with respect to traffic, noise, air and other environments.

Ambient Air Quality Standards (AAQS): These standards measure outdoor air quality. They identify the maximum acceptable average concentrations of air pollutants during a specified period of time. These standards have been adopted at a state and federal level.

Ambient Noise: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Apartment Building: A multi-unit dwelling made up of several (generally four or more) apartments, which are rented out to a family or one or more people for their exclusive use.

Aquifer: An underground, water-bearing layer of earth, porous rock, sand, or gravel, through which water can seep or be held in natural storage. Aquifers generally hold sufficient water to be used as a water supply.

Area of Statewide Significance: An area designated by the State Mining and Geology Board pursuant to PRC Section 2790 which is known to contain a deposit of minerals, the extraction of which is judged to be of prime importance in meeting future needs for minerals in a particular region (region wide) or state and which, if prematurely developed for alternate incompatible land uses, could result in the permanent loss of minerals that are of more than local or regional significance (Public Resources Code Section 2726/ Section 2727).

Arterial Highway: Medium to higher speeds (30-55 mph), medium to higher capacity (10,000-50,000 average daily trips) roadway that provides intra- and inter-community travel and access to the regional highway and freeway system. Access to community arterials should be provided at collector roads and local streets, discouraging direct access from parcels to existing arterials.

Attached: Units that are placed side-by-side so that some structural parts are touching one another, such as sharing a common wall or roof, for example.

Attainment: Compliance with state and federal ambient air quality standards within an air basin. (See "Non-attainment")

Attenuation: Reduction in the level of sound resulting from absorption by the topography, the atmosphere, distance, barriers, and other factors.

Average Daily Traffic (ADT): The average number of vehicles that travel on a given roadway in a 24-hour period (weekday).

A-weighted Decibel (dBA): A-weighted decibels are an expression of the relative loudness of sounds in air as perceived by the human ear. In the A-weighted system, the decibel values of sounds at low frequencies are reduced compared with unweighted decibels, in which no correction is made for audio frequency.

Base Flood: In any given year, a 100-year flood that has a 1 percent likelihood of occurring, and is recognized as a standard for acceptable risk.

Baseline Forecast: A prediction of future energy needs which does not take into account the likely effects of new conservation programs that have not yet been started.

Best Attainment Control Measures: A set of programs that identify and implement potentially best available control measures affecting local air quality issues.

Best Management Practice (BMP) : A policy, rule, or regulation that results in greater efficiency or benefits than from standard practices.

Bicycle Lane (Class II Facility): A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Path (Class I Facility): A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

Bicycle Route (Class III Facility): A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

Bike Lane: A paved area located between the travel lane(s) and shoulder (or a replacement to the shoulder) of a roadway. Bike lane locations are identified on Riverside County's Bicycle Master Plan.

Bikeways: A term that encompasses bicycle lanes, bicycle paths, and bicycle routes.

Biomass: Energy resources derived from organic matter. These include wood, agricultural waste, landfill gas, digester gas, and other living-cell material that can be burned to produce heat energy.

Biotic Community: A group of living organisms characterized by a distinctive combination of both animal and plant species in a particular habitat.

Blueline Stream: A watercourse shown as a blue line on a U.S. Geological Service topographic quadrangle map.

Brownfield: An area with abandoned, idle or under-used industrial and commercial facilities where expansion, redevelopment or reuse is complicated by real or perceived environmental contamination.

Buffer Zone: An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

Building: A building is a resource, such as a house, barn, church, factory, hotel, or similar structure created principally to shelter or assist in carrying out any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.

Build out: Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations. (See "Carrying Capacity (3)")

CalFire (California Department of Forestry and Fire Protection): The California agency responsible for wildfire management, control and prevention on public (state) lands. In Riverside County, CalFire also functions as the Riverside County Fire Department under contract.

California Air Resources Board. The California agency responsible for air pollution control at the state level.

California Clean Air Act (CCAA): Legislation enacted in 1988 and amended in 1992 and 1996, mandating that areas which have not attained State of California ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide to prepare plans to attain the standards by the earliest practicable date.

California Energy Commission. The state agency established by the Warren-Alquist State Energy Resources Conservation and Development Act of 1974 (Public Resources Code, Sections 25000 et seq.), responsible for energy policy.

California Department of Fish and Game (CDFG): This agency changed its name in 2012. See *California Department of Fish and Wildlife*, below.

California Department of Fish and Wildlife (CDFW): This agency maintains native fish, wildlife, plant species and natural communities for their intrinsic and ecological value and their benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities. The CDFW also manages the diversified use of fish and wildlife including for recreational, commercial, scientific and educational purposes.

California Environmental Quality Act (CEQA): A collection of state laws (namely, Public Resources Code Section 21000 *et seq.)* that require state and local agencies to regulate activities with consideration for environmental protection. Established in 1970, it provides an interdisciplinary framework for agencies to prevent environmental damage and contains "action-forcing" procedures to ensure that agency decision-makers take environmental factors into account.

California Power Authority: Focuses on developing the state's peak energy reserve margin and in developing renewable energy and conservation projects.

California Public Utilities Commission (CPUC): A state agency created by constitutional amendment in 1911 to regulate the rates and services of more than 1,500 privately owned utilities and 20,000 transportation companies. The major duties of the CPUC are to regulate privately owned utilities, securing adequate service to the public at rates that are just and reasonable both to customers and shareholders of the utilities; including rates, electricity transmission lines, and natural gas pipelines. The CPUC also provides electricity and natural gas forecasting, and analysis and planning of energy supply and resources.

CalTrans (California Department of Transportation): Agency responsible for the design, construction, operation and maintenance of the state highway system as well as interstates and other public freeways in California.

Capacity: The measure of a transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period. Capacity and Level of Service are analyzed separately and are not simply related to each other; both must be fully considered to evaluate the overall operation of a facility.

Capital Improvement. A specific undertaking involving procurement, construction, or installation of infrastructure, facilities, or related equipment which improves, preserves, enhances or modernizes the County's provision of municipal services.

Capital Improvement Program (CIP). A plan for the implementation and financing of public facilities projects including, but not limited to, a schedule for the commencement of construction, the estimated cost of construction, and the payment of facilities benefit assessments.

Carbon Dioxide (CO_2): A chemical compound composed of one carbon and two oxygen atoms. It is present in the earth's atmosphere at a low concentration and acts as a greenhouse gas. Researchers estimate that 97% of atmospheric CO_2 created each year is from natural sources and approximately 3% is from human activities.

Carbon Footprint: A measure of the impact of human activities on the environment. The carbon footprint can be measured as the total amount of greenhouse gases and carbon dioxide emitted for a product or service within a specific geographic area.

Carbon Monoxide (CO): A colorless odorless poisonous gas formed when carbon in fuels is not burned completely. It is a byproduct of motor vehicle exhaust that can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators.

Carrying Capacity: Used in determining the potential of an area to absorb development: (1) The level of land use, human activity, or development for a specific area that can be accommodated permanently without an irreversible change in the quality of air, water, land, or plant and animal habitats. (2) The upper limits of development beyond which the quality of human life, health, welfare, safety or community character within an area will be impaired. (3) The maximum level of development allowable under current zoning.

Channelization: (1) The straightening and/or deepening of a watercourse for purposes of storm-runoff control or ease of navigation. Channelization often includes lining of stream banks with a retaining material such as concrete. (2) At the intersection of roadways, the directional separation of traffic lanes through the use of curbs or raised islands that limit the paths that vehicles may take through the intersection.

Climate Change (also referred to as "Global Climate Change"). This term is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, climate change has been used synonymously with the term, 'global warming;' scientists, however, tend to use the term in the wider sense to address uneven patterns of predicted global warming and cooling and also include natural changes in climate.

Clustered Development: Development with dwelling units placed closer together than usual, or even attached, for the purpose of retaining and maximizing open space on or near the same site.

Collector: A relatively low-speed (25-30 mph), low-volume (5,000-20,000 average daily trips) street that provides circulation within and between neighborhoods. Collectors usually serve short trips and are intended for collecting trips from local streets and distributing them to the arterial network.

Commercial Solid Waste: Solid waste originating from stores, offices, and other commercial sources but does not include construction and demolition waste nor industrial solid waste.

Community Character. The aggregate of features and traits that form the individual nature and uniqueness of a community. The constructed and natural landmarks and surroundings that cause someone to identify with a particular place or community. This character is shaped by natural, cultural, societal, and economic forces.

Community Facilities District: A special district that can issue tax-exempt bonds for the planning, design, acquisition, construction or operation of public facilities, as well as provide public services to district residents. Special tax assessments levied by the district are used to repay the bonds.

Community Noise Equivalent Level (CNEL). Refers to predominant community noise rating scale used in California for land use compatibility assessment. A CNEL value represents the average sound level for a 24-hour period based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity during the evening and night periods.

Community Park. Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks.

Community Service District (CSD). Provides a variety of services, subject to LAFCO approval. These services include water service, irrigation, sanitation, fire protection, and recreational uses.

Compatible Use: A land use that is capable of existing together with or adjacent to another use without conflict or ill effects.

Complete Streets: Streets that include facilities and designs that enable safe access for all users (i.e., pedestrians, bicyclists, motorists, and transit riders) of all ages and abilities with characteristics such as comprehensive, integrated, and connected network; balanced design; variety of uses and activities that create a varied streetscape; design that relates well to bordering uses and allows for continuous activity; pedestrian and biking facilities that promote safety and maximize access to bordering uses; aesthetically designed street lights that provide sufficient illumination of sidewalks; consistent landscaping that includes street trees and landscaped medians and sidewalks; sustainable design that minimizes runoff, minimizes heat island effects, responds to climatic demands, and conserves scarce resources; and well-maintained facilities.

Concurrency: Installation and operation of facilities and services needed to meet the demands of new development simultaneous with the development.

Condominium: Often consists of units in a multi-unit dwelling (i.e., an apartment or a development) where each unit is individually owned and the common areas such as hallways and recreational facilities are jointly owned (usually as "tenants in common") by all the unit owners in the building.

Congestion: Congestion is usually defined as travel time or delay in excess of that normally experienced under free flow traffic conditions. Congestion is typically accompanied by lower speeds, stop-and-go travel conditions, or queuing, such as behind ramp meters or heavily used intersections.

Congestion Management Program (CMP): A program that monitors the performance of the region's transportation system, develops programs to address near-term and long-term congestion, and better integrates transportation and land use planning.

Consistency; Consistent: Free from significant variation or contradiction. The various diagrams, text, goals, policies and programs in the general plan must be consistent with each other, not contradictory or preferential. The term "consistent with" is used interchangeably with "conformity with." The courts have held that the phrase "consistent with" means "agreement with; harmonious with." Webster defines "conformity with" as meaning harmony, agreement when used with "with." The term "conformity" means in harmony therewith or agreeable to (Sec 58 Ops.Cal.Atty.Gen. 21, 25 [1975]). California State law also requires that a general plan be internally

consistent and also requires consistency between a general plan and implementation measures such as the zoning ordinance. As a general rule, an action program or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment.

Conservation Easement: An encumbrance which creates a legally enforceable land preservation agreement between a landowner and a government agency (municipality, county, state, federal) or a qualified land protection organization (often called a "land trust"), for the purposes of conservation. The property remains the private property of the landowner.

Critical Facility. Facilities housing or serving many people, that are necessary in the event of an earthquake or flood, such as hospitals, fire, police, and emergency service facilities, utility "lifeline" facilities, such as water, electricity, and gas supply, sewage disposal and communications and transportation facilities.

Cubic feet per second (cfs). A unit measure of flow expressed in cubic feet conveyed per one second.

Cubic Foot (cf *or* f^3): A common unit of measurement for volume, equal to a cube (square) one foot long on each side. Commonly used as a measure of natural gas volume; it is the amount of natural gas that fills a volume of one cubic foot under stated conditions of temperature, pressure, and water vapor. One cubic foot of natural gas has an energy content of approximately 1,000 Btus. One hundred (100) cubic feet equals one therm (100 ft^3 = 1 therm).

Cul-de-sac: A short street or alley with only a single means of ingress and egress at one end and with a large turnaround at its other end.

Cumulative Impacts: Two or more environmental effects that, when considered together, are considerable or which compound or increase other environmental impacts.

Database: A collection of information stored in an electronic format that can be searched by a computer.

Day-Night Average Noise Level (L_{dn}): A 24-hour average Leq with a 10 dBA "penalty" added to noise levels during the hours of 10:00 P.M. to 7:00 A.M. to account for increased sensitivity that people tend to have to nighttime noise. Because of this penalty, the Ldn would always be higher than its corresponding 24-hour Leq (e.g., a constant 60 dBA noise over 24 hours would have a 60 dBA Leq, but a 66.4 dBA Ldn).

dB: Decibel; a unit used to express the relative intensity of a sound as it is heard by the human ear.

dBA: The "A-weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

Defensible Space: An area either natural or man-made, where material capable of allowing a fire spread unchecked has been treated, cleared, or modified to slow the rate and intensity of advancing wildfire. It is an area of increased safety for emergency fire equipment and evacuating residents and a point for fire suppression to occur.

Density, Residential: The number of permanent residential dwelling units per gross acre of land. -(See "Acres, Gross")

Density Bonus: The allocation of development rights that allows a parcel to accommodate additional square footage or additional residential units beyond the maximum for which the parcel is zoned. Under CGC Section 65915, a housing development that provides 20% of its units for lower income households, 10% of its units for very low-income households or 50% of its units for seniors, is entitled to a density bonus and other concessions.

Density, Residential: The number of permanent residential dwelling units per acre of land. Densities specified in the general plan are expressed in units per gross acre.

Density Transfer: A way of retaining open space by concentrating densities usually in compact areas adjacent to existing urbanization and utilities while leaving unchanged historic, sensitive, or hazardous areas. In some jurisdictions, for example, developers can buy development rights of properties targeted for public open space and transfer the additional density to the base number of units permitted in the zone in which they propose to develop.

Designation, Land Use (LUD): A system for classifying and designating the appropriate use of properties used in the Riverside County General Plan. The land use designations refer to the type and intensity of land uses that are compatible with a particular location and its surroundings. The land use designations (listed in General Plan Table LU-3) are defined and/or limited by the Foundation Component in which the LUD is grouped, as well as the maximum allowable residential density or non-residential building intensity (i.e., FAR).

Detention Dam, Detention Basin, Retention Pond: Detention dams are constructed to retard flood runoff, minimize the effect of sudden floods and also trap sediment (particularly as debris dams or debris basins). If the dam temporarily stores and then releases water through an outlet structure, it is referred to as a detention basin. Such basins may be planted with grass and used for open space or recreation during dry weather. When the dam allows for water to be held as long as possible, with or without the controlled release of water, it is referred to as a retention pond. When the impounded water is allowed to seep into permeable banks or gravel strata in the dam's foundation, the structure is called a water-spreading dam or dike. The main purpose of such structures is to recharge the underground water supply.

Developable Land: Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas.

Development. Physical changes to land or structures that are subject to approval by the County of Riverside, or other approvals by the County of Riverside that ready land or structures for such changes.

Development Agreement. A legislatively approved contract between a jurisdiction and a person having legal or equitable interest in real property within the jurisdiction (California Government Code Section 65865 et. seq.) that "freezes" certain rules, regulations, and policies applicable to development of a property for a specified period of time, usually in exchange for certain concessions by the owner.

Development Fee. See "Impact Fee"

Disaster. An occurrence threatening the health, safety, or property of a community or larger area, generally beyond the capability of a single jurisdiction to handle. Types of disasters include man-made, natural, or war related; such as nuclear attack, earthquakes, tidal waves, floods, hurricanes, and dam failures.

Discharge. In its simplest concept, discharge means outflow; therefore, the use of this term is not restricted as to course or location, and it can be applied to describe the flow of water from a pipe or from a drainage basin. If the discharge occurs in some course or channel, it is correct to speak of the discharge of a canal or of a river.

Distribution System (Electric Utility). The substations, transformers and lines that convey electricity from high-power transmission lines to ultimate consumers.

Diversion. Any activity that results in the beneficial reuse or reduction in solid waste at the source of generation, or the diversion of solid waste from disposal through recycling, composting, and transformation.

Drainage Area. The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is enclosed by a drainage divide.

Drainage Basin. A part of the surface of the Earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Dry Year. A year in which rainfall is less than the long-term average.

Dwelling Unit. A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen), that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

Earthquake. This term is used to describe both sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth.

Easement. Usually the right to use property owned by another for specific purposes or to gain access to another property. For example, utility companies often have easements on the private property of individuals to be able to install and maintain utility facilities.

Easement, Conservation. A tool for acquiring open-space with less than full-fee purchase, whereby a public agency buys only certain specific rights from the land owner. These may be positive rights (providing the public with the opportunity to hunt, fish, hike, or ride over the land) or they may be restrictive rights (limiting the uses to which the land owner may devote the land in the future.)

Elderly. Persons age 62 and older. (See "Seniors")

Emission Standard. The maximum amount of pollutant legally permitted to be discharged from a single source, either mobile or stationary.

Endangered Species. A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

Energy Conservation. Steps taken to cause less energy to be used than would otherwise be the case. These steps may involve improved efficiency, avoidance of waste, reduced consumption, etc. They may involve installing equipment (such as a computer to ensure efficient energy use), modifying equipment (such as making a boiler more efficient), adding insulation, changing behavior patterns, etc.

Energy Conservation/Efficiency. Energy efficiency is using less energy/electricity to perform the same function. Programs designed to use electricity more efficiently – doing the same with less. Energy conservation has the connotation of doing without in order to save energy rather than using less energy to do the same thing and so is not used as much today.

Environment. The physical conditions that exist within an area that will be affected by a proposed project, which in this case is the implementation of the *2000 Riverside County General Plan.* The conditions include land, air, water, minerals, flora, fauna, noise, and objects of historical or aesthetic significance.

Environmental Impact Report (EIR). A detailed statement describing and analyzing the significant environmental effects of a proposed project, and discussing ways to mitigate or avoid those effects.

Environmental Impact Statement (EIS). Under the National Environmental Policy Act, a statement on the effect of development proposals and other major actions that significantly affect the environment.

Erosion. (1) The loosening and transportation of rock and soil debris by wind, rain, or running water. (2) The gradual wearing away of the upper layers of earth.

Equivalent Sound Level (Leq). The level of steady-state sound that, in a stated time period and at a stated location, has the same sound energy as the time-varying sound (approximately equal to the average sound level). The equivalent sound level measured over a one hour period is called the hourly Leq or Leq(h).

Excavation. Any act by which soil, sand, gravel, or rock is cut into, dug, quarried, uncovered, removed, displaced, or relocated and shall include the conditions resulting there from.

Exterior Noise Levels. Noise measured at all exterior areas which are provided for group or private useable open space purposes. For CNEL levels equal to 60 decibels or greater, an acoustical analysis shall be required.

Family. (1) Two or more persons related by birth, marriage, or adoption [U.S. Bureau of the Census]. (2) An individual or a group of persons living together who constitute a bona fide single-family housekeeping unit in a dwelling unit, not including a fraternity, sorority, club, or other group of persons occupying a hotel, lodging house or institution of any kind [California].

Farmland. Refers to eight classifications of land mapped by the U.S. Department of Agriculture Soil Conservation Service. The five agricultural classifications defined below- except Grazing Land- do not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Statewide Importance. As designated by the State Farmland Monitoring and Mapping Program, Land other than Prime Farmland, which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops within the last three years.

Farmland of Local Importance. As designated by the State Farmland Monitoring and Mapping Program, Land other than Prime Farmland, Farmland of Statewide Importance, or unique Farmland that is either currently producing crops, or that has the capability of production. This land may be important to the local economy due to its productivity.

Fault. A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Feasible. Capable of being accomplished in a successful manner within a reasonable time taking into account economic, environmental, social, and technological factors.

Federal Aviation Administration (FAA). The United States government agency that is responsible for insuring the safe and efficient use of the nation's airspace.

Federal Disaster Relief Act. Public Law 93-288, as amended, gives the President broad powers to supplement the efforts and available resources of state and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters.

Federal Emergency Management Agency (FEMA). An independent federal agency established to respond to major emergencies. FEMA seeks to reduce the loss of life and protect property against all types of hazards through a comprehensive, risk-based emergency management program. In March 2003, FEMA became part of the newly created U.S. Department of Homeland Security.

Federal Energy Regulatory Commission (FERC). Regulates interstate sales and transportation of electric power and natural gas.

Federally-Mapped Floodplain. A flood-prone area that has been mapped and accepted by FEMA as the result of a flood insurance study (FIS). Mapped floodplains are used for flood insurance needs and for other regulatory purposes.

Field Act. Legislation, passed after a 1933 Long Beach earthquake that collapsed a school, which established more stringent structural requirements and standards for construction of schools than for other buildings.

Fire Hazard. A measure of the likelihood of an area burning and how it burns, developed to include speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front.

Fiscal Impact Analysis. A projection of the direct public costs and revenues resulting from population or employment change to the local jurisdiction(s) in which the change is taking place. Enables local governments to evaluate relative fiscal merits of general plans, specific plans, or projects.

Flash flood. A sudden, violent flood, as after an intense rain.

Flood. An overflow or inundation that comes from a river or other body of water and causes or threatens damage. Any relatively high streamflow overtopping the natural or artificial banks in any reach of a stream.

Flood Control. Various activities and regulations that help reduce or prevent damages caused by flooding. Typical flood control activities include: structural flood control works (such as bank stabilization, levees, and drainage channels); acquisition of flood prone land; flood insurance programs and studies; river and basin management plans; public education programs; and flood warning and emergency preparedness activities.

Flood, 100-Year. The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

Flood Insurance Rate Maps (FIRMs). The Federal Emergency Management Agency (FEMA) publishes maps, called Flood Insurance Rate Maps (FIRMs). The purpose of a FIRM is to show the areas in a community that have a 1 percent or greater chance of flooding in any given year. FIRMs are the result of engineering studies that are performed by engineering companies, other federal agencies, or the community and are reviewed and approved by FEMA.

Floodplain. The relatively level land area on either side of the banks of a stream regularly subject to flooding. That part of the floodplain subject to a one percent chance of flooding in any given year is designated as an "area of special flood hazard" by the Federal Insurance Administration.

Floodplain Fringe. All land between the floodway and the upper elevation of the 100-year flood.

Floodway. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the "base flood" without cumulatively increasing the water surface elevation more than one foot. No development is allowed in floodways.

Floor Area, Gross. The gross floor area of a single-story building consists of its square footage as measured from the interior face of external walls, but not including any space where the floor-to-ceiling height is less than six feet and not including courtyard spaces without ceilings that are open and unobstructed to the sky. The gross floor area of a multi-story building consists of the sum of the horizontal areas of the several floors of a building measured from the interior face of exterior walls, but not including any space where the floor-to-ceiling height is less than six feet, and not including any stairwells, shafts, or courtyard spaces. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. For the purposes of floor area calculation, a shaft is defined as "an interior space, enclosed by walls or construction, extending through one or more stories or basements that connects openings in successive floors, or floors and roof, to accommodate elevators, dumbwaiters, mechanical equipment, or similar devices, or to transmit light or ventilation air." (California Building Code)

Floor Area Ratio (FAR). A term utilized to measure the allowable building intensity of nonresidential structures on a site, calculated by dividing the gross floor area by the total net acres of the site. For example, on a site with 40,000 square feet of net land area, a Floor Area Ratio (FAR) of 1.0 will allow a maximum of 40,000 square feet of gross floor area to be built, whereas a FAR of 1.5 would allow 60,000 square feet of gross floor area, and a FAR of 0.5 would allow 20,000 square feet of gross floor area. Compliance of nonresidential projects covering multiple parcels with FAR building intensity restrictions may be calculated on an overall project basis rather than on individual parcels within the project; in such situations, the County of Riverside may require reciprocal use agreements, parcel mergers, or specification of property owner rights and responsibilities through Covenants, Conditions, and Restrictions or other recorded documents.

Fossil Fuel. Coal, oil and natural gas; so called because they are the remains of ancient plant and animal life.

Freeway. A high-speed, high-capacity, limited-access road serving regional and county-wide travel. Such roads are free of tolls, as contrasted with "turnpikes" or other "toll roads" now being introduced into Southern California. Freeways generally are used for long trips between major land use generators.

Fuel Modification Zone (FMZ). A wide strip of land where combustible vegetation and/or other combustible material has been removed or modified or both, with or without being partially or totally replaced with approved drought-tolerant, fire-resistant, and/or irrigated plants to provide an acceptable level of risk.

Fugitive Dust. Dust particles which are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Gallons per day (gpd). A unit measure of flow expressed in gallons conveyed in one day.

Gallons per minute (gpm). A unit measure of flow expressed in gallons conveyed in one minute.

General Aviation. The portion of civil aviation that encompasses all facets of aviation except air carriers.

General Plan. A compendium of city or county policies regarding its long-term development, in the form of goals, policies, implementation measures, and maps. The general plan is a legal document required of each local

agency by the California Government Code Section 65301 and adopted by the City Council or Board of Supervisors.

Geographic Information System (GIS). An information system for capturing, storing, analyzing, managing and presenting data which are spatially referenced.

Global Warming. An increase in the near surface temperature of the earth. Global warming has occurred in the distant past as the result of natural influences, but the term is most often used to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases. Scientists generally agree that the earth's surface has warmed by about 1 degree Fahrenheit in the past 140 years, but warming is not predicted evenly around the globe. Due to predicted changes in the ocean currents, some places that are currently moderated by warm ocean currents are predicted to fall into deep freeze as the pattern changes.

Global Warming Solutions Act of 2006 (Assembly Bill 32). The California State Legislature adopted Assembly Bill (AB) 32 in 2006 to focus on reducing greenhouse gas (GHG) emissions in California. AB 32 requires the California Air Resources Board (CARB), the state agency charged with regulating state-wide air quality, to adopt rules and regulations that would achieve GHG emissions equivalent to state-wide levels in 1990 by 2020.

Grazing Land. Land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or growing of livestock. This classification does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

Greenbelt. A largely undeveloped area surrounding more urbanized areas, consisting of either agricultural lands, open space, conservation areas, passive parks, or very low density rural residential lands.

Greenhouse Effect. The warming of the earth's atmosphere attributed to a buildup of carbon dioxide or other gases; some scientists think that this buildup allows the sun rays to heat the earth, while making the infrared radiation atmosphere opaque to infrared radiation, thereby preventing a counterbalancing loss of heat.

Greenhouse Gas (GHG). Any gas that absorbs infrared radiation in the atmosphere. GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), halogenated fluorocarbons (HCFCs), ozone (O_3), perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs).

Grey Water. Washwater, such as bath, dish, and laundry water excluding toilet wastes and free of garbage grinder residues. When properly managed, grey water can be a valuable resource for planners, builders, developers and contractors because of the design and landscaping advantages of on-site treatment/management.

Groundborne Vibration. Typical groundborne vibration sources include; mining operations, including quarrying and blasting; railways and highways; industrial facilities including press shops and foundries. In extreme cases, these activities can bring about damage to local structures. It is also common for groundborne vibration to cause disturbance to occupants of structures either above or adjacent to the source.

Ground Failure. Ground movement or rupture caused by strong shaking during an earthquake. Includes landslide, lateral spreading, liquefaction, and subsidence.

Ground Shaking. The movement of the earth's surface from earthquakes or explosions. Ground motion is produced by waves that are generated by sudden slip on a fault that travel through the Earth and along its surface.

Groundwater. Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Groundwater Recharge. The natural process of infiltration and percolation of rainwater from land areas or streams through permeable soils into water-holding rocks that provide underground storage ("aquifers").

Growth Management. The use by a community of a wide range of techniques in combination to determine the amount, type, and rate of development desired by the community and to channel that growth into designated areas. Growth management policies can be implemented through growth rates, zoning, capital improvement programs, public facilities ordinances, urban limit lines, standards for levels of service, and other programs. (See "Congestion Management Plan")

Habitat. The physical location or type of environment in which an organism or biological population lives or occurs.

Hazardous Material. A material that, because of its quantity, concentration, or physical, chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (California Health and Safety Code)

Hazardous Waste. A waste or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either (a) cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible, illness or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed. (California Health and Safety Code)

High Occupancy Vehicle (HOV). Any vehicle other than a driver-only automobile (e.g., a vanpool, a bus, or two or more persons to a car).

Highway. A general term usually referring to a state or federally designated urban or rural route, designed to accommodate longer trips in the region.

Historic Preservation. The preservation of historically significant structures and neighborhoods until such time as, and in order to facilitate, restoration and rehabilitation of the building(s) to a former condition.

Hourly Noise Level. The average noise level during the hour. More specifically, for airborne sound it is the mean-square A-weighted sound pressure level over the hour. The unit is the decibel (dB).

Household. All those persons (related or unrelated), who occupy a single housing unit. (See "Family")

Householder. The head of a household.

Household Hazardous Waste. Results from products purchased by the general public for household use, which, because of the quantity, concentration, physical and/or chemical characteristics, may pose a present or potential hazard to human health or the environment when improperly treated, disposed, or otherwise managed.

Households, Number of. The count of all year-round housing units occupied by one or more persons. The concept of household is important because the formation of new households generates the demand for housing.

Each new household formed creates the need for one additional housing unit or requires that one existing housing unit be shared by two households. Thus, household formation can continue to take place even without an increase in population, thereby increasing the demand for housing.

Housing Unit. The place of permanent or customary abode of a person or family. A housing unit may be a single-family dwelling, a multi-family dwelling, a condominium, a modular home, a mobile home, a cooperative, or any other residential unit considered real property under state law. A housing unit has, at least, cooking facilities, a bathroom, and a place to sleep. It also is a dwelling that cannot be moved without substantial damage or unreasonable cost. (See "Dwelling Unit" "Family" and "Household")

Impact Fee. A fee, also called a development fee, levied on the developer of a project by a city, county, or other public agency as compensation for otherwise unmitigated impacts the project will produce. Section 66000, et seq., specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

Impervious Surface. Surface through which water cannot penetrate, such as roof, road, sidewalk, and paved parking lot. The amount of impervious surface increases with development and establishes the need for drainage facilities to carry the increased runoff.

Imported Water Supplies. Water supplies that lie outside the Riverside County region and require transport into the County of Riverside.

Industrial. The manufacture, production, and processing of consumer goods. Industrial is often divided into "heavy industrial" uses, such as construction yards, quarrying, and factories; and "light industrial" uses, such as research and development and less intensive warehousing and manufacturing.

Industrial Wastes. Solid, liquid or gaseous substances discharged or disposed of from an industrial, manufacturing, or commercial premise resulting from manufacturing, processing, treating, recovery, or development of natural or artificial resources of whatever nature.

Industrial Wastewater. All water carrying wastes and wastewater of the community, from any source, excluding domestic wastewater, including all wastewater from any producing, manufacturing, processing, institutional, commercial, service, agricultural, farming, all governmental uses, and all other operations of any kind or nature except domestic wastewater. These may include wastes of human origin similar to domestic wastewaters.

Industrial Solid Waste. Solid waste originating from mechanized manufacturing facilities, factories, refineries, publicly operated treatment works, and/or solid wastes placed in commercial collection bins.

Infill. Development and redevelopment of underused buildings and vacant lots in areas served by existing infrastructure. Development that channels economic growth into existing urban and suburban areas and conserves open space and agriculture at the periphery of the city.

Infill Development. Development of vacant land (usually individual lots or leftover properties) within areas that are already largely developed.

Infrastructure. Public services and facilities, such as sewage disposal systems, water supply systems, other utility systems, and roads.

Initial Study. A preliminary analysis prepared by a Lead Agency (Riverside County) determining whether an Environmental Impact Report or Negative Declaration must be prepared, and identifying the significant environmental effects to be analyzed in an Environmental Impact Report.

Institutional Uses. (1) Publicly or privately owned and operated activities such as hospitals, convalescent hospitals, intermediate care facilities, nursing homes, museums, and schools and colleges; (2) churches and other religious organizations; and (3) other nonprofit activities of a welfare, educational, or philanthropic nature that cannot be considered residential, commercial, or industrial. (See "Public and Quasi-public Facilities")

Integrated Waste Management. A process that includes effecting an overall reduction in the generation of waste and treating discarded materials as a resource, rather than as a substance of no value.

Intensity, Building. For residential uses, the actual number or the allowable range of dwelling units per acre (per gross acre, as used in this General Plan). For non-residential uses, the actual or the maximum permitted floor area ratios (FARs).

Inter-agency. Indicates cooperation between or among two or more discrete agencies in regard to a specific program.

Interior Noise Levels. Noise measured inside structures which are influenced by exterior noise and must meet a CNEL level equal to or less than 45 decibels, with the exception of certain non-residential projects where an interior CNEL noise level of 50 decibels is allowed.

Intrusive Noise. That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence, and tonal or informational content as well as the prevailing noise level.

Inversion Layer. A layer of warm air that traps the cooler air and any pollutants it carries, below.

Irrigated Land. Land that shows evidence of being irrigated during the year of the inventory or of having been irrigated during two or more of the last four years. Water is supplied to crops by ditches, pipes, or other conduits.

Issues. Important unsettled community matters or problems that are identified in a community's general plan and dealt with by the plan's objectives, policies, plan proposals, and implementation programs.

Jobs/Housing Balance; Jobs/Housing Ratio. The availability of affordable housing for employees. The jobs/housing ratio divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

Joint Powers Authority (JPA). A legal arrangement that enables two or more units of government to share authority in order to plan and carry out a specific program or set of programs that serves both units.

L10. The A-weighted sound level exceeded ten percent of the sample time. Similarly, L_{50}, L_{90} etc.

Land Banking. The purchase of land by a local government for use or resale at a later date. "Banked lands" have been used for development of low- and moderate-income housing, expansion of parks, and development of industrial and commercial centers. Federal rail-banking law allows railroads to bank unused rail corridors for future rail use while allowing interim use as trails.

Landfill Capacity. The remaining volumetric capacity of existing landfills—governed by design limitations.

Landfill Gas. Gas generated by the natural degrading and decomposition of municipal solid waste by anaerobic microorganisms in sanitary landfills. The gases produced, carbon dioxide and methane, can be collected by a series of low-level pressure wells and can be processed into a medium Btu gas that can be burned to generate steam or electricity.

Landslide. The down-slope movement of soil and/or rock.

Land Use. The occupation or use of land or water area for any human activity or any purpose defined in the general plan.

Land Use Classification. A system for classifying and designating the appropriate use of properties.

Landfill, Class I. Class I landfills are qualified to accept and manage hazardous waste. The primary objective at a Class I landfill is the protection of surface and subsurface water quality. A Class I landfill is required to be located where natural geographic features provide optimum conditions for the isolation of wastes from surface and subsurface waters.

Landfill, Class II. Waste facilities under the Class II designation are required to be located where site characteristics and containment structures isolate waste from surface and subsurface waters. Select types of hazardous materials may be deposited at Class II facilities, provided a special variance from standard hazardous waste management procedures is granted.

Landfill, Class III. Class III landfills are required to be located where adequate separation can be provided between nonhazardous solid waste and surface and subsurface waters. Class III landfills are not permitted to accept hazardous waste.

Landmark. (1) A building, site, object, structure, or significant tree, having historical, architectural, social, or cultural significance and marked for preservation by the local, state, or federal government. (2) A visually prominent or outstanding structure or natural feature that functions as a point of orientation or identification.

Lateral Spreading. Lateral movement of soil, often as a result of liquefaction during an earthquake.

Ldn. Day-Night Average Sound Level. The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10 dB weighting applied to night-time sound levels. The L_{dn} is approximately numerically equal to the CNEL for most environmental settings.

Lead. A gray-white metal that is soft, malleable, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and weathering of soils followed by fugitive dust emissions.

Lead Agency. The public agency that has the principal responsibility for carrying out or approving a project. Riverside County is the Lead Agency for the *2000 Riverside County General Plan.*

Leadership in Energy and Environmental Design (LEED). A Green Building Rating System™ that encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

Leq. The energy equivalent level, defined as the average sound level on the basis of sound energy (or sound pressure squared). The L_{eq} is a "dosage" type measure and is the basis for the descriptors used in current standards, such as the 24-hour CNEL used by the State of California.

Level of Service (LOS). A qualitative measure describing operational conditions within a traffic stream and the motorists' perceptions of those conditions. For example, LOS A represents free flow, almost complete freedom to maneuver within the traffic stream. LOS F represents forced flow, more vehicles are attempting to use the freeway than can be served resulting in stop and go traffic.

Level of Service (Traffic). A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

Level of Service A. Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

Level of Service B. Describes a steady flow of traffic, with only slight delays in vehicle movement and speed. All queues clear in a single signal cycle.

Level of Service C. Denotes a reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches.

Level of Service D. Designates the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one cycle during short peaks.

Level of Service E. Represents traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections.

Level of Service F. Describes unsatisfactory stop-and-go traffic characterized by "traffic jams" and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and "upstream" intersections may be blocked by the long queues.

Life Cycle. The period of time in which a facility runs on-line from construction completion through to the end of its useful life.

Linkage. With respect to jobs/housing balance, a program designed to offset the impact of employment on housing need within a community, whereby project approval is conditioned on the provision of housing units or the payment of an equivalent in-lieu fee. The linkage program must establish the cause-and-effect relationship between a new commercial or industrial development and the increased demand for housing.

Liquefaction. The transformation of loose, wet soil from a solid to a liquid state, often as a result of groundshaking during an earthquake.

Liquefaction. A process by which water-saturated sediment temporarily loses strength and acts as a fluid. This effect can be caused by earthquake shaking.

Lmax and Lmin. The maximum and minimum sound levels, respectively, recorded during a measurement period. When a sound meter is set to the "slow" response setting, as is typical for most community noise

measurements, the L_{max} and L_{min} values are the maximum and minimum levels recorded typically for one second periods.

Local Agency Formation Commission (LAFCO). A five- or seven-member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals. The LAFCO members generally include two county supervisors, two city council members, and one member representing the general public. Some LAFCOs include two representatives of special districts.

Local Coastal Program Land Use Plan. The relevant portion of a local government general plan or coastal element that details type, location, and intensity of land use, applicable resource protection and development policies, and, where necessary, implementation actions.

Low-income Household. A household with an annual income usually no greater than 80 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the U.S. Department of Housing and Urban Development (HUD) for the Section 8 housing program.

Low-income Housing Tax Credits. Tax reductions provided by the federal and state governments for investors in housing for low-income households.

Loudness. The intensive attribute of an auditory sensation, measured in sones. Calculated loudness of a sound is obtained by a stated empirical rule from the sound spectrum in octave or third-octave bands.

Mean Sea Level. The average altitude of the sea surface for all tidal stages.

Median. The portion of the roadway that separates opposing directions of traffic. It can be raised, landscaped, or level with the roadway, with turn features added intermittently or used as a continuous left turn lane.

Median Strip. The dividing area, either paved or landscaped, between opposing lanes of traffic on a roadway.

Mercalli Intensity Scale. A subjective measure of the observed effects (human reactions, structural damage, geologic effects) of an earthquake. Expressed in Roman numerals from I to XII.

Microclimate. The climate of a small, distinct area, such as a city street or a building's courtyard; can be favorably altered through functional landscaping, architecture, or other design features.

Mined Lands. Includes the surface, subsurface, and groundwater of an area in which surface mining operations will be, are being, or have been conducted, including private ways and roads appurtenant to any such area, land excavations, workings, mining waste, and areas in which structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations. (Public Resources Code Section 2729).

Minerals. Any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum (Public Resources Code Section 2005). Gold, sand, gravel, clay, crushed stone, limestone, diatomite, salt, borate, potash, etc., are examples of minerals.

Mineral Deposit. A naturally occurring concentration of minerals in amounts or arrangement that under certain conditions may constitute a mineral resource. The concentration may be of value for its chemical or physical characteristic or for both of these properties.

Mineral Reserves. That part of the resource base which could be economically extracted or produced at the time of determination.

Mineral Resource. A concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.

Minipark. Small neighborhood park of approximately one acre or less.

Mitigation Measure. A change in a project designed to avoid, minimize, rectify, reduce, or compensate for a significant environmental impact.

Mixed-Use Development. Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

Mobile Source. A mobile emission source is a moving object, such as on-road and off-road vehicles, boats, airplanes, lawn equipment, and small utility engines.

Multi-family Residential. A classification of housing where multiple separate housing units are contained within one building. The most common forms are apartment buildings and town homes.

Multimodal (transportation). Generally refers to all modes of transportation, motorized and non-motorized forms, including motor vehicles, transit vehicles, trucks, and biking, pedestrian walking or jogging, and equestrian movements.

Multiple Species Habitat Conservation Plan (MSHCP). A comprehensive habitat conservation planning program that addresses multiple species' needs, including habitat, and the preservation and management/monitoring of native vegetation/species.

Multiplier Effect. The recirculation of money through the economy multiplies its impact on jobs and income. For example, money paid as salaries to industrial and office workers is spent on housing, food, clothes and other locally-available goods and services. This spending creates jobs in housing construction, retail stores (e.g., grocery and drug stores) and professional offices. The wage paid to workers in those industries is again re-spent, creating still more jobs. Overall, one job in basic industry is estimated to create approximately one more job in non-basic industry.

Municipal and Industrial Water. Water for residential and commercial uses, accounting for approximately 80 to 85 percent of water demand. Agricultural water, which has lower standards for water quality, makes up the remaining 15 to 20 percent.

Municipal Services. Services traditionally provided by local government, including water and sewer, roads, parks, schools, and police and fire protection.

Mutual Aid Agreements. Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

National Ambient Air Quality Standards. The prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.

National Environmental Policy Act (NEPA). An act passed in 1974 establishing federal legislation for national environmental policy, a council on environmental quality, and the requirements for environmental impact statements.

National Flood Insurance Program. A federal program that authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.

National Historic Preservation Act. A 1966 federal law that established a National Register of Historic Places and the Advisory Council on Historic Preservation, and that authorized grants in aid for preserving historic properties.

National Pollutant Discharge Elimination System (NPDES). A national program under Section 402 of the Clean Water Act for regulation of discharges of pollutants from point sources to waters of the United States. Discharges are illegal unless authorized by an NPDES permit.

National Register of Historic Places. The official list, established by the National Historic Preservation Act, of sites, districts, buildings, structures, and objects significant in the nation's history or whose artistic or architectural value is unique.

Natural State. The condition existing prior to development.

Negative Declaration. A written statement prepared by a Lead Agency that briefly describes the reason why a proposed project will not have a significant effect on the environment and, therefore, does not require an Environmental Impact Report.

Neighborhood. A planning area commonly identified as such in a community's planning documents, and by the individuals residing and working within the neighborhood. Documentation may include a map prepared for planning purposes, on which the names and boundaries of the neighborhood are shown.

Neighborhood Park. City- or county-owned land intended to serve the recreation needs of people living or working within one-half mile radius of the park.

Neighborhood Unit. According to one widely-accepted concept of planning, the neighborhood unit should be the basic building block of the city. It is based on the elementary school, with other community facilities located at its center and arterial streets at its perimeter. The distance from the school to the perimeter should be a comfortable walking distance for a school-age child; there would be no through traffic uses. Limited industrial or commercial would occur on the perimeter where arterials intersect. This was a model for American suburban development after World War II.

Nitrogen Oxide. Primarily consists of nitric oxides (colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen).

Noise. Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise, simply, is "unwanted sound."

Noise Attenuation. Reduction of the level of a noise source using a substance, material, or surface, such as earth berm sand/or solid concrete walls.

Noise Contour. A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 L_{dn} contour (measured in dBA) require noise attenuation in residential development.

Noise Exposure Contours. Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and L_{dn} are the descriptors normally utilized to describe community exposure to noise.

Non-attainment. The condition of not achieving a desired or required level of performance. Frequently used in reference to air quality. (See "Attainment")

Non-Potable Water. Water that is not acceptable for human consumption, as defined by federal, state and local drinking water standards.

Non-Renewable Natural Resources. Inanimate resources that do not increase significantly with time and whose use diminishes the total stock (e.g., minerals, fossil fuels, and fossil water).

Notice of Completion. A brief notice filed with the Office of Planning and Research by the Lead Agency, as soon as it has completed a draft Environmental Impact Report.

Notice of Determination. A brief notice filed by a public agency after it approves or determines to carry out a project.

Notice of Hearing. A legal document announcing the opportunity for the public to present their views to an official representative or board of a public agency concerning an official action pending before the agency.

Notice of Preparation. A brief notice sent by a Lead Agency notifying Responsible, Trustee, and involved federal agencies that it plans to prepare an Environmental Impact Report for a project.

Off-Peak. Periods of relatively low system demands.

On-Peak Energy. Energy supplied during periods of relatively high system demand as specified by the supplier.

Open-Space Land. Any parcel or area of land or water that is essentially unimproved and devoted to an open-space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety.

Ordinance. A law or regulation set forth and adopted by a governmental authority, usually a city or county.

Outdoor Advertising Structure. Any device used or intended to direct attention to a business, profession, commodity, service, or entertainment conducted, sold, or offered elsewhere than upon the lot where such device is located.

Outdoor Recreation Use. A privately or publicly owned or operated use providing facilities for outdoor recreation activities.

Overdraft. The condition of a groundwater basin or sub-basin in which the amount of water withdrawn by pumping (or by other means such as groundwater discharge to wetlands or streams) exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions.

Overlay. A land use designation on the General Plan Land Use Map, or a zoning designation on a zoning map, that modifies the basic underlying designation in some specific manner.

Ozone. A pungent, colorless, toxic gas. Close to the earth's surface, it is produced photochemically from hydrocarbons, oxides of nitrogen and sunlight and is a major component of smog. At very high altitudes it protects the earth from harmful ultraviolet radiation.

Ozone Precursors. There are several chemical steps in creating ozone. Ozone precursors are chemicals that lead to the eventual creation of ozone. Ozone precursors occur either naturally or as a result of human activities, such as the use of combustion engines in cars.

Paratransit. An alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Typically vans or mini-buses are used to provide paratransit service, but also share taxis and jitneys are important providers.

Parcel. A lot in single ownership or under single control, usually considered a unit for purposes of development. Park Land; Parkland: Land that is publicly owned or controlled for the purpose of providing parks, recreation, or open-space for public use.

Parking Area, Public. An open area, excluding a street or other public way, used for the parking of automobiles and available to the public, whether for free or for compensation.

Parking Management. An evolving TDM technique designed to obtain maximum utilization from a limited number of parking spaces. Can involve pricing and preferential treatment for HOVs, non-peak period users, and short-term users. (See "High Occupancy Vehicle" and "Transportation Demand Management")

Parking Ratio. The number of parking spaces provided per 1,000 square of floor area (e.g., 2:1 or "two per thousand.")

Parking, Shared. A public or private parking area used jointly by two or more uses.

Parking Space, Compact. A parking space (usually 7.5 feet wide by 16 feet long when perpendicular to a driveway or aisle) permitted in some localities on the assumption that many modern cars are significantly smaller, and require less room, than a standard automobile. A standard parking space, when perpendicular to a driveway or aisle, is usually 8.5 feet wide by 18 feet long.

Parks. Open-space lands whose primary purpose is recreation. (See "Open-Space Land," "Community Park," and "Neighborhood Park.")

Parkway. An expressway or freeway designed for non-commercial traffic only; usually located within a strip of landscaped park or natural vegetation.

Parkway Strip. A piece of land located between the rear of a curb and the front of a sidewalk, usually used for planting low ground cover and/or street trees, also known as "planter strip."

Particulate Matter (PM). Atmospheric particulate made up of finely divided solids or liquids such as soot, dust, aerosols, fumes and mists. Commonly classified into two categories, PM_{10} (particles between 2.5 and 10 micrometers in length) and $PM_{2.5}$ (particles less than 2.5 micrometers in length).

Peak Delivery. The delivery of water during a peak demand event such as a peak day.

Peak Hour. The time period during which the greatest demand occurs on the transportation or infrastructure system in the morning and early afternoon, also known as "rush hour."

Peak Load. The highest electrical demand within a particular period of time. Daily electric peaks on weekdays occur in late afternoon and early evening. Annual peaks occur on hot summer days.

Performance Standards. Zoning regulations that permit uses based on a particular set of standards of operation rather than on particular type of use. Performance standards provide specific criteria limiting noise, air pollution, emissions, odors, vibration, dust, dirt, glare, heat, fire hazards, wastes, traffic impacts, and visual impact of a use.

Permeability (groundwater). Ability of a rock or unconsolidated deposit to transmit water through spaces that connect between grains. The size and shape of the spaces controls how well water transmits, or "flows."

Pervious Surface. A ground cover through which water can penetrate at a rate comparable to that of water through undisturbed soils.

Photovoltaic Cell. A semiconductor that converts light directly into electricity.

Plan Line. A precise line that establishes future rights-of-way along any portion of an existing or proposed street or highway and which is depicted on a map showing the streets and lot line or lines and the proposed right-of-way lines, and the distance thereof from the established centerline of the street or highway, or from existing or established property lines.

Planning Area. The area directly addressed by the general plan. A city's planning area typically encompasses the city limits and potentially annexable land within its sphere of influence.

Planning Commission. The Riverside County Planning Commission, a five-member body appointed by the Board of Supervisors to perform various development review and planning functions and make recommendations to the Board, in accordance with Riverside County Ordinance No. 348 and California Government Code Section 65100.

Pollution, Non-Point. Sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles.

Pollution, Point. In reference to water quality, a discrete source from which pollution is generated before it enters receiving waters, such as a sewer outfall, a smokestack, or an industrial waste pipe.

Poverty Level. As used by the U.S. Census, families and unrelated individuals are classified as being above or below the poverty level based on a poverty index that provides a range of income cutoffs or "poverty thresholds" varying by size of family, number of children, and age of householder. The income cutoffs are updated each year to reflect the change in the Consumer Price Index.

Pro Rata. Refers to the proportionate distribution of something to something else or to some group, such as the cost of infrastructure improvements associated with new development apportioned to the users of the infrastructure on the basis of projected use.

Private Airport. Any airport that allows use of its facilities only by the owner or his invitees.

Private Road/Private Street. Privately owned (and usually privately maintained) motor vehicle access that is not dedicated as a public street. Typically the owner posts a sign indicating that the street is private property and limits traffic in some fashion. For density calculation purposes, some jurisdictions exclude private roads when establishing the total acreage of the site; however, aisles within and driveways serving private parking lots are not considered private roads.

Program EIR. An Environmental Impact Report that may be prepared on a series of actions that can be characterized as one large project and are related either geographically; as logical parts in the chain of contemplated actions; in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. This EIR is a Program EIR.

Proposition 13. An initiative amendment to the California Constitution passed in June 1978. Tax rates on secured property are restricted to no more than one percent of "full cash value." Proposition 13 also defines assessed value and requires a two-thirds vote to change existing or levy new taxes.

Public and Quasi-public Facilities. Institutional, academic, governmental and community service uses, either owned publicly or operated by non-profit organizations, including private hospitals and cemeteries.

Public Airport. Any airport that offers the use of its facilities to the public in general, without prior notice and without specific invitation or clearance. An airport proprietor or operator may preclude use by a size or type of aircraft for which the facilities are not adequate without altering the public status of the airport.

Public Services. See "Municipal Services"

Public Utility Regulatory Policy Act (PURPA). 1978. Federal legislation requires utilities to buy electric power from private "qualifying facilities," at an avoided cost rate. This avoided cost rate is equivalent to what it would have otherwise cost the utility to generate or purchase that power themselves. Utilities must further provide customers who choose to self-generate a reasonably priced back-up supply of electricity.

Rangeland. Open grazing land.

Reactive Organic Gases (ROG). Reactive organic gases are photochemically reactive and are composed of non-methane hydrocarbons. These gases contribute to the formation of smog.

Reasonable Attainment Control Measures (RACMs). The Environmental Protection Agency requirement for air quality attainment plans to: a) implement all reasonably available control measures; and b) do it as expeditiously as practicable.

Reclaimed Water. Tertiary-treated recycled water from the three-stage treatment of municipal wastewater and is allowable for full-body human contact but not for direct human consumption.

Reclamation. The reuse of resources, usually those present in solid wastes or sewage.

Reclamation (Mining). The combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse surface effects incidental to underground mines, so that mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety. The process may extend to affected lands surrounding mined lands, and may require backfilling, grading, resoiling, revegetation, soil compaction, stabilization, or other measures (Public Resources Code Section 2733).

Reconstruction. As used in historic preservation, the process of reproducing by new construction the exact form and detail of a vanished structure, or part thereof, as it appeared during a specific period of time. Reconstruction is often undertaken when the property to be reconstructed is essential for understanding and interpreting the value of an historic district and sufficient documentation exists to insure an exact reproduction of the original.

Recreation, Active. A type of recreation or activity that requires the use of organized play areas including, but not limited to, softball, baseball, football and soccer fields, tennis and basketball courts and various forms of children's play equipment.

Recreation, Passive. Type of recreation or activity that does not require the use of organized play areas and can include use of unimproved recreation areas, such as trails and open space.

Recycled Water. Water available from the agency's recycled water facilities, which may include a combination of treated wastewater, intercepted surface and subsurface stream flows, groundwater and other waters including potable water. Tertiary-treated recycled water can be used for virtually all nonpotable applications such as urban landscapes, agriculture, and industrial uses, including structural and nonstructural fire fighting. Irrigating with recycled water is making use of a valuable resource that would otherwise be disposed.

Recycling. The process of collecting, sorting, cleansing, treating, and reconfiguring materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. Recycling does not include transformation.

Redevelop. To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

Regional. Pertaining to activities or economies at a scale greater than that of a single jurisdiction, and affecting a broad geographic area.

Regional Park. A park typically 150-500 acres in size focusing on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

Regional Transportation Plan. A plan developed by Southern California Association of Governments (SCAG) to meet the region's long-term mobility needs, better connect transportation and land use policy decisions, and create a transportation network that will serve the people of this region.

Renewable Energy. Resources that constantly renew themselves or that are regarded as practically inexhaustible. These include solar, wind, geothermal, hydro, and wood. Although particular geothermal formations can be depleted, the natural heat in the Earth is a virtually inexhaustible reserve of potential energy. Renewable resources

also include some experimental or less-developed sources such as tidal power, sea currents, and ocean thermal gradients.

Reservoir. A pond, lake, or basin, either natural or artificial, for the storage, regulation, and control of water.

Residential, Multiple Family. Usually three or more dwelling units on a single site, which may be in the same or separate buildings.

Residential, Single-family. A single dwelling unit on a building site.

Residential Solid Waste. Solid waste generated in single-family or multi-family dwellings.

Response Time. Calculated by adding the call-time (time it takes dispatcher to reach an emergency service provider), reflex time (time it takes service provider to put on equipment, leave the station, and travel to fire station), and travel time (time it takes to reach the emergency location).

Responsible Agency. A public agency that proposes to carry out or approve a project for which a Lead Agency is preparing or has prepared an Environmental Impact Report.

Retrofit. To add materials and/or devices to an existing building or system to improve its operation, safety, or efficiency. Buildings have been retrofitted to use solar energy and to strengthen their ability to withstand earthquakes, for example.

Rezoning. An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

Richter Scale. A measure of the size or energy release of an earthquake at its source. The scale is logarithmic; the wave amplitude of each number on the scale is 10 times greater than that of the previous whole number.

Right-of-way. A strip of land occupied or intended to be occupied by certain transportation and public use facilities, such as roads, railroads, and utility lines.

Riverside County Transportation Analysis Model (RIVTAM). A zone-based travel demand model which was developed as a sub-regional model based on the Southern California Association of Government's 2008 Region Transportation Plan travel demand forecasting model, focusing on Riverside County.

Road (Private). Any road which has not been declared or accepted for public use and/or county maintenance by the County of Riverside.

Road (Public). Any road improved to Riverside County standards with a dedicated right-of-way that has been granted and accepted into the Riverside County system of maintained public roads and approved for public use.

Sanitary Landfill. The controlled placement of refuse within a limited area, followed by compaction and covering with a suitable thickness of earth and other containment material.

Sanitary Sewer. A system of subterranean conduits that carries refuse liquids or waste matter to a plant where the sewage is treated, as contrasted with storm drainage systems (that carry surface water) and septic tanks or leech fields (that hold refuse liquids and waste matter on-site). (See "Septic System")

Santa Ana Winds. Warm, dry winds that blow from the east or northeast (offshore) occurring predominantly between the months of December and February. The winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah) and move locally across the Mojave Desert and then over and through passes in the San Gabriel, San Bernardino and San Jacinto Mountains.

Seismic. Caused by or subject to earthquakes or earth vibrations.

Scenic Corridor. The visible land outside of the highway right-of-way or "the view from the road" which can be subjected to the scenic corridor protection measures.

Scenic Highway. A highway may be designated as 'scenic' by CalTrans or the County of Riverside depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

Scenic Resources. The objective and subjective visual elements of a unique or irreplaceable landscape, including rewarding views of vegetation, topography, geological formations, and historical sites.

Scenic Viewshed. An aesthetic resource with views of a scenic vista or key point(s) of interest.

Sensitive Receptors. Sensitive receptors are defined as land uses that typically accommodate sensitive population groups such as long term health care facilities, rehabilitation centers, retirement homes, convalescent homes, residences, schools, childcare centers, and playgrounds.

Septic System. A sewage-treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absence of oxygen. Septic systems are often used for individual-home waste disposal where an urban sewer system is not available. (See "Sanitary Sewer")

Settlement. (1) The drop in elevation of a ground surface caused by settling or compacting. (2) The gradual downward movement of an engineered structure due to compaction. Differential settlement is uneven settlement, where one part of a structure settles more or at a different rate than another part.

Sidewalk. A paved pedestrian walkway, generally located within the parkway.

Siltation. (1) The accumulating deposition of eroded material. (2) The gradual filling in of streams and other bodies of water with sand, silt, and clay.

Single-family Dwelling, Attached. A dwelling unit occupied or intended for occupancy by only one household that is structurally connected with at least one other such dwelling unit.

Single-family Dwelling, Detached. A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use. (See "Family.")

Site. A parcel of land used or intended for one use or a group of uses and having frontage on a public or an approved private street. A lot.

Smog. A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

Solid Waste. Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes and wood, but does not include sewage and hazardous materials. Organic wastes and paper products comprise about 75 percent of typical urban solid waste.

Sound Level. The quantity in decibels measured by a sound-level meter satisfying requirements of the American National Standard Specifications for Sound Level Meters S1.4-1971. Sound level is the frequency weighted sound pressure level obtained with the standardized dynamic characteristic "fast" or "slow" and weighting A or C; unless indicated otherwise, the A-weighting is understood. The unit of any of the sound levels is the decibel. The A-weighting makes the sound-level meter relatively less sensitive to low-frequency sound, somewhat in the way the ear is progressively less sensitive to sounds of frequency below kHz. The C-weighting makes the sound-level meter relatively less sensitive to low-frequency sound, somewhat in the way the ear is progressively less sensitive to sounds of frequency below kHz. The C-weighting gives the sound-level meter a constant sensitivity in the frequency range 32 to 8000 Hz.

Source Reduction. Refers to any action which causes a net reduction in the generation of solid waste and includes, but is not limited to, replacing disposable materials and products with reusable materials and products, reducing packaging and increasing the efficient use of materials.

South Coast Air Basin (SCAB). An air basin is a geographic area that exhibits similar meteorological and geographic conditions. California is divided into fifteen air basins to assist with the statewide regional management of air quality issues. The SCAB is bounded on the west by the Pacific Ocean, San Gorgonio Pass to the east, San Diego County to the south and Transverse mountains to the north.

South Coast Air Quality Management District (SCAQMD). The SCAQMD is the regulatory agency responsible for developing air quality plans, monitoring air quality, and reporting air quality data for the SCAB and SSAB.

Southern California Association Of Governments (SCAG). Serves as the forum for decision-making on regional issues such as growth, transportation, land use, the economy, the environment, and criminal justice in the San Diego region. SANDAG is governed by a Board of Directors composed of mayors, council members, and supervisors from each of the San Diego region's 19 local governments, as well as ex officio members from Caltrans, Indian tribes, and Mexico.

Specific Plan. A tool authorized by Government Code Section 65450, et seq. for the systematic implementation of the General Plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.

Sphere of Influence. The probable physical boundaries and service area of a local agency, as determined by the Local Agency Formation Commission of the County.

Splay. Spread wide and outward. A hazardous area along a fault.

Standards. (1) A rule or measure establishing a level of quality or quantity that must be complied with or satisfied. Government Code Section 65302 requires that general plans spell out the objectives, principles, "standards" and proposals of the general plan. Examples of standards might include the number of acres of park land per 1,000 population that the community will attempt to acquire and improve, or the "traffic Level of Service" (LOS) that the plan hopes to attain. (2) Requirements in a zoning ordinance that govern building and development as distinguished from use restrictions - for example, site-design regulations such as lot area, height limit, frontage, landscaping and floor area ratio.

Statement of Overriding Consideration. A written explanation prepared by a public agency that explains why it approved a project, despite the presence of significant, unavoidable environmental impacts.

State Water Project. A water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants, which extends over two-thirds of California, and delivers water from the Sierra Nevada Mountains and Sacramento Delta South to Central and Southern California water agencies.

Stormwater. Precipitation from rain or snow that accumulates in a natural or man-made watercourse or conveyance system.

Streets, Local. See "Streets, Minor"

Streets, Major. The transportation network that includes a hierarchy of freeways, arterials, and collectors to service through traffic.

Streets, Minor. Local streets not shown on the Circulation Plan, Map, or Diagram, whose primary intended purpose is to provide access to fronting properties.

Streets, Through. Streets that extend continuously between other major streets in the community.

Structure. Anything constructed or erected that requires location on the ground (excluding swimming pools, fences, and walls used as fences).

Subregional. Pertaining to a portion of a region.

Subdivision. The division of a tract of land into defined lots, either improved or unimproved, which can be separately conveyed by sale or lease, and which can be altered or developed. "Subdivision" includes a condominium project as defined in Section 1350 of the California Civil Code and a community apartment project as defined in Section 11004 of the Business and Professions Code.

Subsidence. The sudden sinking or gradual downward settling and compaction of soil and other surface material with little or no horizontal motion. Subsidence may be caused by a variety of human and natural activity, including earthquakes. (See "Settlement")

Substandard Housing. Residential dwellings that, because of their physical condition, do not provide safe and sanitary housing.

Sulfur Dioxide. A colorless, odorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels.

Surface Mining and Reclamation Act (SMARA). State law that authorizes and directs local agencies to adopt ordinances establishing procedures for the review and approval of reclamation plans and the issuance of permits to conduct surface mining operations.

Surface Runoff. The amount of rainfall water that does not percolate into the ground prior to flowing by gravity to surface storage.

Surface Rupture. The breakage of ground along the surface trace of a fault caused by the intersection of the fault surface area ruptured in an earthquake with the Earth's surface.

Surface Water. Water that flows in streams and rivers and in natural lakes, in wetlands, and in reservoirs constructed by humans.

Sustainability. Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainable Development. Development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. (Source. Minnesota State Legislature)

Tax Increment. Additional tax revenues that result from increases in property values within a redevelopment area. State law permits the tax increment to be earmarked for redevelopment purposes but requires at least 20 percent to be used to increase and improve the community's supply of very low- and low-income housing.

Telecommuting. An arrangement in which a worker is at home or in a location other than the primary place of work, and communicates with the workplace and conducts work via wireless or telephone lines, using modems, fax machines, or other electronic devices in conjunction with computers.

Threshold Capacity. The maximum capacity a road can carry at an acceptable level of service (defined by Riverside County policy as LOS A through D). Traffic volumes above this threshold indicate an unacceptable level of service (LOS E, F).

Tiering. Refers to the concept of multi-tiered approach to preparing Environmental Impact Reports. The first-tier Environmental Impact Report covers general issues in a broader program-oriented analysis. Subsequent tiers incorporate by reference the general discussion from the broader Environmental Impact Report, while primarily concentrating on the issues specific to the action being evaluated.

Total Response Time. The total amount of time it takes a unit to reach the incident from the time of the call. Total Response Time can be calculated by adding the Dispatch Time, Turnout Time, and Travel Time.

Traffic Model. A mathematical representation of traffic movement within an area or region based on observed relationships between the kind and intensity of development in specific areas. Many traffic models operate on the theory that trips are produced by persons living in residential areas and are attracted by various non-residential land uses. (See "Trip")

Trail. A marked, graded, or paved non-motorized path, typically removed from vehicular roadways that are primarily recreational in nature. Trails can also serve as alternative modes of transportation. Trail characteristics vary depending upon location and type of use. Trails within or adjacent to open space or MSHCP preserves are

guided by ecological principles and the prevailing MSHCP, which require resources protection first, with active recreational as subservient uses.

Transfer of Development Rights. Also known as "Transfer of Development Credits," a program that can relocate potential development from areas where proposed land use or environmental impacts are considered undesirable (the "donor" site) to another ("receiver") site chosen on the basis of its ability to accommodate additional units of development beyond that for which it was zoned, with minimal environmental, social, and aesthetic impacts.

Transit. The conveyance of persons or goods from one place to another by means of a local, public transportation system.

Transit, Public. A system of regularly scheduled buses and/or trains available to the public on a fee-per-ride basis. Also called "Mass Transit."

Transit-dependent. Refers to persons unable to operate automobiles or other motorized vehicles, or those who do not own motorized vehicles. Transit-dependent citizens must rely on transit, paratransit, or owners of private vehicles for transportation. Transit-dependent citizens include the young, the handicapped, the elderly, the poor, and those with prior violations in motor vehicle laws.

Transit-oriented Development (TOD). A mixed-use community within an average 2,000-foot walking distance of a transit stop and core commercial area. TODs mix residential, retail, office, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car.

Transit Nodes. A subcategory of the Village classification, includes sites within walking distance - approximately ¼ mile – of future rapid transit stations. Served by either express bus or rail service, Transit Node areas are planned as diverse, mixed-use areas with a range of residential, retail, and where appropriate, employment-generating land uses (e.g., office/professional or light industrial) as well as parks and civic spaces.

Transit Service Types.

- Fixed - Service that follows a set route and schedule, including urban and suburban rail and bus service.
- Demand Responsive - Service that does not operate on a set schedule, but is available to pick up passengers when they call for service. This is often in a van or smaller bus that picks up multiple passengers at a time.
- Paratransit - Transportation services such as car pooling, van pooling, taxi service, and dial-a-ride programs.

Transitional Housing. Shelter provided to the homeless for an extended period, often as long as 18 months, and generally integrated with other social services and counseling programs to assist in the transition to self-sufficiency through the acquisition of a stable income and permanent housing.

Transportation Demand Management (TDM). A strategy for reducing demand on the road system by reducing the number of vehicles using the roadways and/or increasing the number of persons per vehicle. TDM attempts to reduce the number of persons who drive alone on the roadway during the commute period and to increase the number in carpools, vanpools, buses and trains, walking and biking. TDM can be an element of TSM (see below).

Transportation Systems Management (TSM). A comprehensive strategy developed to address the problems caused by additional development, increasing trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

Trip. A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one "production end" (or origin - often from home, but not always), and one "attraction end" (destination). (See "Traffic Model.")

Trip Generation. The dynamics that account for people making trips in automobiles or by means of public transportation. Trip generation is the basis for estimating the level of use for a transportation system and the impact of additional development or transportation facilities on an existing, local transportation system. Trip generations of households are correlated with destinations that attract household members for specific purposes.

Truck Route. A path of circulation required for all vehicles exceeding set weight or axle limits, a truck route follows major arterials through commercial or industrial areas and avoids sensitive areas.

Trustee Agency. A state agency with legal jurisdiction over natural resources held in trust for the people of the state, and which are affected by a project.

Uniform Building Code (UBC). A national, standard building code that sets forth minimum standards for construction.

Urban. Of, relating to, characteristic of, or constituting a city. Urban areas are generally characterized by moderate and higher density residential development (i.e., three or more dwelling units per acre), commercial development, and industrial development, and the availability of public services required for that development, specifically central water and sewer, an extensive road network, public transit, and other such services (e.g., safety and emergency response). Development not providing such services may be "non-urban" or "rural" (See "Urban Land Use"). CEQA defines "urbanized area" as an area that has a population density of at least 1,000 persons per square mile (Public Resources Code Section 21080.14(b)).

Urban Design. The attempt to give form, in terms of both beauty and function, to selected urban areas or to whole cities. Urban design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.

Urban Land Use. Residential, commercial or industrial land use in areas where urban services are available.

Urban Services. Utilities (such as water, gas, electricity and sewer) and public services (such as police, fire, schools, parks and recreation) provided to an urbanized or urbanizing area.

Urban / Wetlands Interface. The area where structures and other human occupancy development meet or intermingle with undeveloped wildland or vegetation.

U.S. Fish and Wildlife Service (USFWS). A bureau within the Department of the Interior with the mission to work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people.

Unincorporated Area. Land located outside the city limits.

Unique Farmland. As designated by the State Farmland Monitoring and Mapping Program, Land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance that is currently used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes and cut flowers.

Utility. A regulated entity, which exhibits the characteristics of a natural monopoly. For the purposes of electric industry restructuring, "utility" refers to the regulated, vertically integrated electric company. "Transmission utility" refers to the regulated owner/operator of the transmission system only. "Distribution utility" refers to the regulated owner/operator of the distribution system, which serves retail customers.

Utility Corridors. Rights-of-way or easements for utility lines on either publicly or privately owned property. (See "Right-of-way" or "Easement")

Vegetation Community. A group of plants that tend to occur together in consistent definable groups based on typical constituents.

Vehicle-Miles Traveled (VMT). A key measure of overall street and highway use. Reducing VMT is often a major objective in efforts to reduce vehicular congestion and achieve regional air quality goals.

View Corridor. The line of sight 1) identified as to height, width, and distance 2) of an observer looking toward an object of significance to the community (e.g., ridgeline, river, historic building, etc.); the route that directs the viewer's attention.

Viewshed. The area within view from a defined observation point.

Volume-to-Capacity Ratio. A measure of the operating capacity of a roadway or intersection, in terms of the number of vehicles passing through, divided by the number of vehicles that theoretically could pass through when the roadway or intersection is operating at its designed capacity. Abbreviated as "V/C". At a V/C ratio of 1.0, the roadway or intersection is operating at capacity. If the ratio is less than 1.0, the traffic facility has additional capacity. Although ratios slightly greater than 1.0 are possible, it is more likely that the peak hour will elongate into a "peak period." (See "Level of Service")

Waste. Sewage and any and all other waste substance, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature, including such wastes placed within containers of whatever nature, prior to and for the purpose of disposal.

Wastewater. Commonly known as sewage, consists of three categories of liquid wastes: 1) those conducted away from all except industrial uses – known as sanitary, or domestic sewage; 2) those produced by industrial processes – known as industrial sewage; and 3) surface water, groundwater and stormwater that flow directly into or infiltrate sewers – known as storm sewage.

Water Distribution System. A means of transporting water to its diverse consumers throughout a community. The system generally consists of transmission mains, lateral mains, pipes that serve individual buildings, fire hydrants and distribution reservoirs.

Water-efficient Landscaping. Landscaping designed to minimize water use and maximize energy efficiency.

Watercourse. Natural or once natural flowing (perennially or intermittently) water including rivers, streams and creeks. Includes natural waterways that have been channelized, but does not include manmade channels, ditches, and underground drainage and sewage systems.

Water Master Plan. An important tool in the development of an effective and efficient water system. Serves as a guide for the orderly reinforcement and future expansion of a water district's water system.

Water Recycling. The treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable or potable reuse.

Watershed. The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake, or reservoir.

Water Supply System. A utility system designed to carry water from a source to its diverse consumers. The system often consists of one or more water sources, a means of transporting water from the source to a water treatment plant, the plant itself and a distribution system for transporting water to individual consumers.

Waterway. See "Watercourse"

Wetlands. Lands, including vernal pools, having one or more of the following attributes are wetlands: (1) at least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) the substratum is predominantly undrained hydric soil; or (3) it is an ephemeral or perennial stream and substratum is predominantly non-soil in which waters from a tributary drainage area of 100 acres or larger flow.

Wildland/Urban Interface. The geographical meeting point of two diverse systems: wildland and structures. At this interface, structures and vegetation are sufficiently close that a wildland fire could spread to structures or a structure fire could ignite vegetation.

Williamson Act. Known formally as the California Land Conservation Act of 1965, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a 10-year contract between the city or county and an owner of land whereby the land is taxed on the basis of its agricultural use rather than the market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

Zoning: The division of a city or county by legislative regulations into areas, or zones, that specify allowable uses for real property and size restrictions for buildings within these areas; a program that implements policies of the General Plan.

Zoning District: A designated section of a city or county for which prescribed land use requirements and building and development standards are uniform.